



DEPARTMENT OF PUBLIC WORKS

REVISIONS TO
STANDARD SPECIFICATIONS FOR
CONSTRUCTION & MATERIALS
ISSUED AS PART OF ADDENDUM 3

This book supersedes Addenda 1&2 to the
Standard Specifications for Construction
& Materials issued February 2000.

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Consolidated ADDENDUM (#3) to the Standard Specifications for Construction and Materials

February, 2007

Being a combination of material from the First and Second Addenda of December 1, 2000 and May 2002 respectively with subsequently added revisions. Items are arranged by order of appearance in the *Standard Specifications*, as referenced by page number. Dates in parentheses at left of items are the dates of adoption of the particular addendum,

Deletions are in [brackets]; Additions are *italicized*; changes are in **Bold** and/or by specific instructions.



(5/02) **Add** GP-1.03, Organizational Definitions, Page 10:

Regional Engineer – *Regional Engineer is the same as Engineer.*

(5/02) **Add** GP-1.04, Abbreviations, Page 11:

DIPRA *Ductile Iron Pipe Research Association*

(12/1/00) **Revise** GP-1.05 – DEFINITIONS, page 16:

GENERAL NATURE OF THE WORK

First X B – Bridge C – Culvert D – Storm Drain G – Grading or miscellaneous P- Public Building R – Road <i>(Except when used with RA, indicates Right-of-Way Improvement)</i> S – Sewer W- Water U- Utility	Second X D – Development (Public) F – Fire Station L – Library O – Operating Building P – Police Station X – Capital Improvement S – Development (<i>Private other than UA or RA</i>) A – Agreement (<i>for Private UA and RA</i>)
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(5/02) **Revise** GP-1.05, Definitions, Page 17:

Informal Contract – A private contract not exceeding a bid price of (correction 7/06) **[fifteen] twenty-five** thousand dollars **[\$15,000] (\$25,000)**, subject to the approval of the Department of Permits and Development Management, bid on a

lump sum basis, and not requiring a contractor performance bond or payment bond. Informal contracts may be used for commercial water meters and detector checks two (2) inches and smaller, fire hydrants, sanitary connections, residential water and sewer house connections for four (4) lots or **[more] less**, and small road and drain projects not exceeding the maximum bid price.

Major Contract Items – The original Contract Items of greatest cost, **excluding Contingent Items**, (computed from the original price and estimated quantity or lump sum price) plus such other Contract Items next in sequence of lower cost (computed in like manner) as are necessary to show a total cost of original prices and quantities of not less than 60 percent of the original cost. (See “Minor Contract Items” **and** “**Contingent Items.**”)

Minor Contract Items – All Contract Items other than the Major Contract Items **and Contingent Items**. (See “Major Contract Items” **and** “**Contingent Items.**”)

(12/1/00) **Add** to GP-1.05 – DEFINITIONS (“Private Contract” definition), page 18:

Private contracts bearing the letters “UA” or “RA” within their contract numbers are governed by the Baltimore County Department of Permits and Development Management Policy for the Construction of Improvements Under Private Contracts pursuant to Baltimore County Code Section [26-236] 32-4-301 (correction 7/06), and shall be referred to as UA and RA Contracts in these Specifications.

(12/1/00) **Add** to GP-1.05 – DEFINITIONS, page 19:

RA – (See Private Contract)

(5/02) **Revise** GP-1.05, Definitions, Page 20:

Subcontractor – Any person undertaking a portion of the construction or any other part of the work under the terms of the Contract, by virtue of an agreement with the Contractor **[or subcontractor, who prior to such undertaking has received the approval of the Administration]**. Subcontractor does not include an employee with an employment contract, or an employee organization with a collective bargaining agreement.

(12/1/00) **Add** to GP-1.05 – DEFINITIONS, page 21:

UA – (See Private Contract)

(5/02) **Revise** GP-1.05, Definitions, Pages 19 & 21:

[Addition to definitions, Pages 19 & 21:

RA – (See Private Contract)

UA – (See Private Contract)]

(5/02) **Add** to GP-1.05, Definitions, Page 21:

Addition to definitions, Page 21:

Utility/Road Agreements – These UA/RA agreements are initiated in the Department of Permits and Development Management (PDM) with Applicants, such as developers, schools, or commercial property owners, for the construction and installation of improvements to utilities or roads at no cost to the County. PDM approves the cost estimates and construction drawings and collects any security and fees.

(12/1/00) **Revise** GP-2.00 – GENERAL, page 21:

Only the bid of a Contractor who holds a valid Prequalification Certificate 10 days prior to the date of Bid Opening will be considered. A Prequalified Contractor is one whose rating and classification have been determined by the Prequalification Committee and ratified by the Director of **[Budget and Finance] Public Works**.

A prospective bidder, when prequalifying, shall state in **[his] the** application the extent and type of work **[he considers himself] the firm** is qualified to handle at one time. **[His] The** Experience Questionnaire shall show the exact type of work he has performed during the preceding five (5) years **[This] The** information **in the Questionnaire** shall be the basis for **[a]** determination of **[his] the firm's** financial rating and **[his]** work classification(s). Following the evaluation, the Contractor may receive a Certificate of Prequalification from the Director of **[Budget and Finance] Public Works**.

(5/02) **Revise** GP-2.04, Site Investigations, Page 23:

The Contractor acknowledges that he has investigated... Any failure by the Contractor to acquaint himself with the available information **[may] will** not relieve him from responsibility...

(12/1/00) **Revise** GP-2.05 TAXES – Responsibility for Payment, Exemptions, Forms to File etc. Page 24:

(b) The Director of **Budget & Finance** of the County may not authorize payment to a Contractor who has submitted **[in] an** invoice if that Contractor is indebted by virtue of unpaid taxes or other obligations when in an amount of fifty dollars (\$50) or more to any County agency. In this regard, Contractors shall indicate their Federal Tax Identification or Social Security number **on the Prequalification Questionnaire or** on the face of each invoice billed to the County.

(7/06) **ADD** the following item on page 25 of Section:

GP - 2.06 PREPARATION OF BID:

(d) Confidential, Proprietary Information or Trade Secrets

Bidders must specifically identify any portions of their proposals deemed to contain confidential, proprietary information or trade

secrets. Such designations will not necessarily be conclusive and bidders may be required to justify why such material should not, upon request, be disclosed by the County under the Maryland Public Information Act, Title 10, Subtitle 6 of the State Government Article of the Annotated Code of Maryland.

(12/1/00) **Revise** GP-2.07 Proposal Guaranty, Page 25:

No proposal will be considered unless accompanied by a guaranty of the character and in the amount specified herein. The guaranty must be the Bid Bond in the form provided with the Proposal, executed by a surety licensed in the State of Maryland. The surety must guarantee payment to Baltimore County of liquidated damages of **[no less than]** 5% of the bid. If one bid payment is received, the guaranteed payment is 5%. If two or more bids are received, the guaranteed payment is the difference between the lowest and the next lowest bid, subject to the above percentage limitations[**s**]. This guaranty is required in case the bidder defaults in any specified matter before the award or defaults in executing or delivering the Contract Agreement, together with Payment and Performance Bonds for **the amount of the bid after the award**. The surety must be currently rated "B" or better by the A.M. Best Company, and the bid must...

(5/02) **Revise** GP-2.07, Proposal Guaranty, Page 25:

[No proposal will be considered unless accompanied by a guaranty of the character and in the amount specified herein. ...The Surety must be currently rated "B" or better by A. M. Best Company, and the bid must be in an amount less than or equal to the underwriting limitation contained in the Department of Treasury Circular 570 as amended at the time of underwriting.]

No proposal will be considered unless accompanied by a guaranty of the amount specified in the Proposal in the form of either a certified check or of a bid bond on the form provided therein or an exact facsimile thereof. The bid form must be executed by a Surety that is, as of the date of the bid: (a) licensed in the State of Maryland, (b) rated "B" or better by the A.M. Best Company, (c) authorized by the underwriting limitation contained in the U.S. Department of the Treasury Circular 570, as amended, to guaranty the amount of the bid, and (d) in good standing as determined by the County's Purchasing Agent. The bid bond must guaranty payment to the County of liquidated damages as follows: (a) if only one bid is received, the guaranteed payment shall be five (5.0%) percent of the proposer's bid amount; (b) if two or more bids are received, the guaranteed payment shall be the difference between the proposer's bid amount and the next lowest bid amount, subject to the limitation that the guaranteed payment not be greater than five (5.0%) percent of the proposer's bid amount. This bid bond is required in case the successful bidder, after issuance of Notice of Award, fails to comply, timely and completely, with each of the requirements set forth under Section G.P. 3.04.

(12/1/00) **Revise** GP-2.09 Communications and Interpretations – Prior to Bid Opening, Page 26:

Pre-bid conferences may be conducted by the Department of Public Works **or the Using Agency**. If they are **[not]** to be conducted, notice for the same will be contained in the Invitation for Bids.

(12/1/00) **Revise** GP-2.12, Late Bids, Late Withdrawals and Late Modification, Page 27 & 28:

- (a) Policy. Any bid **is late if not** received at the place designated in the **solicitation [after] at or prior to** the time and date set for receipt of bids **[is late]**. Any request for withdrawal or request for modification received at the place designated in the solicitation after the time and date set for receipt of bids **is late**.

(12/1/00) **Revise** GP-2.14 Mistakes in Bids, Page 29:

- (b) Confirmation of Bid. If the Director of **[Finance] Public Works** knows or has reason to conclude that a mistake may have been made, the Bidder may be required to confirm the bid. Situations in which confirmation may be requested include obvious, apparent errors on the face of the bid or a bid unreasonably lower than the other bids submitted. If the bidder alleges mistake, the bid may be corrected or withdrawn upon written approval of the Director of **[Public Works] Budget and Finance** if any of the following conditions are met:
- (c) Mistakes Discovered after Award. Mistakes may not be corrected after award of the contract except when the Director of **[Public Works] Budget & Finance** determines that it would be unconscionable not to allow the mistake to be corrected. Changes in price are not permitted.

(12/1/00) **Revise** GP-2.15 Minor irregularities, Page 30:

- (a) General. Minor irregularities in bids, as defined below, may be waived if the Director of **Budget & Finance** of Baltimore County determines that it shall be in the County's best interest. The Director of **Budget & Finance** of Baltimore County may either give a bidder an opportunity to cure any deficiency resulting from a minor irregularity in its bid, or waive the deficiency where it is to the County's advantage to do so.

(12/1/00) **Revise** GP- 2.18, Rejection of all Bids, Page 32 and 33:

- (b) A notice of rejection of all bids shall be sent to all vendors that submitted bids, and bids which have been opened shall be retained by the **Division of Construction Contracts** Administration.

(12/1/00) **Revise** GP-2.19 Bid Evaluation and Award, Page 33:

- (b) **Determination of Lowest Bidder...**
 - (3) The written words **for lump sum bids** will govern in the event of a discrepancy between the prices written in words and the prices written in figures.

- (4) If a unit price has been omitted, the unit price will be determined by dividing the extended price by the quantity.

The Administration reserves the right to make the award by item, or group of items, **[or] rather than** total bid if it is in the best interest of the County to do so **[unless] provided** the bidder **agrees to it [specifies in his bid that a particular or progressive award is not acceptable]**.

(12/1/00) **Revise** GP-2.20 Tie Bids, page 34:

- (b) **Award. [If identical low bids are received from an in-State and out-of-state bidder, the award shall be made to the in-State bidder. If identical low bids are received from in-State bidders or from out-of-state bidders, a drawing shall be conducted, and a witness shall be present to verify and certify the result.]**

If two or more bidders shall be tied for the lowest bid, quality and service being equal, the contract shall be awarded to the bidder qualified as a minority. If both are qualified minorities, the contract shall be awarded to the minority that is a local bidder. For further options on tie bids and the definition of a qualified minority, refer to Baltimore County Code, Section 15-84(6).

(12/1/00) **Revise** GP-2.23 Bid Protests, page 34:

A bid protest must be in writing and filed with the procurement officer. Oral objections, whether or not acted on, are not **[pro-tests] protests**.

(12/1/00) **Revise** GP-3.01 (a) Award of Contract, Page 35

The award of the contract ... with all the requirements prescribed ***unless the time is extended by consent of bidders. If the County fails to award, as described above , it may proceed to award to the lowest responsible bidder who has consented to extend the validity of its bid.***

(5/02) **Replace** GP-3.01, Award of Contract, Page 35:

Delete GP-3.01 in its entirety and replace with:

Written Notice of Award shall be faxed, where available, at the number provided and mailed, by first class mail, to the successful bidder at the address submitted with the bid. In addition, the County's Department of Public Works, Division of Construction Contracts Administration shall maintain for public inspection a record of the date of the Notice of Award for each project.

- A. *The Notice of Award, if it be awarded, shall be within 90 calendar days (or as otherwise specified) after the opening of the proposal, and will be to the lowest responsive, responsible Bidder whose bid complies with all the requirements prescribed. The successful bidder will be notified by letter, sent by first class mail, to the address shown on its Proposal, that its bid has been accepted and that it has been awarded the right to execute the contract proposal book with the County. The Notice of***

Award shall be deemed to have been received three calendar days after the date on the Notice of Award. The successful bidder will also be deemed to be on notice of the information contained in the public record log referred to above.

- B. In all contracts jointly bid, all contractors will be held jointly and severally responsible for the performance of the entire contract.*
- C. The right is reserved to cancel the Notice of Award of any contract at any time before the County fully executes the formal contract proposal book. In time of National Emergency or, in cases where the contract value is in excess of \$100,000, when the successful bidder has failed to fully and satisfactorily complete the minority and women business enterprise forms within the time required under G.P. 3.04, the cancellation of the Notice of Award will be without any liability against the County. At all other times, the County's liability is limited to reasonable invoiced cost of material, not reasonably marketable, which were delivered or in transit to the successful bidder prior to three days after the date of the Notice of Cancellation. All materials paid for by the County under this section shall become the property of the County. No anticipated profit will be paid.*

(12/1/00) **Revise** GP-3.02 Return of Proposal Guaranty, page 36:

[All proposal guaranties, except those of the three lowest bidders, will be returned immediately following opening and the review of the proposals. The guaranty of the three lowest bidders will be returned following the execution of the Contract and approval by the Board, if required. The Contractor has the right to substitute a bid bond for other bid security at any time prior to the return of the proposal guaranty.] If a bid is withdrawn by written notice received in the office designated in the Invitation for Bids before the time and date set for bid opening, the proposal guaranty will be returned if requested. Proposal guaranties of other than the three low bidders will be considered released immediately following opening and review of the Proposal. Proposal guaranties of the 2nd and 3rd low bidders will be returned upon request, following execution of the contract and that of the low bidder can be released upon completion of the contract.

(12/1/00) **Revise** GP- 3.03 Performance Bond and Payment Bond Requirements, page 36:

- (b) Performance and Payment Bonds. [A] Performance and payment [bond] bonds must be from a surety acceptable to the County who is licensed in the State of Maryland and currently rated "B" or better by the A.M. Best Company in an amount less than or equal to the underwriting limitation contained in the Department of Treasury Circular 570 as amended at the time of underwriting. These bonds shall be required for all construction Contracts in excess of twenty-five thousand dollars (\$25,000), each in the amount equal to at least 100 percent of the Contract price. The bonds shall be delivered by the bidder to the Division of Construction Contracts Administration no later than the time the Contract is to be executed. If the bidder fails to*

deliver the required bonds, [his] the bid shall be rejected, [his] the bid security shall be enforced, and award of the Contract may be made to the next lowest responsive and responsible bidder

(5/02) **Replace** GP-3.04, Execution of Contract, Page 36: [See also 7/06 correction to this material, after this correction]

Delete GP-3.04 in its entirety and replace with:

Execution of Contract/ Submission of Required Documents and MBE/WBE Forms

- A. *Not later than ten (10) business days after the date of the Notice of Award, the successful bidder shall have obtained and returned to the County: (1) the fully and properly executed formal contract proposal book, (2) the fully and properly executed payment and performance bonds if required under G.P. 3.03, (3) the fully and properly completed certification of insurance required under T.C. 5.01, and (4) the fully and properly completed minority and women business enterprise forms, if the contract value is in excess of \$100,000, under G.P. 7.29.08. The documents referred to in (1), (2) and (3) are to be delivered to the County's Department of Public Works, Division of Construction Contracts Administration; those referred to in (4) are to be delivered to the County's Office of Fair Practices.***
- B. *The County's Department of Public Works, Division of Construction Contracts Administration, shall record in the public record log, referred to in G.P. 3.01, the date it received from the successful bidder each of the properly completed documents required in subsection A (1), (2) and (3) of this Section, and the date it received notification from the Office of Fair Practices that the successful bidder's minority and women business enterprise forms required in subsection A (4) have been approved. The successful bidder is deemed to be on notice of such information so recorded.***
- C. *In the event the County fails to fully execute the formal contract proposal book within thirty (30) business days after the date all of the required documents in this section have been received by the County Department of Public Works, the successful bidder will have, as its sole remedy, the option to declare the Contract terminated or to agree to an extension of the time for the County to execute the Contract. If the successful bidder, however, shall fail within thirty-five (35) business days of the aforementioned date to deliver written notice to the County's Department of Public Works, Division of Construction Contracts Administration that it elects to rescind its proposal and have the contract terminated, the time period for the County to execute the contract shall automatically be extended for an additional fifteen (15) business days***

(7/06) **REVISE** GP-3.04, Execution of Contract (Page 36), as revised in May 2002 (above) as follows:

- A. Not later than ten (10) business days after the date of the Notice of Award, the successful bidder shall have obtained and returned to the County: (1) the fully and properly executed formal contract proposal book, (2) the fully and properly executed payment and performance bonds if required under G.P. 3.03, (3) the fully and properly completed **[Certificate] Evidence** of Insurance required under T.C. 5.01, and (4) the fully and properly completed minority and women business enterprise forms, if the contract value is in excess of **[\$100,000] \$50,000**, under G.P. 7.29.08. The documents referred to in (1), (2) and (3) are to be delivered to the County's Department of Public Works, Division of Construction Contracts Administration; those referred to in (4) are to be delivered to the County's Office of Fair Practices.

(5/02) **Replace** GP-3.05, Failure to Execute Contract, Page 37:

Delete GP-3.05 in its entirety and replace with:

GP-3.05 FAILURE TO EXECUTE CONTRACT

Failure to deliver to the County the required items listed in G.P. 3.04 within the time specified therein shall be just cause for the annulment of the Notice of Award and the forfeiture of the Proposal Guaranty to the County, not as a penalty, but in liquidation of damages sustained. Notice of Award may then be made to the next lowest responsive, responsible bidder or, at the County's option, the work may be re-advertised.

(12/1/00) **Revise** GP-4.01 Intent of Contract, page 38:

- (c) Omissions from the drawings or Specifications or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and Specifications or which are customarily performed shall not relieve the Contractor from performing such omitted or misdescribed details of work, but they shall be performed as if fully and correctly set forth and described in the drawings and Specifications. The Engineer shall consider modifications of the Contract Proposal and postponement of Bid Opening as may best serve all interested parties where notice of apparent omissions is made **5 business days** before the hour prescribed for bid opening. This is not to be construed as a limitation on the Engineer. If justified, the Engineer may institute contract modifications **by issuance of addendum(s) or, if after execution of the contract, by Supplemental Agreement(s)** for additional or extra work which was not anticipated and shown on the drawings or described in the contract documents.

(12/1/00) **Revise** GP-5.05 Cooperation with Utilities, page 47:

(b) FIRE HYDRANTS

The Contractor shall notify the Fire Department, Fire Dispatch Liaison Officer (410 887-4592) prior to starting any work involving the removal or relocation of existing fire hydrants.

(12/1/00) **Revise** GP-7.01, Compliance with Laws, page 60:

(b) It is not in arrears with respect to the payment of any moneys due and owing [the State of Maryland,] **Baltimore County, Maryland**, or any department or unit thereof, including, but not limited to the payment of taxes and employee benefits, and that it shall not become so in arrears during the term of this Contract;

(12/1/00) **Revise** GP-7.07 Detours, page 64:

Detours may be indicated in the Contract Documents, or at the Contractor's request traffic may be detoured over approved routes along existing roads when acceptable to the Bureau of **[Highways and Equipment Maintenance] Traffic Engineering and Transportation Planning**.

(7/06) **Replace** GP-7.14 LIABILITY INSURANCE (Page 68) with the following:

Prior to the start of the work on the Contract, or prior to the execution of the contract for those Public Works contracts bid, the Contractor shall submit to the Division of Construction Contracts Administration, an Evidence of Insurance certificate indicating that the following insurance is carried: Comprehensive General Public Liability and Property Damage, Automobile Liability, and Workers' Compensation in the amounts specified elsewhere in the Contract.

(7/06) **Revise:** GP-7.29 MINORITY BUSINESS ENTERPRISE AND AFFIRMATIVE ACTION (Page 75) as follows:

7.29.01 County Policy: It is the policy of Baltimore County, Maryland, that minority business enterprises and female contractors, as defined by Executive order [dated July 7, 1983], shall have the maximum opportunity to participate in the performance of contracts financed in whole by County funds for project value in excess of **[\$100,000] \$50,000.00**. The following requirements are applicable to all contracts with proposals exceeding that amount.

(12/1/00) **Revise** GP-7.29.06, Seeking Commitments, page 77:

The bidder will seek commitments, by subcontract or otherwise, from minority business enterprises for supplies and services, any combined value of which equals **[of] or** exceeds the appropriate percent of the total value of the contract.

(12/1/00) **Revise** GP-7.29.08, page 77:

Within **[seven working] ten business** days after bid opening, the apparent low bidder shall submit to the County Representative the following information:

[(a) The name of an employee designated as the bidder's liaison officer for minority affairs.]

(5/02) **Revise** GP- 7.29.11, Minority Business Enterprise and Affirmative Action, Page 79:

7.29.11 Quarterly Reports. The bidder will submit reports on a quarterly basis of contracts and other business transactions executed with minority business

enterprises [with respect to the records referred to in Section 5.04.01 above in such form, manner and content] as prescribed by the Baltimore County Department of Public Works.

(5/02) **Revise** GP-7.29.17, Minority Business Enterprise and Affirmative Action, Page 80:

7.29.17 Penalties. The apparent low bidder's failure to perform in providing a responsive MBE/WBE Program [as required in Section 5.03.03] may result in the Director of Public Works recommending rejection of the Bid, forfeiture of the Bid Bond, and negotiations with the next low bidder under similar time period requirements.

(7/06) **Revise: GP-7.29 MINORITY BUSINESS ENTERPRISE AND AFFIRMATIVE ACTION** (Page 81) as follows:

Section 7.29.22 Contractor's Responsibility. For all contracts or subcontracts in excess of [~~\$100,000~~] **\$50,000.00**, the Contractor shall comply with the following requirements.

(5/02) **Revise** GP-8.01, Subcontracting, Page 85:

GP-8.01 SUBCONTRACTING

*Except as may be provided elsewhere in the Contract, the Contractor to whom a Contract is awarded shall perform with his own organization and with the assistance of workmen under his immediate supervision, work of a value of not less than 50 percent of the total original value of the Contract. The Director of Public Works may permit the Contractor to sublet work in excess of the 50 percent limitation where it is shown that the best interest of the County will be promoted thereby. **Consent to subcontract shall not be construed to relieve the Contractor or Surety of any responsibility for the fulfillment of all the requirements of the contract.***

[No portion of the Contract shall be subcontracted, assigned or otherwise disposed of except with the written consent of the Procurement Officer. Any assignment, subcontract or other disposition of all or part of this Contract without the express written consent of the Procurement Officer shall be null and void. Consent to subcontract, assign or otherwise dispose of any portion of the Contract shall not be construed to relieve the Contractor or surety of any responsibility for the fulfilling of all the requirements of the contract.]

No portion of the Contract shall be assigned, or otherwise disposed of except with the written consent of the Procurement Officer. Any assignment or other disposition of all or part of this Contract without the express written consent of the Procurement Officer shall be null and void. Along with legal documentation signed by the parties, any approved assignee must provide the County with an executed contract specifying the items and dollar volume of the work to be performed, including payment and performance bonds and certificate of insurance.

*The Contractor shall incorporate by reference or otherwise include these **[General P]** provisions in every subcontract issued pursuant to or under this Contract, and shall require that the same reference or inclusion be contained in every subcontract entered into by any of its subcontractors.*

(12/1/00) **Revise** GP-8.02, Notice to Proceed, page 86:

- (a) **[After the Contract has been executed,] Upon execution of the contract, within 90 days from the date of award, the Division of Construction Contracts Administration will [, within the time limit specified by the Administration elsewhere in the Contract Documents] issue to the Contractor a "Notice to Proceed" and this notice will stipulate when the Contractor is expected to begin work. The specified Contract time shall begin on the date stipulated in the Notice to Proceed or, if an earlier start is authorized in the Notice to Proceed, on the day work (other than the erection of the inspection office, construction stakeouts and mobilization) actually starts. Work done prior to receipt of the Notice to Proceed is unauthorized and will not be measured or paid for.**
- (c) If the County is unable to issue the Notice to Proceed within 90 days from the award of the Contract, the Contractor may request the County to rescind the Contract, it being mutually understood that responsibilities and liabilities will be limited to the **preauthorized** net cost of materials actually fabricated and/or delivered to the site of the Contract.

(12/1/00) **Revise** GP-8.08, Termination for Default, page 91:

- (b) If, at the meeting with the Contractor and Surety, the Engineer is unable to resolve the issues specified in the Notice and assure the County that the construction will be resumed in good faith, **[wither] whether** by the Contractor or through the good offices of the Surety, **[of] or** if the Contractor and Surety, or either one, fails to meet as specified in the Notice, then the County shall, upon written notice of the Engineer of the fact of such delay, neglect or default and the Contractor's failure to comply with such notice, have full power and authority, without violating the Contract, to take the prosecution of the work out of the hands of the Contractor.

(12/1/00) **Revise** GP-10, Private Contracts, page 110:

- (a) A private contract is used in land development projects when, with the permission of the Director of the Department of **[Public Works] Permits and Development Management**, the construction contract is let by the developer **[rather than] and processed through** the County. The developer shall obtain the bid privately **and the cost estimates will be processed** using **County** contract forms provided by the Division of Construction Contracts Administration **or as approved by Baltimore County for use with UA and RA contracts**. No funds may be used in a private contract. **UA and RA contracts are not governed by those provisions of these Specifications which involve payment by developers to contractors.**

- (b) The following sections apply to private contracts:

107.01
204.03.07B
204.04
501.03.14
501.04.05
504.04
504.03.03
1001.03.01(b) 2

(5/02) **Revise** GP-10, Private Contracts, Pages 110 – 112:

[GP-10 PRIVATE CONTRACTS] GP- 10.01 PRIVATE CONTRACTS

GP-10.02 Utility/Road Agreements – *These UA/RA agreements are for projects [not requiring a Public Works Agreement](deletion 7/06) wherein the Applicant (developer, County agency, or commercial property owners) constructs and installs improvements to utilities or roads at no cost to the County. The Department of Permits and Development Management (PDM), in accordance with the applicable provisions of the Baltimore County Code and the PDM Construction Policy Manual, approves the cost estimates and construction drawings and collects, except for County agencies, the security and all fees. An applicant must provide to PDM, in writing, the name, address and phone number of an authorized site representative. The applicant must use a prequalified contractor who provides a Certificate of Insurance and performs the work in accordance with the Baltimore County Department of Public Works Standard Specifications for Construction and Materials and Standard Details of Construction manual in effect on the date of the Notice to Proceed. It is the Applicant's responsibility to schedule an on-site pre-construction meeting with the Department of Public Works, the Department of Environmental Protection and Resource Management and the prequalified contractor. No construction is to be performed prior to receiving a written "Notice to Proceed" from the Department of Public Works.*

(12/1/00) **Revise** Indentation within TC-2.03 Value Engineering Change Proposals, page 122:

- (c) **A** detailed estimate of the cost under the existing Contract and under the VECP. **[d]**
- (d) Proposed Plans, Specifications and recommendations as to how the VECP changes shall be accomplished.

(12/1/00) **Revise** TC-3.02, Construction Documents to Successful Bidder, page 126:

The successful bidder on each Contract advertised by the County will be **[sent provided]** upon award of the Contract five sets of Bid Proposal Books and Plans **[five Invitation for Bids Books and two sets of Cross Sections]** free of charge, **which number may be increased to fifteen for certain large building projects**. Any additional Plan sets required by the Contractor may be purchased at the price noted in Notice to Contractors. Individual Plan sheets **[and individual sheets of Cross Sections]** or complete sets of plans **[or cross sections]** may be purchased at the prevailing price set by the County.

(12/1/00) **Delete** the following from TC-3.04, Warranty of Construction, page 127:

[The warranty as defined under paragraphs (a) through (g) in GP-4.10 (Warranty of Construction) does not apply to administration Contracts unless specified in the Invitation for Bids.]

(12/1/00) **Revise** TC-5.01 Insurance, paragraph 2, page 132:

The Contractor shall submit to the Chief of the Division of Construction Contracts Administration a Certificate of Insurance indicating that the Contractor carries Comprehensive General Public Liability and Property Damage Insurance in the amounts of **[at least five hundred thousand dollars (\$500,000)] one million dollars (\$1,000,000) each occurrence for the death of or injury to any person; [and one million dollars (\$1 000 000) for the death of or injury to two or more persons in any one occurrence; two hundred fifty thousand dollars (\$250,000)] five hundred thousand dollars (\$500,000) for property damage in [any one] each occurrence [with an aggregate property damage coverage of five hundred thousand dollars (\$500 000) for two or more occurrences] OR Bodily Injury Liability and Property Damage Liability Combined one million dollars (\$1,000,000) each occurrence.**

Such insurance shall protect the Contractor from claims which may arise out of, or result from, the Contractor's operations under the contract, whether such operations be by the Contractor, any Subcontractor, anyone directly or indirectly employed by the Contractor or Subcontractor, or anyone for whose acts any of the above may be liable.

Minimum coverages to be included: Independent Contractor's coverage; Completed Operations and Products Liability coverage; and Contractual Liability coverage. Damages Not to be Excluded: Such insurance shall contain no exclusions applying to operations by the Contractor or any Subcontractor in the performance of the Contract pertaining to: (1) Collapse of, or structural injury to, any building or structure; (2) Damage to underground property; or (3) Damage arising out of blasting or explosion.

Minimum Limits of Automobile Liability Insurance: Bodily Injury Liability five hundred thousand dollars (\$500,000) any one accident; Property Damage Liability five hundred thousand dollars (\$500,000) any one accident; OR Bodily Injury Liability and Property Damage Liability Combined five hundred thousand dollars (\$500,000) any one accident. Such insurance shall provide coverage for all owned, non-owned and hired automobiles.

Workers' Compensation and Employers' Liability Insurance: Such insurance must contain statutory coverage, including Employers' Liability insurance with limits of at least: one hundred thousand dollars (\$100,000) Each Accident – Bodily Injury by Accident; one hundred thousand dollars (\$100,000) Each Employee – Bodily Injury by Disease; five hundred thousand dollars (\$500,000) Policy Limit – Bodily Injury by Disease.

Any policy exclusions must be shown on the face of the Certificate of Insurance.

[The Certificate of Insurance shall be accompanied by a document (a copy of State License or letter from insurer) which indicates that the agent signing the certificate is an authorized agent of the insurer.]

When specified in the Contract Documents, the Contractor shall carry the type and amounts of insurance in addition to any other forms of insurance or bonds required under the terms of the **[Contract] Contract** and these Specifications.

(7/06) **Replace TC-5.01 INSURANCE** (Page 132 and as modified 12/1/00, above) with the following:

As identified in **GP-7.14 Liability Insurance**, prior to the start of the contract, or prior to the execution of the contract for those contracts bid, the Contractor shall submit to the Division of Construction Contracts Administration an Evidence of Insurance certificate indicating that the following coverages are carried:

Comprehensive General Public Liability and Property Damage Insurance in the amounts of at least five hundred thousand dollars (\$500,000) for the death of or injury to any person, each occurrence. Such insurance shall protect the Contractor from claims which may arise out of, or result from, the Contractor's operations under the contract, whether such operations be by the Contractor, any Subcontractor, or anyone directly or indirectly employed by the Contractor or Subcontractor, or anyone for those acts any of the above may be liable. Minimum coverages to be included: Independent contractor's coverage; Completed Operations and Products Liability coverage; and Contractual Liability coverage. Damages Not to be Excluded: Such insurance shall contain no exclusions applying to operations by the Contractor or any Subcontractor in the performance of the Contract pertaining to: (1) Collapse of, or structural injury to, any building or structure; (2) Damage to underground property; or (3) Damage arising out of blasting or explosion and, where applicable, (4) Removal of asbestos/lead or debris and building products containing asbestos/lead, transportation and disposal of asbestos/lead and contaminated materials.

Automobile Liability Insurance: Bodily Injury Liability and Property Damage Liability – combined single limit of five hundred thousand dollars (\$500,000) any one accident. Such insurance shall provide coverage for all owned, non-owned and hired automobiles.

Workers' Compensation and Employers' Liability Insurance: Such insurance must contain statutory coverage, including Employers' Liability insurance with limits of at least for **Bodily Injury by Accident** – two hundred fifty thousand dollars (\$250,000) each accident; **Bodily Injury by Disease** – two hundred fifty thousand dollars (\$250,000) each employee; and **Bodily Injury by Disease** – five hundred thousand dollars (\$500,000) policy limit.

Any policy exclusions must be shown on the face of the Evidence of Insurance.

When specified in the Contract Documents, the Contractor shall carry the type and amounts of insurance in addition to any other forms of insurance or bonds required under the terms of the Contract and these Specifications.

The cost of the insurance will be incidental to the Contract lump sum price for mobilization, or if that is not identified, to the other items specified in the Contract documents.

Contractor and Railroad Public Liability and Property Damage Insurance shall be provided as specified in TC-6.03.

The Insurer shall immediately notify the Baltimore County Division of Construction Contracts Administration in the event that the Contractor's insurance coverage lapses for any reason.

(5/02) **Revise** TC-5.03, Subcontractors, Page 133:

[The subcontractors who are named in the Contractors bid and approved by the Administration and those approved when subsequently submitted shall perform the Contract items as approved by the Administration. Requests for permission to sublet, assign or otherwise dispose of any portion of the Contract shall be in writing and include the item number or numbers and the dollar value. The requirement in GP-1.05 (Subcontracting) to obtain the consent of surety prior to requesting subcontractor approval is not applicable on Administration Contracts. The Contractor shall give assurance that the minimum wage for labor, as specified in the Contract Documents shall apply to labor performed on all work sublet, assigned or otherwise disposed of in any way.

When a subcontractor has been approved by the Administration for the performance of specific items of work on the Contract, the Administration will not allow the Contractor to substitute another subcontractor, except in the event the Contractor requests in writing that the approved subcontractor be relieved of the necessity of performance of the work. Any change of subcontractors shall be requested in writing by the prime Contractor and shall have the written concurrence of the previously designated subcontractor. Concurrence shall not be unreasonably delayed in the judgment of the Administration.

If a subcontractor does not perform to the satisfaction of the prime Contractor, the prime Contractor may request to be allowed to perform the work with his own forces or request that another subcontractor mentioned by name, be substituted. When reasons submitted for the substitution of the subcontractor indicate that the change will be in the best interest of the Administration, approval of the request will be granted.

Roadside production of materials unless performed by the Contractor, shall be considered as subcontracting. This shall be construed to mean the production of crushed stone, gravel or other materials by means of portable or semi-portable crushing, screening or washing plants, established or reopened in the vicinity of the work for the purpose of supplying materials to be incorporated into the work on a designated project or projects.

The purchase of sand, gravel, crushed stone, crushed slag, batched concrete aggregates, ready mix concrete or other materials produced at and furnished from established and recognized commercial plants,

together with the delivery of such materials to the site of the work by the producer or by recognized commercial hauling companies, shall not be considered as subcontracting.]

Subcontractors undertaking portions of work under the general contractor in accordance with GP-8.01 (less than 50% of its original value) do not require Public Works approval, unless specified in the contract documents. When required, the Contractor, shall give assurance that the minimum wage for labor, as specified in the contract documents, shall apply to labor performed on all work sublet, assigned or otherwise disposed of in any way.

(12/1/00) **Revise** TC-6.09, Recycled and Rehandled Materials, page 143:

For recycled or rehandled material furnished on the project by the Contractor for use in embankment, base, subbase or drainage media, the Engineer may require the Contractor to have the material tested and certified to be in conformance with all applicable **[environment- al] environmental** requirements. The required testing will be determined by the Engineer and may include, but is not limited to, the EPA Toxicity Characteristic Leaching Procedure.

(5/02) **Revise** Section 103.03.02, Building Substitute (Trailer), Page 158:

[(15) One electric typewriter.]

[(16)] (15) A Telephone or telephones for the exclusive use...in the office.

[(17)] (16) A telephone answering machine.

[(18)] (17) A Fax machine.

(5/02) **Revise** Section 104.02.03 (a), Maintenance of Traffic (last paragraph), Page 164:

...the superintendent **and/or [shall be]** the traffic manager for the project **[and he]** shall meet all requirements of traffic manager for this section.

(12/1/00) **Replace** all of SECTION 107, Construction Stakeout, page 193 and 194 with the following:

SECTION 107 – CONSTRUCTION STAKEOUT

107.01 DESCRIPTION. *This work shall consist of furnishing, placing and maintaining construction layout stakes as specified in the Contract Documents or as directed by the Engineer by either Method One or Method Two.*

107.01.01 METHOD ONE. *The Contractor shall, as part of the construction stakeout operation, before any clearing operation commences, demarcate any wetlands and the limit of clearing throughout the entire project as shown in the Contract Documents and labeled as Limit of Clearing or Wetlands to the satisfaction of the Engineer.*

Where limits of clearing are not shown in the Contract Documents, the limit of clearing will be the top of cut, toe of slope or limit of ditch excavation.

107.02 MATERIALS.

107.02.01 METHOD ONE. The material for flagging the clearing limits shall be a 3 in. international orange vinyl material with "CLEARING LIMIT" printed on it with 2 in. letters. The material for flagging wetlands shall be the Administration's standard 1-1/2 in. pink and white striped vinyl flagging with "WETLAND" printed on it with blue letters.

107.02.02 METHOD TWO. Not applicable.

107.03 CONSTRUCTION.

107.03.01 METHOD ONE:

107.03.01.01 Line and Grade. The Engineer will provide the Contractor the following:

(a) Roadway and Utility Stakeout.

- (1) A staked center line of the roadway or base line for the utility with the maximum spacing of stations (stakes, nails, crosses, etc.) of 100 ft.**
- (2) Establish appropriately spaced benchmarks and the necessary references including all points of curvature (P.C.), and points of tangency (P.T.) for the preservation and control of the centerline.**

Two sets of prints of the cross sections shall be furnished and the cross sections will be used as guides only. Dimensions or elevations scaled from the cross sections are not sufficiently precise for use in the construction.

(b) Structure Stakeout.

- (1) A staked out centerline or working line, whichever applies, with stations not over 100 ft apart and extending at least 100 ft beyond ends of the structure.**
- (2) When the structure is on a curve, the Engineer will furnish a staked out center line or working line, whichever applies, consisting of stations not over 100 ft apart and including the P.C., P.T., and at least one point on the tangents beyond each end of the curve.**
- (3) At least two benchmarks, one on each end of the structure, will be established by the Engineer.**

107.03.01.02 Equipment and Personnel. The Contractor shall use competent personnel and state of the art equipment for all engineering work required to set and maintain the elevations and dimensions as specified in the Contract Documents.

107.03.01.03 Control Markers. *The Contractor shall exercise care in the preservation of stakes and bench marks set by the Engineer and shall reestablish them at no additional cost to the Administration when any are damaged or destroyed.*

107.03.01.04 Control Stakes. *For roadways as specified in 107.03.01.01, the Contractor shall furnish, set and preserve stakes at each station along each side of the project on the right-of-way or easement line, whichever is furthest from the center line of construction. Where only part of an ultimate dual highway is to be constructed, the stakes on the side of the future improvement shall be set 10 ft beyond the construction limits. On each of these stakes shall be marked its offset distance from the center line and its top elevation or the cut or fill to the profile grade line. Additional stakes as needed for horizontal and vertical controls necessary for the correct layout of the work shall be set by the Contractor.*

107.03.01.05 Layout. *For structures as specified in 107.03.01.01, the Contractor shall proceed with his layout work. However, before any actual construction begins, the Contractor shall rerun the Engineer's lines and grades to check same and then establish all center line or working line intersections with the center line or center of bearing of all piers, bents and abutments. From these field layouts, the Contractor shall check the proposed span lengths by electronic distance measurement or chaining. When chaining is used, the measurements shall be compensated for temperature, sag, and horizontal alignment. The Contractor shall also check the location of the structure to affirm its correct location with relation to existing structures, roads and existing conditions that are to remain in their original positions. If any discrepancies are found, the Contractor shall notify the Engineer at once in writing, otherwise, it will be assumed that all planned dimensions, grades and field measurements are correct. All lines established on the ground shall be preserved or referenced, marked, and kept available at all times.*

The Contractor shall establish the field elevations for all bridge seats and assume responsibility for finishing to proper grade. If any steel beams or girders are incorporated in the project, the Contractor shall run elevations over the tops of the beams or girders after they are in place, before any forms are attached to them, to determine the deflection of each member. This information shall then be applied to the deflection diagram to determine the corrected elevation of bottom slab forms and screed supports. After the Contractor has assembled this information, it will be checked by the Engineer before final adjustments are made and the placing of any concrete in said forms.

107.03.01.06 Utilities. *The Contractor shall furnish to the utility companies or agencies working within the limits of the project, promptly upon request, reference to control points, alignment and grade data, so that they may properly locate and coordinate their work and improvements in relation to this project.*

Intersection Utility Stakeout. *The Contractor shall notify the appropriate agencies listed below within a minimum of 72 hours (excluding weekends and holidays) prior to the Contractor's anticipated beginning of any underground work.*

- (a)** *Request a MISS UTILITY stakeout and possess a valid MISS UTILITY clearance ticket number for any underground work.*
- (b)** *Contact all utilities within the limits of the project who are not a member of MISS UTILITY and obtain a stakeout of their respective facilities.*
- (c)** *Request the Traffic Engineering Division to stakeout Administration maintained traffic signal facilities.*
- (d)** *Request the State Highway Administration's District Utility Engineer to stakeout their lighting facilities should the proposed work impact a State roadway.*

The Contractor shall stakeout the proposed construction as indicated in the Contract Documents and allow the Engineer to verify location of the proposed facilities.

107.03.01.07 Right-of-Way and Easement Lines. *The Contractor shall define only right-of-way and easement lines of the project for adjacent property owners, promptly upon request.*

107.03.01.08 Subgrade, Subbase and Base Controls. *The Contractor shall furnish for subgrade, subbase and base courses, string line and grade with fixed controls having a maximum longitudinal and transverse spacing of 25 ft.*

The Contractor shall place along each form line for cement concrete pavement line and grade with fixed controls not to exceed 25 ft.

107.03.01.09 Flagging. *The flagging shall be placed continuously through wetland areas. In areas where trees are not to be disturbed, the Contractor shall individually flag those trees in a line along the clearing limits that are not to be moved or destroyed. If the wetland flagging has been destroyed and the Engineer determines that it is still required, the Contractor shall reflag the area.*

If the Contractor does not replace the destroyed flagging within 48 hours after notification by the Engineer that replacement flagging is needed, the Engineer may proceed to have the area reflagged. The cost of the reflagging by the Engineer will be charged to the Contractor and deducted from any monies due under the Contract.

At the completion of construction, the Contractor shall remove all flagging.

107.03.02 METHOD TWO:

(1) The Engineer shall furnish and set construction stakes establishing lines, grades, and measurements required to be furnished for the contracted work under these Specifications for roadway (highway) and utility work. For all structure work, including bridges and buildings, the Engineer shall furnish the centerline stakeout and the benchmark for reference points, with the balance of the grades and measurements to be furnished by the Contractor. The Contractor shall provide and have available to the project an adequate engineering staff which is competent and qualified to set all lines and grades needed to construct bridges and buildings.

(2) Only those benchmarks shown on the drawings shall be used for construction. The Contractor shall furnish the assistance for their preservation after being set. The Contractor shall, however, be held responsible for their preservation. If, in the opinion of the Engineer, the benchmarks are willfully or carelessly disturbed or destroyed by the Contractor or his employees, the entire cost of replacing them shall be charged against the Contractor and the cost shall be deducted from the Contractor's final payment.

(3) Where electronic alignment control devices are used, the Contractor shall verify the alignment by conventional methods at intervals of 100 ft for lines 200 ft long between structures, or at changes in alignment when the structure is on a curve, and at the midpoint of lines under 200 ft long as defined above.

(4) For all Developer Projects the term "Engineer" in paragraph (a) shall be the Developer's Engineer as the term applies to construction stakeout.) For all Developer Projects the Engineer shall submit a copy of the stakeout grade sheets to the Division of Construction Contracts Administrations. All developer stakeout work shall be done under the supervision of a Professional Land Surveyor registered in the State of Maryland.

(5) Intersection Utility Stakeout. The Contractor shall notify the appropriate agencies listed below within a minimum of 72 hours (excluding weekends and holidays) prior to the Contractor's anticipated beginning of any underground work.

- (a) Request a MISS UTILITY stakeout and possess a valid MISS UTILITY clearance ticket number for any underground work.**
- (b) Contact all utilities within the limits of the project who are not a member of MISS UTILITY and obtain a stakeout of their respective facilities.**
- (c) Request the Traffic Engineering Division to stakeout Administration maintained traffic signal facilities.**

(d) Request the State Highway Administration's District Utility Engineer to stakeout their lighting facilities should the proposed work impact a State roadway.

The Contractor shall stakeout the proposed construction as indicated in the Contract Documents and allow the Engineer to verify location of the proposed facilities.

107.04 MEASUREMENT AND PAYMENT.

107.04.01 METHOD ONE. Construction Stakeout will not be measured but will be paid for at the Contract lump sum price. The payment will be full compensation for furnishing, placing and maintaining construction layout stakes, flagging of clearing and wetlands, and for all material, labor, equipment, tools, and incidentals necessary to complete the work. Payment of the Contract lump sum price will be prorated and paid in equal amounts on each monthly estimate. The number of months used for prorating will be the number estimated to complete the work.

107.04.02 METHOD TWO. All work related to Construction Stakeout will not be measured but the cost will be incidental to other items provided for in this contract.

(7/06) **REVISE Section 109:** Effective January 1, 2003 new fixed price contingent values are as follows:

Fixed Price Contingent Items

Code	Description	Unit of	Fixed
120620	MAINTENANCE OF TRAFFIC: TEMPORARY TRAFFIC SIGNS	SF	\$ 18.00
203035	GRADING: BORROW – TEST PIT EXCAVATION WITHIN COUNTY ROADS	CY	\$120.00
800010	UTILITIES: TEST PIT EXCAVATION IN COUNTY ROADS		
203030	GRADING: BORROW – TEST PIT EXCAVATION OUTSIDE COUNTY ROADWAYS	CY	\$ 65.00
800011	UTILITIES: TEST PIT EXCAVATION OUTSIDE COUNTY ROADWAYS		
202040	GRADING: BORROW WITH ONSITE DISPOSAL OF UNSUITABLE MATERIAL	CY	\$ 37.00
202045	GRADING: BORROW WITH PROPER OFFSITE DISPOSAL OF UNSUITABLE MATERIAL	CY	\$ 50.00
800020	UTILITIES: CLASS 3 EXCAVATION W/SELECT BACKFILL & PROPER OFFSITE DISPOSAL	CY	\$ 56.00

800021	UTILITIES: CLASS 3 EXCAVATION W/SELECT BACKFILL & PROPER ONSITE DISPOSAL AT OWNER DESIGNATED LOCATION	CY	\$ 47.00
800040	UTILITIES: MIX NO. 1 CONCRETE	CY	\$300.00

(5/02) **Revise** Section 201.03.04 (c), Rock Excavation, paragraph 3, Page 204:

...The Contractor shall drill holes along the slope line having a diameter of not less than 2[°] ½ in. (65 mm) nor more than 3 in. (75mm) drilled...

(12/1/00) **Revise** 203.01.02, NOTICE TO CONTRACTOR – BORROW PITS, Page 212:

[If the Contractor elects, a borrow pit may be established on privately owned property and the Administration may grant an “Exemption for a Surface Mining Permit” normally issued by the Water Resources Administration (WRA). Before a permit can be granted, the Contractor shall submit to the Administration written proof that all local permits and/or approvals have been secured for the borrow pits.

An exemption under Option 3 will require approval of an excavation and reclamation plan along with the drainage patterns and methods of attaining satisfactory drainage and soil conservation as the work progresses. The plan shall also provide for surface restoration suitable for the proposed subsequent land use after reclamation is completed and the proposed method of accomplishment.]

The Contractor will be responsible for obtaining all necessary permits. The Contractor shall submit to the Engineer written proof that all permits and/or approvals have been secured for the borrow pits. All shall be in accordance with Baltimore County’s floodplain laws and regulations.

(12/1/00) **Delete** from 203.01.03, Borrow Pits Within 100 Year Floodplain, Page 212:

[Borrow pits located within the 100 year floodplain of any waterway having a drainage area 400 acres (162 ha) or more (100 acres [40 ha] for Class II and IV trout streams) shall also have the Department of Natural resources (DRN) approval. Borrow pit operations that impact either tidal or nontidal wetlands shall also be approved by DNR. Copies of the U.S. Army Corps of Engineers 404 permit and/or State wetlands permit or license will be provided before an exemption will be granted.

The determination as to the applicability of Waterway Construction and/or wetland permits shall be the responsibility of the Contractor, not the Administration.

If the pit is in operation and the Administration discovers that the Contractor is not in compliance with these regulations the administration will take the appropriate action required, including work shutdown, until the Contractor is in compliance.]

(12/1/00) **Add** to SECTION 204.04, Embankment and Subgrade, page 219:

Compaction by means of mechanical tampers or vibratory compactors will not be measured nor paid for except when an item for Tamped Fill is included in the Contract Documents.

These Provisions for Measurement and Payment do not apply to UA and RA contracts.

(12/1/00) **Revise** SECTION 301.03, Class 3 Excavation for Incidental Construction, Page 226:

The area to **be** excavated shall be of the size, depth and location as **[indicated in the Standard Details, unless otherwise]** authorized by the engineer. Backfill shall conform to Section 302.

(12/1/00) **Revise** SECTION 301.04, Class 3 Excavation for Incidental Construction, Page 226:

Class 3 Excavation for Incidental Construction shall be measured and paid for at the Contract unit price per cubic yard **of Class 3 Excavation and Selected Backfill with Onsite Disposal of Unsuitable Material or as Class 3 Excavation and Selected Backfill with Proper Offsite Disposal of Unsuitable Material**. The payment shall be full compensation for all material, labor, equipment, tools, and incidentals necessary to complete the work.

[Backfill: Backfill will be measured and paid for as specified in 302.04.]

(5/02) **Revise** Section 303.03.03, Installation, Page 228:

303.03.03 Installation. Pipes shall be laid with hubs upgrade. A single lay hole through the shell of the pipe will be permitted with an approved lifting device. After installation, the lay hole shall be filled [.] **completely using expandable insulating foam or another acceptable watertight seal. Excess material shall be removed from the interior of the pipe.**

(12/1/00) **Replace** SECTION 303.03.04 Joints, Page 228:

Delete 303.03.04 and substitute the following:

303.03.04 Joints. All storm drain pipe installed in Baltimore County shall have joints that are soil-tight, meaning that the joint shall not allow intrusion of soil particles of any size into the pipe through any joint. The preferred method of accomplishing soil-tight joints is use of a pipe with a joint design that has previously been accepted by the County as soil-tight. This would include low head pressure pipe (ASTM C-361), metal pipe joints designed in accordance with AASHTO Standard Specifications for Highways and Bridges Section 26.4.2, or any other pipe considered watertight by these Standard Specifications.

Per AASHTO Standard Specifications for Highways and Bridges Section 26.4.2.4(e), joints with the ability to pass a 2-psi hydrostatic test without leakage will be considered soil-tight.

As alternates to the use of approved soil-tight joint designs, soil-tightness may be accomplished by one or more of the following methods:

- *Selected backfill around pipe of a non-erodible nature, including granular soil with grain sizes equivalent to coarse sand, small gravel or larger (ratio of soil D_{85} to maximum size of any joint opening > 0.2 for uniform sand or 0.3 for medium to fine sand), cohesive clay soils ($P.I. > 12$) or flowable fill. This selected backfill must fill the entire trench width from the bottom of the excavation to a minimum of 12 inches above the crown of pipe, with specified compaction.*

OR

- *Asphalt sealers (AASHTO M198) or resilient grouts with prior approval for use in Baltimore County as pipe sealers that penetrate the entire joint and fill all voids in the pipe joints, used in accordance with manufacturer's recommendations.*

OR

- *Wrapping the circumference of the pipe at the joint with a double layer of Class C geotextile overlapping the joint on both sides by 18 inches minimum. The geotextile selected shall be suitable for filtering out fine sands and silts.*

OR

- *Application of interior or exterior sealing bands or pipe gaskets with prior approval for use in Baltimore County and used in accordance with manufacturer's recommendations.*

Mortared concrete pipe joints shall NOT be considered soil-tight without additional measures as described above. The Engineer shall approve the soil-tightness and suitability for use of each installed pipe joint. Costs of all gaskets, filter fabric, joint sealing or sealing bands shall be included in the cost of the pipe.

(5/02) **Revise** Section 303.03.04, Joints, Page 228:

Section 303.03.04 Joints. **All storm drainpipe installed in Baltimore County shall have joints that are soil-tight, meaning that the joint shall not allow intrusion of soil particles of any size into the pipe through any joint. The preferred method of accomplishing soil-tight joints is use of a pipe with a joint design that has previously been accepted by the County as soil-tight. [This would] Acceptable pipe joints include ASTM C-76 concrete pipe with joints meeting ASTM C-443 Specifications, low head concrete pressure pipe (ASTM C-361) for applications in pond embankments, [metal] pipe joints designed in accordance with AASHTO Standard Specifications for Highways and Bridges Section 26.4.2, or any other pipe [considered] joints accepted as watertight by these Standard Specifications.**

(1/07) **Add Section 303.03.10, Television Inspection of Storm Drains,**

Page 229, requiring inspection of interiors of new and rehabilitated storm drains, including structures, and culverts 12" or larger in diameter with closed circuit TV

cameras:

(a) TV Inspection.

(1) DESCRIPTION.

(a) Reference. All applicable requirements of other portions of the Contract Documents apply to the Work of this Section.

(b) Description of Work. The work covered by this section consists of providing all labor, equipment, material and supplies and performing all operations required to conduct the internal closed-circuit television inspection and recording of all sewer and storm drain pipe.

(c) Submittals.

- DVDs for each pipeline project inspected.
- TV Inspection Log: Each TV Inspection Log shall be submitted to the County, accompanied by the respective DVD.
- PACP Operator Certification: Prior to initiating CCTV Inspection work associated with condition assessment assignments, the Contractor shall present the County with copies of PACP certifications of operators that will be performing the work.

(d) Definitions.

- Pre-Installation TV Inspection. Pre-installation TV is a video inspection by the Contractor of storm drains specified for rehabilitation to confirm cleaning, location of connections, and constructability of the rehabilitation according to the Specifications.
- Post-Installation TV Inspection. Post-installation TV is a video inspection to determine that rehabilitation, replacement or new construction of a storm drain has been completed according to the Specifications.
- TV Inspection Log. Information collected and recorded by each TV operator for any TV inspection that is submitted to the County.
- PACP: Pipeline Assessment and Certification Program. A CCTV inspection standardization certification and observation coding system sponsored by the National Association of Sewer Service Companies (NASSCO).

(2) MATERIALS.

(a) Closed Circuit Television Equipment. Select and use closed-circuit television equipment that will produce a color video.

(b) Pipe Inspection Camera. Camera shall produce a video using a pan-and-tilt, radial viewing, pipe inspection camera that pans ± 275 degrees

and rotates 360 degrees. The television camera used for the inspection shall be specifically designed and constructed for such inspection. The camera shall be operative in 100% humidity conditions. All attributes (distance, etc.) must be coded in accordance with accepted P.A.C.P. standards. Use a camera with an accurate footage counter that displays on the monitor the exact distance of the camera (to the nearest tenth of a foot) from the centerline of the starting manhole. Use a camera with camera height adjustment so that the camera lens is always centered at one-half the inside diameter for circular pipe and two-thirds the rise (height) for elliptical pipe. Lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the pipe. The video camera shall be capable of showing on the DVD the Owner name, Contractor name, date, line size and material, line identification (Owner's manhole numbers at both ends) and ongoing footage counter. The camera, television monitor, and other components of the video system shall be capable of producing picture quality to the satisfaction of the County; if picture quality is not satisfactory, the TV inspection will not be accepted. Camera shall remain properly focused at all times during recording. No payment will be made for an unsatisfactory inspection recording.

(c) Data Media.

- All television inspections shall be provided on DVD. All DVDs shall be submitted to the County and will become the property of the County.
- DVDs shall be equipped with an appropriate software viewer, to be supplied by the Contractor at no additional cost to the County. The DVD shall be capable of being downloaded to CASSWORKS. CASSWORKS is currently capable of accepting POSN and WINCAM software. All conversion required to accomplish the download to CASSWORKS-compatible formats shall be done by the Contractor at his expense.
- Two labels are required. One label shall be placed on the DVD and the other on the DVD case. Permanently label each DVD with the following information:

On DVD

County Name: _____	Contractor's Name: _____	Project Name _____
Inspection Type: [] Survey	[] Pre-Installation	[] Post-Installation
DVD No.: _____	Date Televised: _____	Contract No.: _____
Basin No: _____	Drawing No. _____	

DVD Case

County Name: _____		Contractor's Name: _____		Project Name _____	
Inspection Type: <input type="checkbox"/> Survey		<input type="checkbox"/> Pre-Installation		<input type="checkbox"/> Post-Installation	
DVD No.: _____		Date Televised: _____		Date Submitted: _____	
Basin No: _____		Contract No.: _____		Dwg.No.: _____	
Manhole No. From	Manhole No. To	Pipe Diameter	Pipe Length	Street	
_____	_____	_____	_____		
_____	_____	_____	_____		
_____	_____	_____	_____		
_____	_____	_____	_____		

(3) CONSTRUCTION REQUIREMENTS.

(a) Pre-Installation Inspection (Pipe Rehabilitation Only)

1) Procedure.

- Perform pre-installation TV inspection immediately after drain cleaning and before drain rehabilitation work. Prepare Television Inspection Logs. Maintain copies of DVDs and reports for reference by the County for the duration of the project.

- Prior to any repair work, the entire storm drain (from outfall to inlets) shall be televised, except as otherwise directed by the Engineer. The pre-installation inspection shall be used to determine whether the drain has been cleaned sufficiently; to confirm the location and nature of defects; and to confirm that the proposed method of repair is proper for the defects observed.

- The camera shall be moved through the line in either direction at a moderate rate, stopping when necessary to permit proper documentation of the drain's condition. In no case shall the television camera be pulled at a speed greater than 30 feet per minute. Manual winches, power winches, TV cable, and powered rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the drain condition shall be used to move the camera through the storm drain.

- If, during the inspection operation, the television camera will not pass through the entire section of drain, the Contractor shall set up his equipment so that the inspection can be performed from the opposite direction. If, again, the camera fails to pass through the entire pipe section, the inspection shall be considered incomplete until repair/adjustment is made allowing camera passage for completion of the TV inspection. If the section of drain is determined impassable, the Contractor shall request additional instructions from the Engineer. Improper cleaning is not acceptable as a reason for incomplete televising of a section of storm drain.

- When manually operated winches are used to pull the television camera through the drain, telephones or other suitable means of

communication shall be set up between the two manholes of the section being inspected to insure good communication between members of the crew.

- The importance of accurate distance measurements is emphasized. Measurements for location of defects shall be above ground by means of a meter device. Marking on the cable, or the like, which would require interpolation for depth of manhole, will not be allowed. Accuracy of the distance meter shall be checked by the use of a walking meter, roll-a-tape, or other suitable device. The meter device shall be accurate to within one-tenth of a foot.
- During the internal inspection the television camera shall be temporarily stopped at each defect along the line. The Contractor shall record the nature and location of the defect. Where defects are also active infiltration sources, the infiltration shall be classified in terms of PACP coding. If soil/backfill has infiltrated into the pipe at a joint or elsewhere, the location and severity shall be noted.
- Camera operator shall slowly pan and tilt at beginning and ending manholes/inlets, each pipe connection, each joint, at visible defects and when pipe material transitions from one material to another. Zoom in on defects and connections if the camera will allow this.
- TV inspection DVDs shall be continuous for pipe segments between manholes. Do not leave gaps in the recording of a segment between manholes, do not repeat pipe segment inspections on the same or subsequent DVDs, do not show incomplete pipe inspections or overlap a pipe segment inspection between 2 DVDs.

2) Flow Control.

- Televising the pipeline shall be done only during periods when minimal base flow (or no flow) is present.
- The contractor shall remove all equipment from storm drains and replace manhole covers when rainfall sufficient to raise the level of water in the drain is imminent.

3) Documentation of Television Inspection.

- The Television Inspection shall be documented using a computerized datalogger and reporting system.
- Television Inspection Logs: Printed location records shall be kept by the Contractor and shall clearly show the location of each defect observed during inspection in relation to an adjacent manhole. In addition, locations of connections, unusual conditions, roots, cross connections with other utilities, broken or damaged pipe, presence of scale and corrosion on metal pipe,

and other discernible features shall be recorded. A copy of *these* records shall be supplied to the County.

- Digital Photographs: Noted defects and connections shall be documented as digital files and hard copy print-outs. Photo logs shall accompany each photo submitted.
- DVD Recordings: The purpose of DVD recording shall be to supply a visual and audio record of problem areas of the drains that may be replayed. DVD recordings shall include an audio track recorded by the inspection technician during the actual inspection work describing the parameters of the line being inspected (i.e. location, depth, diameter, pipe material), as well as describing connections, defects and unusual conditions observed during the inspection. DVD playback shall be at the same speed that it was recorded. Slow motion or stop-motion playback features may be supplied at the option of the Contractor. Once recorded, the DVDs shall be labeled and become the property of the County. The Contractor shall have all DVDs and necessary playback equipment readily accessible for review by the County during the project.
- All DVDs and TV inspection records associated with a capital project shall be forwarded to Construction Contracts Administration Division for review. After completion and final approval of the project, the DVDs and other inspection records shall be forwarded to the Storm Drain and Sewer Maintenance Division of the Bureau of Utilities for Cassworks entry and for permanent storage for future reference. DVDs done for the Bureau of Utilities shall be forwarded to that agency at completion of work.

(b) Post - Installation Inspection.

1) Procedure.

- Post-Installation TV inspection shall not be performed until all work, including inlet and manhole restoration, is complete on a section of drain. Manhole work, including benches, inverters and pipe penetrations into manhole, shall be complete prior to post-installation TV work. The post-installation TV inspection DVDs shall be submitted to the County Construction Contracts Administration Division prior to acceptance of the work by the Department of Public Works.
- The post-installation TV inspection shall be completed by the Contractor in the presence of the County. The post-installation TV inspection shall be completed to confirm completion of rehabilitation and to verify that the rehabilitation work conforms to the requirements of the Specifications. Provide a color DVD showing the completed work, including the condition of restored connections. Prepare and submit Television Inspection Logs

providing location of connections along with location of any discrepancies.

- For post-installation TV inspection, exercise the full capabilities of the camera equipment to document the completion of the rehabilitation and replacement work and the conformance of the work to the Specifications. Provide a full 360 degree view of pipe, joints and connections.
- Methodology shall be in accordance with Section 303.03.10a (3)(a) 1) Procedure (Pre-Installation Inspection).

2) **Flow Control and Documentation of Television Inspection** shall be conducted as specified in paragraph 303.03.10a (3)(a) 2) and 3) for pre-installation inspection.

(4) MEASUREMENT AND PAYMENT.

Television Inspection for New or Rehabilitated Pipes. This item will not be measured.

Basis of Payment. Payment for television inspection will be included in the prices bid for items in the proposal and as defined in these Specifications.

(12/1/00) **Add** to Section 303, Pipe Culverts, Page 229:

303.03.10 Connecting Existing Property Drains. An item may be provided to drain abutting properties, swales, roofs, etc. Connections are not necessarily shown on the Plans, but shall be constructed where, if, and as directed by the Engineer.

It is County policy that roof leaders may be connected to the proposed storm drains, if directed by the Engineer. Basement drains may be connected, if desired by the Engineer, provided that the property owner has previously obtained written permission from the County to do so.

(12/1/00) **Revise** Section 303.04.03, Pipe Culverts, Page 230:

303.04.03 Additional excavation required below the planned elevation will be measured and paid for as specified in Section 301. For bedding in rock subgrade (Section 303.03.02), excavation and refill to the 6-inch depth will be paid for as a Class 3 Excavation and Selected Backfill (by the template method) ***with Onsite or Proper Offsite Disposal of Unsuitable Material, as applicable.***

(12/1/00) **Add** to Section 303.04, Pipe Culverts, Page 231:

303.04.10 Connection of property drains encountered within a trench excavated for construction of a storm drain pipe or structure shall be paid for as part of the price bid per linear foot for that pipe complete in place, or shall be paid for as part of the price bid per "each" for the minimum depth of that drain structure complete in place.

The cost of connecting existing roof leaders or basement drain lines into the proposed storm drains will be incidental to the Contract prices for the storm drains. If it is necessary to run connecting lengths of pipe for the connection, payment will be made under the appropriate bid items included in the proposal.

(12/1/00) **Delete** Section 304, Structural Plate Pipe and Structural Plate Pipe Arch Culverts, Pages 231 through 235:

Delete Section 304 and replace with **Reserved**.

(12/1/00) **Revise** Section 305.03.02 Castings, Page 236:

Frames for grates and covers for inlets and manholes, **[unless shown otherwise on the Standard Details,]** shall be set in full beds of mortar and rigidly secured in place to proper grade and alignment as specified in the Contract Documents, **unless otherwise directed by the Engineer or shown otherwise in the Construction Documents.**

(5/02) **Revise** Section 305.03.05, Drainage Structures, Page 236:

305.03.05 Drainage Structures. Inlets and manholes shall contain two 6 in. (150mm) minimum diameter underdrain stubs for future connections of underdrains or for erosion control. Precast drainage structures may substitute two precast knockouts as shown on the Standard Details for the underdrain stubs. The drainage structures shall be backfilled with CR-6 for a width of 1.5 ft (0.4 m) outside of the structure and extend from the bottom of the structure to the subgrade. Stone **around underdrains [backfill]** and knockouts for underdrain are not required for precast manholes unless otherwise shown on the Plans or as directed by the Engineer.

(12/1/00) **Revise** Section 305.03.06, Precast Drainage Structures, Page 237:

Certification from the manufacture for each shipment of precast units shall be required. Each unit shall be marked showing station location and designation, the date of manufacture, the name or trademark of the manufacturer (this information shall be noted on the unit, near the top inside), and include a certification which shall contain a copy of the actual test results indicating that the **[inlet] precast unit** conforms to the contract document.

(5/02) **Revise** Section 305.03.06, Precast Drainage Structures, (second paragraph) Page 237:

Certification from the manufacturer for each shipment of precast units shall be required. Each unit shall be marked **by indentation or with waterproof paint** showing station location, **[and] Specification designation or intended use**, the date of manufacture, the name or trademark of the manufacturer (this information shall be noted on the unit, near the top inside). **[and]** Each unit shall include a certification which shall contain a copy of the actual test results indicating that the **[inlet]** unit conforms to the Contract Documents. *Absence of test date is basis for rejection of items and revocation of plant certification.*

(12/1/00) **Revise** Section 308.04.07, Page 245:

308.04.07 Geotextile Class F for Super Silt Fence per linear foot.

(12/1/00) **Revise** Section 308.04.12, Section 308.04.16, Section 308.04.17, Section 308.04.18 and Section 308.04.19, Page 246:

308.04.12 Stabilized Construction Entrance and Rehabilitate Stabilized Construction Entrance per [Ton] **Square Yard or, if specified in the Contract Documents, per Each.**

308.04.16 Seeding [**Roadside Areas**] as specified in 705.04.01.

308.04.17 Seeding [**Median**] **Flat** Areas as specified in 705.04.02.

308.04.18 Overseeding [**Roadside Areas**] as specified in 705.04.05.

308.04.19 Overseeding [**Median**] **Flat** Areas as specified in 705.04.06.

(12/1/00) **Revise** Section 310.02, Riprap Ditches, Materials, Page 248:

Stone	901.02 and 901.03
Geotextile, Class C as specified	921.09

(12/1/00) **Revise** Section 312.02, Gabions, Materials, Page 252:

Stone	901.05
Wire for Gabions	906.01
Geotextile, Class C as specified	921.09

(12/1/00) **Revise** Section 408.03.20, Inspection of Fabricated Metal Structures, Page 296:

408.03.20 Inspection of Fabricated Metal Structures. Fabricated metal structures shall conform to AASHTO/AWS Bridge Welding Code D1.5. Quality control inspection shall be the responsibility of the Contractor. The Contractor shall have on file with the [**Baltimore County Test Lab**] **Engineer** a current approved quality control plan prior to receiving source approval. This plan shall specify the frequency, method of inspection and provide for documentation. The inspection frequency shall be at least the minimum ...

(7/06) **ADD** to Section 414.03.09 Curing Methods, Page 369:

414.03.09g Water Based Cure and Seal Compounds *Water Based cure and seal compounds shall be applied in conformance with manufacturer's recommendations or as directed by the engineer. The material shall be applied by sprayer and shall be thoroughly agitated before and during use*

(7/06) **Revise** Section 501.03.14, Aggregate Base Courses, paragraph two, page 440.

On all development projects, the base course and concrete curb and gutter shall be constructed and then maintained for a period of at least 60 days unless otherwise noted on the Plans or directed by the Engineer. After the maintenance period has ended, the base course shall be cleaned of all foreign material and shall be approved by the engineer before the surface course is placed. ***The 60-day maintenance period may be waived by the Director of Public Works by means of the procedure specified in the letter dated October 26, 2005 from the Director of Public Works to the Homebuilders Association of Maryland. Copies of this letter are available from the Division of Construction Contracts Administration. The scope of the work shall include removal of any contaminated stone and regrading of the stone base at the proper grade.***

(12/1/00) **Revise** Section 501.04.05, Aggregate Base Courses, page 441:

[The cost of cleaning the base course will be paid for at the contract unit price for this item shown in the Proposal.] ***On development projects, measurement for this item will be by the square yard of area cleaned. Any additional stone required to reshape the stone base prior to paving will be paid for under the item for Class 1-A excavation and refill using aggregate base course. This does not apply to UA and RA contracts. On capital projects there will be no measurement or payment for this item.***

(12/1/00) **Replace** 504.02, Hot Mix Asphalt Pavement, Materials, page 450:

Delete in its entirety and insert the following:

504.02 MATERIALS.

<i>Performance Graded Asphalt Binders</i>	904.02
<i>Tack Coat</i>	904.03
<i>Hot Mix Asphalt and Superpave Mixes</i>	904.04
<i>Crack Filler</i>	911.01
<i>Production Plant</i>	915

(12/1/00) **Revise** Section 504.03.03 B, Hot Mix Asphalt Pavement, page 453:

This item will only be used to correct irregularities of paving due to ***[an approved] a lapse of time approved by the Engineer*** between placing the two paving courses. The first course of bituminous base will be checked to determine its correctness immediately after placement to assure its is within specified tolerances. Any needed corrections will be made at that time but will not be part of this item.

Upon resuming the paving operation, grades will be checked to assure the first course surface meets the following tolerances immediately prior to placing surface paving. The bituminous concrete wedge/level will be placed where the first course of bituminous paving is more than ¼ in. below the proposed grade or where there are deviations of more than 3/8 in. ***in*** 10 ft. to the plane of the paving. Grades will be rechecked after wedge/level operations. No payment will

be made as part of the Bituminous Concrete Wedge/Level item for material **[paced] placed** beyond the upper limits of the first course.

(5/02) **Revise** Section 504.03.03 B & C, Pages 452 & 453:

504.03.03 [Foundation] Preparation for Paving

B. Development Projects. On development projects when the plans...

C. [Foundation Preparation.] Utilities. To protect against accidental clogging...

(12/1/00) **Add** the following to Section 504.03.03, Hot Mix Asphalt Pavement, page 454:

D. References to proposal item and payment procedures do not apply to UA and RA contracts; however, all work shall be done as described in this section without regard to type of contract used.

(7/06) **ADD** following paragraph to Section 504.03.06, Compaction, page 455:

Section 504.03.06 Compaction –

Where patches in surface course are made per 504.03.15 (see below) payment for a 1/10 lane mile segment of surface pavement shall be made at 85% of the unit cost bid for hot mix asphalt surface. This shall be applied for each repair done in each individual lane, in a 1/10 mile area.

(7/06) **ADD** following Section to 504.03, Hot Mix Asphalt Paving, page 457:

Section 504.03.15 Patches in Surface Course

- a. If after the placement of the surface course of bituminous concrete the contractor must make repairs to adjust structures, trench failures, and settlements, repair pulls or tears or areas of poor workmanship, those repairs shall be made at the Contractor's expense and to the satisfaction of the Engineer.
- b. Unless otherwise directed by the Engineer, those repairs will require the replacement of the surface bituminous concrete on the full width of the lane or lanes involved (paving joint to paving joint) and a minimum length of the same dimension. The actual dimensions will be determined on a case-by-case basis. However, in general the length shall extend at least one-half a lane width beyond the limit of the failure(s) or adjustment(s) and the full width of the lane(s) involved.

(12/1/00) **Revise** Section 504.04, Hot Mix Asphalt Pavement, page 458:

Protection of sanitary sewer manholes shall not be a separate pay item but will be included in the cost of other bid items.

These provisions for Measurement and Payment do not apply to UA and RA contracts.

(12/1/00) **Revise** Section 505.04, Hot Mix Asphalt Patches, page 465:

505.04.01 Hot Mix Asphalt Patches will be measured and paid for at the Contract unit price per square yard, ***or if specified in the Contract Documents, at the Contract unit price per ton.***

[505.04.03 Hot Mix Asphalt Patches will be measured and paid for at the Contract unit price per ton.]

(7/06) **ADD** to Section 520.03.12(a) Liquid Membrane Forming Compounds, Page 481:

**520.03.12a Liquid Membrane Forming Compound and
Water Based Cure and Seal Compounds**

(12/1/00) **Revise** Section 612.04.03, Metal Traffic Barriers, Page 517:

612.04.03 Repairing Traffic Barrier End Treatments to their original configuration will be measured and paid for at the Contract unit price per each spare parts package as specified in the Contract Documents.

Spare parts packages not used for repairs will be delivered to the **[district shop] Bureau of Highways and Equipment Maintenance** as directed by the Engineer at which time they will become the property of the Administration. Measurement and payment will conform to GP-4.07.

(12/1/00) **Revise** Section 613.04, Special Traffic Barrier W Beam End Treatment, Page 520:

Spare parts packages not used will be paid for in conformance with TC-7.03. These packages shall be delivered to the **[SHA District shop] Bureau of Highways and Equipment Maintenance** as directed by the Engineer and become the property of the Administration.

(7/06) **CHANGE** Section 704.04.02 Temporary Straw Mulching per [TON] SY, page 532.

(5/02) **Revise** Section 705.03.01 (a) Preparing Soil, Page 534:

... On an adjacent to residential properties, the size of the loose stone and other foreign material shall not be larger than **[1°] 1 ½ in.** (38 mm).

(5/02) **Revise** Section 705.03.01 (g)(2), Securing Straw or Hay Mulch, Page 538:

(2) Tracking Method. The mulch shall be incorporated into the soil with track type equipment having steel cleats with a minimum depth of **[1°] 1 ½ in.** (40 mm)...

(12/1/00) **Revise** Section 705.04, Turf Establishment, Pages 540 & 541:

705.04.01 Seeding [**Roadside Areas**] per square yard. Other seed such as leguminous and out of season seed will not be measured but the cost will be incidental to this item.

705.04.02 Seeding [**Median**] *Flat* Areas per square yard. Other seed such as leguminous and out of season seed will not be measured but the cost will be incidental to this item.

705.04.05 Overseeding [**Roadside Areas**] per pound.

705.04.06 Overseeding [**Median**] *Flat* Areas per pound.

(5/02) **Revise** Section 708.03.02, Sodding, Page 548:

Section 708.03.02 General. Sod shall be transported and installed without breaking, tearing or loss of soil. All sod shall be transplanted within 48 hours from the time it is harvested. ***Unless otherwise specified, sod shall be placed on 2 inches of topsoil.***

(5/02) **Revise** Section 708.04.03, Sodding, Page 550:

708.04.03 Topsoil. ***Topsoil shall be paid under item 702.04 or 703.04 as appropriate.***

(5/02) **Revise** Section 710.03.03 (b) **TABLE**, Page 557:

Shade Trees	[2°] 2 ½ in. (65 mm) H to [3°] 3 ½ in. (90 mm) C
Flowering Trees	6 ft (2 m) H to [2°] 2 ½ in. (63 mm) C

(5/02) **Revise** Section 801.03.05, Concrete Foundations - Backfill, Page 575:

... Backfill material shall be suitable material from the excavation or other sources conforming to section **[207] 204**.

(5/02) **Revise** Section 810.03.05, Identification Tags, Page 587:

...Each band shall be marked using [°] ¼ in. (6 mm) minimum lettering dies,...

(12/1/00) **Revise** Section 901 A (Chart), Pages 602 & 603:

Latest version of Table 901A is included at the end of this document.

(5/02) **Replace** **Table 901 A, AGGREGATE GRADING REQUIREMENTS**, Pages 602 & 603 with the revised **Table 901 A** found at the end of these Supplemental Specifications.

(7/06) **ADD** new Section 901.06, Recycled Concrete for Aggregate on Page 611:

901.06 RECYCLED CONCRETE FOR AGGREGATE.

901.06.01 Description. Recycled concrete of equivalent gradation may be used as a substitute for natural stone aggregate with the approval of the Engineer. Its use shall be limited to applications that will NOT be exposed to public view.

901.06.02 Materials. Recycled concrete shall meet gradation requirements for the aggregate as specified. The recycled aggregate shall be noted as RC-1, RC-6, RC-57, etc. where the gradation is equivalent to natural stone aggregate CR-1, CR-6, No. 57, etc. respectively.

Recycled concrete aggregate shall be free of contaminants including, but not limited to, paper, scrap wood, metal including rebar, soil, vegetation, organic content, excessive amount of brick, glass, plastic, petroleum derivatives and other trash. Recycled concrete aggregate shall meet the physical properties requirements of Table 901B for the equivalent gradation of the recycled concrete to be used.

The recycled concrete shall comply with all requirements for recycled materials referenced in TC6.09.

Material determined by the Engineer to be unsuitable shall be immediately removed from the site to a suitable rubble disposal area at no cost to the County.

901.06.03 Construction. Use of this material shall be limited to applications such as backfill that will NOT be exposed to public view upon completion of the project. Use of recycled concrete as riprap, in gabions, for other applications that are exposed to flow of surface or groundwater or for applications where settlement can expose recycled concrete to public view is forbidden.

Storage of quantities of this material in excess of the amounts necessary for immediate use on the project, as approved by the Engineer, is forbidden. Storage of any quantity of recycled concrete on sites that are residentially zoned shall not exceed a period of 24 hours between the time of delivery and the time of installation.

Compaction of this material shall be as specified for the borrow or backfill in which the recycled concrete aggregate is to be used.

901.06.04 Measurement and Payment. Recycled concrete shall be measured and paid for as part of the borrow or backfill item for which it is being used.

(7/06) **REVISE** Section 902.07.03 Liquid Membrane as shown, page 615:

902.07.03 Liquid Membrane and Water based Cure and Seal Compounds. Liquid membrane forming compounds *and water based cure and seal compounds* shall conform to AASHTO M148. *Cure and seal compounds must not have high gloss finish and must be approved by Baltimore County Division of Construction Contracts administration prior to use.*

(5/02) **Revise** Section 902.10.08, Testing, Page 623:

NOTE 1: For plain *or reinforced* cement concrete, mold **[three (3)] two (2) 28-day** cylinders per test **[and for reinforced concrete four (4) cylinders per test.]**

(7/06) **Replace** Section 904, Asphalt Cements and Hot Mix Asphalt, Pages 632 – 640:

DELETE IN ITS ENTIRETY AND SUBSTITUTE THE FOLLOWING:

**SECTION 904 — PERFORMANCE GRADED
ASPHALT BINDERS AND HOT MIX ASPHALT**

904.01 CERTIFICATION. The manufacturer and hauler shall furnish certifications as specified in TC-1.02 and the following:

The manufacturer shall also certify:

- (a) Date and time of loading.
- (b) Tank or blending system.
- (c) Identification of hauling unit.
- (d) Binder grade, temperature, and quantity of materials.
- (e) Complete certified analysis.
- (f) Lot number, if applicable.
- (g) Mixing and compaction temperatures when the binder is polymer modified.

The hauler shall also certify:

- (a) Identification of hauling unit.
- (b) Binder grade and source of last delivery.
- (c) The date of the last delivery using this hauling tank and volume of material remaining in the tank at the time of current loading.

904.02 PERFORMANCE GRADED ASPHALT BINDERS. Performance graded asphalt binders for mixes containing all virgin materials, recycled asphalt pavement materials, or roofing shingles from manufacturing waste shall conform to M 320, Table 1, for the specified performance grade. The asphalt binder recovered from the final plant mixed material will be considered Rolling Thin Film Oven (RTFO) material and shall conform to M 320, Table 1 for the specified performance grade.

The performance graded binder shall be pre-approved by the Administration. The Contractor shall submit a certificate of analysis showing conformance with the Performance Graded Binder Specification M 320 and the critical cracking temperature in conformance PP 42, Standard Practice for Determination of Low-Temperature Performance Grade (PG) of Asphalt Binder, for the binders specified in the Contract Documents.

The PG binder for HMA mixes shall be achieved by the use of Neat Asphalt with elastomer polymer modifications when needed.

904.03 EMULSIFIED ASPHALTS. Emulsified asphalts shall conform to M 140 or M 208 with the following exceptions:

- (a) Cement mixing tests are waived.
- (b) Grade SS-1 viscosity shall be 50 to 400 seconds at 77 F.
- (c) Maximum of 3.0 percent by volume of oil distillate.
- (d) The sieve test requirement for field samples shall be a maximum of 0.4 percent.

904.04 HOT MIX ASPHALT (HMA). Mixes shall be produced in a plant as specified in Section 915.

904.04.01 Aggregates. Aggregates shall conform to Section 901, and M 323 with the exception that the aggregate retained on the 4.75 mm sieve shall be tested for flat and elongated particles in conformance with D 4791. When recycled asphalt pavement is used in an HMA mix as defined in MSMT 412, it shall be considered an aggregate source.

904.04.02 Mix Design. The Contractor shall develop a Superpave mix design in conformance with R 35. HMA Superpave mixes shall conform to the specification for Superpave Volumetric Mix Design, M 323, and shall be designed for the Equivalent Single Axle Loading (ESAL) range specified in the Contract Documents.

The contractor may elect to use crushed, recycled asphalt pavement (RAP) material or a maximum of 5 percent roofing shingles from manufacturing waste. *Shingles processed from this waste must be ground, screened to a minus 3/8" size and blended with stabilizing aggregate which shall be processed through a fully automated blending facility prior to being incorporated into the hot mix asphalt production facility. All facilities choosing to incorporate shingles into their mixes must be pre-approved by Baltimore County.*

The use of RAP may be considered for applications where higher polish value aggregates are required. Approval for use will be on an individual project basis. Documentation of RAP stockpile quality and traceability shall be submitted to the Engineer for approval prior to use.

Crushed glass shall not be used in surface mixes. RAP and roofing shingles from manufacturing waste shall not be used in gap-graded mixes, surface mixes

requiring high polish aggregate, or mixes requiring elastomer type polymer binder. *Shingle mixes shall only be used for base course mixes.*

904.04.03 Mix Design Approval. Documents containing the data from the Contractor's laboratory study shall be submitted to the Engineer for tentative approval at least two weeks prior to paving operations using Administration approved AASHTO software, and shall include the following:

- (a) Mix designation.
- (b) Source and percentage of aggregate.
- (c) Source, percentage, and grade of performance graded asphalt binder.
- (d) Anticipated gradation and proportion of each component aggregate.
- (e) Combined cold feed grading, extracted grading, or ignited grading.
- (f) Plant where the HMA mix will be produced.
- (g) Plant target mixing temperature based on viscosity of 0.22 Pa·s.
- (h) Percent passing No. 200 sieve removed by dust collecting system.
- (i) Ratio of dust to binder material on effective asphalt.
- (j) Maximum specific gravity at the target binder content.
- (k) Mix design grading plotted on 0.45 power gradation chart.
- (l) Tensile strength ratio and worksheets.
- (m) The gyratory compaction curve for N_{max} .
- (n) The bulk specific gravity at N_{design} gyrations.
- (o) The air void content (percent V_a) at $N_{initial}$, N_{design} , and N_{max} gyrations.
- (p) The voids in the mineral aggregate (percent VMA) and the voids filled with asphalt (percent VFA) at N_{design} gyrations (T 312).
- (q) The slope of the gyratory compaction curve. 4 of 8
- (r) All consensus and source properties.
 - (1) Coarse aggregate angularity.
 - (2) Flat and elongated.
 - (3) Sand equivalent.
 - (4) Uncompacted void content of fine aggregate.

(5) Bulk and apparent specific gravity of coarse and fine aggregate.

(6) Absorption of coarse and fine aggregate.

Mix designs submitted to the Regional Engineer for approval shall be accompanied by a quantity of job mix formula aggregate and appropriate amount of required PG binder for ignition oven calibration.

If previous construction or performance experience has shown the proposed mix design to be unsatisfactory, the Regional Engineer may require the Contractor to submit a more suitable design.

If the Contractor proposes to change the source of aggregate used in the mix, a revised mix design shall be submitted with the information required above and in 904.04.02. The conditions set forth above relative to initial submission shall apply. If a change in the Performance Grade binder source becomes necessary, a stripping test shall be conducted in conformance with MSMT 410, prior to approval. The Administration may require an antistripping additive test in conformance with D 4867 before giving the final approval.

Field Verification of Mix Design. After receiving the tentative approval for the mix design from the Regional Engineer, the Contractor shall conduct a field verification of the mix at the beginning of production in each plant. Field verification shall be performed by the certified personnel as specified in 504.03. The verification samples shall be prepared as specified in R 35. The Contractor shall notify the Engineer at least two working days in advance of the scheduled verification.

Verification Evaluation.

(a) Initial verification shall consist of four samples tested for the parameters listed in MSMT 730, Table 3. These samples shall be randomly drawn from the first day's production. If the first day of production is less than 1000 tons, the Contractor may choose to spread verification testing over the number of days needed to accumulate 1000 tons. The verification testing shall be completed on the day when production has reached the 1000 tons. The Contractor shall evaluate the verification tests results as specified in MSMT 730.

All tonnage up to and including the final day of verification will not be subject to a price adjustment if individual test data is within the allowable control limits specified in Table 904 A.

(b) If the mix produced by the plant conforms to the parameters listed in MSMT 730, Table 3 with the Percent Within Specification Limit (PWSL) a minimum of 85, production may proceed without any changes. If the Contractor has submitted mixes with identical aggregate combinations and differing asphalt contents associated with changes in ESAL loads, verification will be limited to volumetric analysis at the Engineer's discretion.

(c) If the mix produced by the plant does not conform to the parameters listed in MSMT 730, Table 3 with PWSL a minimum of 85, then an adjustment to the asphalt content or gradation may be made to bring the mix design requirements within acceptable levels.

Permissible adjustment limitations between the approved Mix Design and Adjusted Mix Design are as follows:

TEST PROPERTY	PERMISSIBLE ADJUSTMENT % (*)
Larger than 1/2 in. (12.5 mm) sieve	± 5
1/2 in. (12.5 mm) thru No. 4 (4.75 mm) sieves	± 4
No. 8 (2.36 mm) thru No. 100 (1.50 μm) sieves	± 3
No. 200 (75 μm) sieve	± 1.0
Binder Content	± 0.20

* The permissible adjustment for all mixes shall establish a job mix formula having targets outside the restricted zone. Additionally, Superpave mixes shall be within control points.

When an adjustment is made to the mix design, a second verification shall be performed to ensure that the modified mix conforms to all design requirements. The time and tonnage limitations shall be as specified in (a) above. Material produced during this verification will be subject to a price adjustment if it does not conform to Specifications.

If the adjusted mix conforms to the PWSL, production may proceed. If the mix does not conform to these requirements, production for the mix shall be suspended and a new mix design shall be submitted to the Engineer for approval. The new mix shall be designed as specified in MSMT 412 or R 35.

- (d) Subsequent designs submitted due to nonconformance will be subjected to the price adjustment during the required field verifications. If the mix does not conform to (b) above during the initial verification, production for the mix shall be suspended until corrective action is taken as approved by the Engineer.

904.04.04 Antistripping Additives. HMA shall have a minimum Tensile Strength Ratio (TSR) of 0.85 when tested in conformance with D 4867. The freeze-thaw conditioning cycle is required. HMA mixes not conforming to the minimum TSR requirement shall include an antistripping additive.

When an antistripping additive is needed, the exact quantity shall be determined by the producer in conformance with D 4867 based on a minimum TSR of 0.85.

When a heat stable antistripping additive is used, the minimum dosage rate shall be 0.20 percent of the total weight of asphalt. The additive shall be introduced at the plant by line blending, metering, or otherwise measuring to ensure accurate proportioning and thorough mixing.

When hydrated lime is used, it shall be added in slurry form at the rate of 1.0 to 1.5 percent by weight of total aggregate. The hydrated lime shall conform to

C 1097. Lime slurry shall be sprayed uniformly on the damp, cold aggregate on the feed belt prior to entry into the HMA plant dryer.

Plant control and acceptance of the mix shall be based on MSMT 410 with respect to its stripping potential.

904.04.05 Plant Control. The following tolerances shall apply:

TABLE 904 A – MIX TOLERANCES

PHYSICAL PROPERTY	TOLERANCE (b)
Passing No. 4 (4.75 mm) sieve and larger, %	± 7
Passing No. 8 (2.36 mm) thru No. 100 (150 µm) sieve, %	± 4
Passing No. 200 (75 µm) sieve, %	± 2
Asphalt content, %	± 0.4
Ratio of dust to binder material	0.6 to 1.6 (a)
Mix temperature leaving plant versus mix design temperature, F	± 25
Deviation of maximum specific gravity per lot versus design maximum specific gravity	±0.030
Voids, total mix, (VTM), %	3.5 ± 1.2
Voids, total mix, 4.75 mm mix (VTM), %	3 ± 2
Voids in mineral aggregate, (VMA), %	± 1.2 from design target
Voids filled asphalt (VFA), %	Within spec
Bulk specific gravity, G_{mb} , %	± 0.022
G_{mb} at N_{max} , %	+ 0.5

(a) Not applicable to 4.75 mm.

(b) For mixes other than Gap Graded HMA.

PWSL computations shall be performed for maximum specific gravity, voids in the total mix, voids in the mineral aggregate, and voids filled with asphalt. This computation shall be performed as specified in 504.04.02 using the moving average of the last three consecutive test values for each parameter. If the PWSL for the three test values fall below 85, corrective action shall be taken to bring the PWSL to at least 85. If the PWSL drops below 68, production shall be suspended until corrective action is taken as approved by the Engineer.

(7/06) **Revise** Section 905.01, Certification, Pages 641 & 642:

MATERIAL	SPECIFICATION	REMARKS
Nonreinforced Concrete Pipe	M 86, Class 3	-
Reinforced Concrete Pipe	M 170, Class 4	54 in. (1350 mm) and smaller diameter M 170, load bearing option. 60 in. (1500 mm) and larger diameter M 170, material option.
Concrete End Sections	M 170	-
Polyethylene (PE) Plastic Drain Tube or Pipe	M 252 or M 294	<i>30" or Smaller, Except With Prior DPW Approval</i>
	M 252	underdrain outlet pipes Type S minimum pipe stiffness 50 psi
Polyvinyl Chloride (PVC) plastic Pipe & Drain Pipe	AASHTO Bridge Section 18 PVC Ribbed Pipe	<i>30" or Smaller, Except With Prior DPW Approval</i>
	M 278	underdrain outlet pipes
Reinforced Concrete Arch Culvert	M 206	-
Reinforced Concrete Elliptical Pipe	M 207	horizontal elliptical pipe only.
Preformed Rubber Joint for Circular Pipe	M 198, Type A	-
Corrugated Steel Pipe, Pipe Arches & Underdrain	M 36	<i>For Repair & With Prior DPW Approval Only</i>
[Corrugated Aluminum Alloy Pipe]	[M 196]	<i>(Deleted)</i>
[Structural Plate for Pipe, Pipe Arches & Arches]	{M 167}	<i>(Deleted)</i>
{Polyethylene (PE) Precoated Corrugated	[M 245 & M 246]	[minimum thickness 10 mil (0.25 mm) on

Steel Pipe}		each of the surfaces.]-(<i>Deleted</i>)
Concrete Drain Tile	M 178	-
Polyvinyl Chloride (PVC) Plastic Pipe	F 758, Type PS 28	Perforated Underdrain
Poly Vinyl Chloride (PVC) Sewer Pipe	ASTM D 3034 SDR 35 (4" - 15") ASTM F 794 (8"-30")	Jointing ASTM D 3212 "Push on Joints" using locked in elastomeric seal.

(5/02) **Revise** Table 905.01 (as revised above-original on Page 641):

Change "Reinforced Concrete Sewer Pipe, Pressure Type Non-Cylinder" Specification reference from "AWWA A 302" to "AWWA **C 302**"

Change "Steel Pipe" Specification reference from "AWWA C 202" to "AWWA **C 200**"

(5/02) **Add** to Section 905, Pipe, Page 642:

905.01.01 Marking Non-Reinforced and Reinforced Concrete Pipe. *Non-reinforced and reinforced pipe sections shall be provided to the County with the following information clearly marked on each pipe section:*

- *Pipe Class,*
- *Specification designation:*
- *AASHTO M 86 ... Non-Reinforced Concrete Pipe,*
- *AASHTO M 170 ... Reinforced Concrete Circular Pipe,*
- *AASHTO M 206 ... Reinforced Concrete Arch Pipe*
- *AASHTO M 207 ... Reinforced Concrete Elliptical Pipe,*
- *The date of manufacture,*
- *The name or trademark of the manufacturer, and*
- *Plant identification.*

Circular pipe sections with elliptical or quadrant reinforcement shall have, in addition, one end marked during or immediately following manufacture as follows.

- *Elliptical reinforced sections shall be marked on the inside and outside of opposite walls along the minor axis of the elliptical reinforcing*
- *Quadrant reinforced sections shall be marked on the inside and outside of opposite walls along the vertical axis for quadrant reinforcing,*

Elliptical pipe with quadrant reinforcement shall be marked with the letter "Q". Marking shall be indented into the pipe section or painted thereon with waterproof paint.

905.01.02 Marking Corrugated Metal Pipe. *Corrugated steel pipe shall be marked per manufacturer's practice and Special Provisions in accordance with Contractor's need to identify pipe size and gauge. Coating & lining shall be performed at the construction site.*

905.01.03 Marking Corrugated Aluminum Pipe. *Each corrugated sheet used in annular corrugated pipe and each 2 foot to 5 foot of coiled sheet used in helically corrugated pipe shall be identified by the fabricator showing the following:*

- *Name or trademark of sheet manufacturer and identification of pipe fabricator, if different from the sheet manufacturer,*
- *Alloy, temper, and specified thickness,*
- *Fabrication date by a 6-digit number indicating (in order) the year, month and day of month,*
- *AASHTO designation number (AASHTO M 196).*

Markings shall be applied to the sheet by a permanent method such as coining per ASTM B 666. Identification shall appear on the outside of the pipe.

905.01.04 Marking Polyethylene (PE) Pipe. *All pipes shall be clearly marked at intervals of no more than 10 feet (3 m) as follows:*

- *Manufacturer's name or trademark,*
- *Nominal size,*
- *Specification designation, AASHTO M 294,*
- *Plant designation code,*
- *Date of manufacture or appropriate equivalent code.*

Fittings shall be marked with the designation number of this specification, AASHTO M 294, and with the manufacturer's identification symbol.

905.01.05 Marking Polyvinyl Chloride (PVC) Pipe. *All pipes shall be clearly marked at intervals of no more than 10 feet (3 m), with 3/8" or larger letters, and fittings shall be clearly marked, as follows:*

- *Manufacturer's name or trademark,*
- *Nominal size,*
- *Specification designation, AASHTO M 278,*
- *Plant designation code,*

The pipe shall be tagged with the date of manufacture. All bends made from the pipe shall be marked to show the angle and radius of curvature, in addition to the pipe information listed above. Markings on perforated pipe shall be placed 180° from a point equidistant between the bottom two rows of holes.

A "home" mark, located on the spigot end, indicates the proper position of the bell end when the spigot end has been fully inserted.

905.01.06 Marking Polyethylene (PE) Precoated Corrugated Steel Pipe. *Each 2 foot to 5 foot of coiled sheet or cut lengths shall be identified by marking as follows:*

- *Name of sheet manufacturer,*

- *Brand name,*
- *Specified thickness of metallic-coated sheet,*
- *Type of metallic coating,*
- *Type or thickness of polymer coating,*
- *Identification symbols relating to a specific heat number and coating lot number, and*
- *AASHTO designation number (AASHTO M 246).*

A sheet branded “Non-Specification”, having no brand, or having the brand obliterated shall be rejected. These markings indicate non-conformance to AASHTO M 246 or non-conformance of the metallic-coated steel substrate to appropriate sheet specifications.

905.01.07 Marking Concrete Drain Tile. *Concrete drain tile shall be marked per manufacturer’s practice and per Special Provisions in accordance with Contractor’s need to identify pipe size, etc. at the construction site.*

905.01.08 Marking Polyvinyl Chloride (PVC) Plastic Perforated Underdrain. *The marking shall be applied to the pipe in such a manner that it remains legible after installation and inspection.*

All pipes shall be clearly marked at intervals of no more than 5 feet (1.5 m), with 3/8” (9mm) or larger letters, as follows:

- *Manufacturer’s name or trademark,*
- *Nominal pipe size,*
- *Material designation (cell classification),*
- *Optional: the words “HIGHWAY UNDERDRAIN”,*
- *“Type PS 28” or “Type PS 46”,*
- *Specification designation, ASTM F 758, and*
- *Date of manufacture, plant designation and other control symbols are internally required by the manufacturer.*

Markings on perforated pipe shall be placed 180° from a point equidistant between the bottom two rows of holes.

All bends and fabricated fittings shall be marked as follows:

- *Manufacturer’s name or trademark,*
- *Nominal size,*
- *Material designation (PVC),*
- *Specification designation, ASTM F 758, and*
- *Bends shall also be marked to show degree and radius of curvature (e.g.: 90° 24 in. R).*

905.01.09 Marking Polyvinyl Chloride (PVC) Sewer Pipe. *All pipes shall be clearly marked at intervals of 5 ft (1.5 m) or less, as follows:*

- *Manufacturer’s name or trademark and code,*
- *Nominal pipe size,*
- *The PVC cell classification (e.g.: 12454-B),*
- *A legend, as follows:*

- (8" to 15" Dia.): "Type PSM SDR-41 PVC Sewer Pipe", "Type PSM SDR-35 PVC Sewer Pipe", "Type PSM SDR-25 PVC Sewer Pipe", or "Type PSM SDR-23.5 PVC Sewer Pipe",
- (18" to 30" Dia.): "PS 46 PVC Sewer Pipe", or "PS 10 PVC Sewer Pipe",
- Specification designation, as follows:
- (8" to 15" Dia.): Specification D 3034,
- (18" to 30" Dia.): ASTM F794,

All bends and fabricated fittings shall be marked as follows:

- *Manufacturer's name or trademark (and code for 18" to 30" Dia.)*,
- *Nominal size*,
- *Material designation (PVC)*,
- *Specification designation, as follows:*
- (8" to 15" Dia.): Specification D 3034,
- (18" to 30" Dia.): ASTM F794.

905.01.10 Marking Reinforced Concrete Sewer Pipe, Pressure Type Non-Cylinder. Each length of straight and special pipe and each fitting shall be plainly marked inside, near one end. The markings shall include either the pressure and external load for which the pipe or fitting is designed or the area of steel per linear foot (linear meter) in circumferential reinforcement. Special marks of identification, sufficient to show the proper location of pipe or fitting in the line by reference to layout drawings and schedules shall be placed on the pipe if specifically required in the contract documents. All beveled pipes shall be marked with the amount of the bevel, and the point of maximum pipe length shall be marked on the beveled end. If elliptical reinforcement is used, the minor axis of the reinforcement shall be identified. Markings shall be made on the pipe with a waterproof marking material.

905.01.11 Marking Cast Iron Soil Pipe. Each length of pipe and each fitting shall be plainly marked with the country of origin, the manufacturer's initials or registered trademark by which the manufacturer can be readily identified after installation, and with the letters "XH" (Extra Heavy).

The markings shall be cast, stenciled or otherwise applied on the pipe so as to be clear and legible after installation. The marking shall be cast on fittings and shall be clear and legible after installation and located away from the spigot end so as not to interfere with proper joining upon installation.

905.01.12 Marking Prestressed Concrete Pressure Pipe, Steel Cylinder Type. Each length of straight and special pipe and each fitting shall be plainly marked inside, on the bell or spigot end. The markings shall include either the pressure for which the pipe or fitting is designed or the area of circumferential reinforcement per unit length of pipe wall. Special marks of identification, sufficient to show the proper location of pipe or fitting in the line by reference to layout drawings and schedules shall be placed on the pipe if a tabulated layout schedule is required in the contract documents. All beveled pipes shall be marked with the amount of the bevel, and the point of maximum pipe length shall be marked on the beveled end. Markings shall be made on the pipe with a waterproof marking material.

905.01.13 Marking Steel Pipe. A serial number or other identification shall be painted in a conspicuous location on each section of pipe and each special section. If the pipe is coated or lined, such marking shall be done at the shop and later transferred to the coating or lining. The constructor may be required to furnish the purchaser with line diagrams, or laying schedules, showing where each numbered pipe or special section belongs in the pipeline. The numbers on such diagrams, or schedules, shall correspond to those painted on the pipes and special sections.

905.01.14 Marking Ductile Iron Pipe. The weight, class or nominal thickness, and casting period shall be shown on each pipe. The manufacturer's mark, country where cast, year in which the pipe was produced, and the letters "DI" or "DUCTILE" shall be cast or stamped on the pipe. When required in the contract documents, initials not exceeding four in number shall be cast or stamped on the pipe. All required markings shall be clear and legible, and all cast marks shall be on or near the bell. All letters and numerals on pipe sizes 14 in. (350 mm) and larger shall not be less than ½" (13 mm) in height.

905.01.15 Packaging & Package Marking - Copper Pipe. Each shipping unit shall be legibly marked with the purchase order number, metal or alloy designation, temper, size, total length or piece count or both, and name of supplier. The specification number shall be shown, when specified.

The name or trademark of the manufacturer and the mark indicative of the type shall be permanently (incised) marked on each tube at intervals not greater than 1 ½ feet. Tube in straight lengths shall be further identified throughout its length by means of a continuous colored stripe, symbol, or logo not less than 3/16 inch in height, including a legend repeated at intervals not greater than 3 feet. The legend shall include the type of the tube, name or trademark of the manufacturer or both, and the country of origin. Other information may be included at the option of the manufacturer.

Type K copper tubing shall have a green color stripe. Such color marking is not applicable to tube furnished in annealed straight lengths or coils.

(5/02) **Replace** Section 905.02, Page 643 & 644:

Delete Section 905.02; Cast Iron Pipes and Fittings – Water Mains, and replace with the following:

905.02 Ductile Iron Pipe and Fittings – Water Mains

905.02.01 Pipe:

(a) Pipe shall conform to the requirements of the standards of the Water Supply Division as adopted January 11, 1966, or as amended. Pipe shall be in accordance with all the requirements of the ANSI A21.51 and or AWWA C151 except that the metal thickness shall be as tabulated herein or increased as required. Pipe nominal lengths may be 18 or 20 feet.

(b) Thickness Determination

For ductile iron pipe furnished by the Contractor, the following table shall be used:

Size	Thickness Class	Wall Thickness (inches)	Diameter (inches)	Water Working Outside Pressure 5 Feet Cover Laying Condition B
3 in.	54	.34	3.96	350 p.s.i.
4 in.	54	.35	4.80	350 p.s.i.
6 in.	54	.37	6.90	350 p.s.i.
8 in.	54	.39	9.05	350 p.s.i.
10 in.	54	.41	11.10	350 p.s.i.
12 in.	54	.43	13.20	350 p.s.i.
16 in.	54	.46	17.40	350 p.s.i.
20 in.	54	.48	21.60	350 p.s.i.
24 in.	54	.50	25.80	350 p.s.i.
30 in.	54	.55	32.00	300 p.s.i.
36 in.	54	.63	38.30	300 p.s.i.
42 in.	54	.71	44.50	300 p.s.i.
48 in.	54	.79	50.80	300 p.s.i.

(c) All pipefittings shall be designed and constructed to withstand all external pressure caused by overburden indicated on the profile, traffic loads or any other loads to which the pipe may be subjected. Thickness shall be increased if required due to a change in laying condition or due to excessive cover. Design thickness shall be determined from ANSI A21.50 and AWWA C150.

905.02.02 Joints. Pipes shall have mechanical joints or rubber gasket push type joints. Fittings shall have mechanical joints only. All joints shall be in accordance with the latest ANSI, AWWA and Federal Specifications.

905.02.03 Fittings. All fittings shall be in accordance with the latest standards of the Water Supply Division and with ANSI A21.10 or A21.53 and AWWA C110 & C153 specifications. They shall be designed and constructed to withstand a pressure not less than that for the adjacent pipe. Gray iron fittings may be substituted if ductile iron fittings are not available. Fittings 12 inches and smaller shall generally be Class 250 or Class D. Those 16 inches and larger shall generally be Class 150 or Class B.

905.02.04 Coating. All pipe and fittings shall be cement-lined standard thickness per AWWA C104. This lining shall be sealed with a bituminous seal coat. The outside surface shall be bituminous coated.

905.02.05 Restrained Joints. Restrained joints shall be used in those sections shown on the contract drawings or construction details. Only those listed below or approved by the engineer shall be used. In cases where approval is required, the contractor shall submit five copies of the catalog cut, along with pullout strength data, to the engineer. If the contractor requests restrained joints in lieu of another type of restraint system, he shall submit calculations for the restrained length of pipe in accordance with the guidelines set forth by DIPRA (Ductile Iron

Pipe Research Association). All restrained joints shall be installed in accordance with the torque ratings, and assembly & deflection guidelines set forth by the manufacturer.

- (b) Retainer Glands-used in conjunction with mechanical type joints
 1. Ductile iron retainer glands-many manufactures and suppliers. No settlement, short runs
 2. Megalug-EBAA Iron Inc. Also used for fittings on semi-flexible installations.
 3. Uni-Flange Series 1400-Ford Inc. Also used for fittings on semi-flexible installations.

- (c) Semi-flexible Restrained Joints-used in conjunction with push-on type joints (Fill or bad soil, all straight pipe, Megalug or equal on fittings)
 1. TR-Flex- U.S. Pipe
 2. Superlock- Clow Corporation
 3. Snaplock- Griffin Pipe
 4. Field-Lok 350- U.S. Pipe (**non-fill areas only**)

- (d) Large Diameter Push-On Type Joint
 1. Lock-Fast Joint- American Pipe

- (e) 15 Degree "Ball Joints" (sub-aqueous, restrained)
 1. USI-Flex- U.S. Pipe
 2. Flex-Lok- American Pipe

(5/02) **Add** to Section 905.04.02, Water Valves, Page 648:

(e) **Gearing.** Resilient seated gate valves shall have gearing to match the number of turns required by "Baltimore Standard" double disc gate valves.

(5/02) **Revise** 905.04.02 (b), Water Valves, Page 648:

Delete the following:

[Lead Joint

12 in. (30 cm) and smaller	Class D
16 in. (41 cm) and larger	Class B (approx.)]

(5/02) **Revise** Section 905.04.03 (b), Water Meter Settings, Page 649:

- (1) Corporation stop with coupling nut at main must be Mueller **[H-1500] H-15000** or approved equal.

- (4) Brass meter spreader for twin connection must be 7-1/2 in. (19 cm) center-to-center with male thread ends and must be Mueller **[H-15366] H-15362** or approved equal.

Add the following:

(c) **Meter Vaults.** *Meter vaults shall be constructed of precast concrete in accordance with AASHTO M-170 and as shown on Standard Detail W-20.*

(12/1/00) **Remove** Pipe Table, Section 907.01.01 Resin and Fiberglass Caps for Timber Pile Heads, Page 651:

Delete the Pipe Table on Page 651 in its entirety.

(12/1/00) **Revise** Section 909.04, Gray Iron Castings, Page 654:

[909.04 GRAY IRON CASTINGS. *Iron castings shall conform to A48, Class 30B.]*

"Iron castings for placement within Baltimore County right-of-way or easements for drainage or utility use shall conform to the following:

1. *Materials per ASTM A48, Class No. 30B, or better.*
2. *Castings shall be free of burnt-on sand, blowholes, welds and plugs. Surfaces shall be reasonably and consistently smooth. Runners, risers, fins, etc. shall be removed and the areas ground smooth. Finish to be unpainted. Presence of dirt, scab or slag requires repair, re-cleaning and re-submittal of affected castings. Pinholes, shrink or cracks in a casting are cause for rejection.*
3. *Bearing surfaces between frames and covers / grates shall be cast or machined with sufficient precision that uniform bearing is provided throughout the intended area of contact. Pairs of machined castings shall be match marked for identification during installation.*
4. *Covers and grates shall not rock within frames. Rocking may not occur when cover / grate is rotated to any position in the frame.*
5. *Cover / grate shall sit within frame so that top of cover / grate is flush with top of frame as shown on Standard Details. A difference of more than 1/8" at any point is unacceptable. Variation in level between cover & frame shall not exceed 1/16" in over 1/4 of circumference.*
6. *Tolerances shall be as noted on Standard Details or as follows:*

FRAME:

*Cover Opening Diameter: + 1/16"
Cover Opening Depth: + 1/32", -0"
Height: + 1/8"
Flange: + 1/4"*

COVER / GRATE:

*Diameter: + 1/16"
Seat Depth: + 0", -1/32"*

OTHER DIMENSIONS: + 1/8"

7. *Each casting provided to Baltimore County shall be prominently marked with the foundry name, country, date of manufacture, AASHTO/ASTM designation, Class and heat number by casting, engraving or stamping with 1/2" min. letters. Foundry name and country of manufacture, at a minimum, shall be visible after installation. Covers and grates shall have foundry name and country of manufacture imprinted on their top surfaces.*
8. *In addition to the criteria stated in items 1 through 7, acceptance of castings shall be based upon acceptable proof load tests on actual castings, per Section 7.1 and 9.1.1 of AASHTO M 306. Test bar results shall not constitute acceptable proof of load bearing capacity for castings to be used in Baltimore County.*
9. *Certification of results of proof load testing of samples shall be provided by the foundry through the supplier to the Baltimore County Construction Contracts Administration Division or to the Baltimore County Bureau of Utilities, or Bureau of Highways and Equipment Maintenance, as applicable, upon delivery to site. Certification shall be based upon random testing of each item at a minimum of once every 6 months, and/or upon on-demand testing as requested by Baltimore County. Castings for which no certification is provided, or where certification is deemed inadequate shall be rejected and removed from the site. The foundry shall maintain and make records of test results available to Baltimore County for a minimum period of 7 years."*

(12/1/00) **Revise** Section 911.01, Joint Sealer and Crack Filler, Page 658:

911.01 JOINT SEALER AND CRACK FILLER. Joint sealer and crack filler shall conform to **[D 3406] D 3405** as modified by MSMT 404. The manufacturer shall furnish certification as specified in TC-1.02. Manufacturer's recommendations regarding heating and pouring temperatures will be used when testing these materials. If a range of temperatures is recommended, the midpoint will be used as the pour point.

(12/1/00) **Delete** Section 921.10, Polyethylene (PE) Manholes, Page 710:

Delete Section 921.10, Polyethylene (PE) Manholes in its entirety.

(12/1/00) **Revise** Section 1001.03.01 (b), General Requirements, page 732:

- (2) On all Developer Projects the Contractor and Developer shall provide the Engineer with a hold harmless agreement which stipulates that Baltimore County will not be responsible for any additional cost due to any road or right-of-way failing to comply with the subgrade or proposed profile as shown on the contract drawings. This form is available from the Construction Contracts Administration Division, and shall be provided to the Engineer as soon as possible following the award of the Contract. **The County does not require a hold harmless agreement for UA and RA contracts.**

(5/02) **Revise** Section 1001.03.04, General Requirements-Excavation, (a) (1), Page 737:

- (1) **Single Tier Provision.** If the Contractor elects to use single-tier bracing (either solid sheeting or metal trenching box), applicable contingent item payments are based on Detail G-6 and G-7

Trench Width plus 2 feet,
Crusher Run Paving Width plus **[w]** 2 feet, and
Finished Paving Width plus 2 feet.

(5/02) **Revise** Section 1001.03.04, General Requirements-Excavation, (a)(3), Page 737:

- (3) **Trench Width Around Appurtenances.** Through areas of appurtenant construction (manholes, inlets, etc.) total trench width must be 4 feet greater than the outside width of the appurtenance for a total distance of 4 feet longer than its outside length. ***If depth is over sixteen feet, trench width will be increased to six feet greater than outside width of appurtenance for the portion over sixteen feet deep.*** Item payments are based on these widths [plus the above bracing additives where applicable].

(5/02) **Add** to Section 1001.04 (b), Class 3 Excavation, Page 743:

- (3) ***Change of Trench Location. In case the Engineer directs that the location of a trench be changed to a reasonable extent from that proposed on the drawing on account of the presence of an obstruction, or from other cause, or if a changed location is authorized upon the Contractor's request, the Contractor will not be entitled to extra compensation or to a claim for damages, provided that the change is made before the excavation has begun. If, however, such change made at the direction of the Engineer involves the abandonment of excavation already made, such abandoned excavation, together with the necessary refill, will be classified as Class 3 Excavation. Where trenches have been completely excavated, payment will be based on the widths shown in the Standard Details. In the event that the trench is abandoned in favor of a new location at the Contractor's request, the abandoned excavation and refill shall be at the Contractor's expense.***

(12/1/00) **Revise** Section 1002.02, Repairing Trench Openings-Flexible Paving, Page 743:

1002.02 MATERIALS – [Not Available]

Graded Aggregate Base	901
Hot Mix Asphalt	904.02

(5/02) **Revise** Section 1003.03.07 (b) , Chlorination and Field Tests, Water Samples, page 749:

... [All tests must comply with the A.W.W.A. Standard No. C601-68 for Disinfecting Water Mains.] *The procedures for disinfecting water mains must follow the continuous feed method, Section 5.2.3 found in the A.W.W.A. Standard C 651-92 for disinfecting water mains. The initial concentration of the free chlorine shall not be less than 50 mg/L.*

(5/02) **Revise** Section 1003.03.07 Chlorination and Field Test (f) & (g), Pages 750 & 751:

[(f) Hydrostatic test. The Contractor shall: While the main is filled with chlorinated water, raise the pressure to a value as specified in the contract drawings. Maintain the specified test pressure at the low point on the main for at least 30 minutes by adding additional water if required. If the tests show the main to be defective, remedy the defects and retest the main as specified above. Repeat the procedure until the test requirements are met.

(g) Leakage Test. After the satisfactory completion of the hydrostatic tests, the new installation must be subject to a leakage test of at least 24 hours at working pressure, as directed by the Engineer. This test must show a leakage not exceeding 25 gallons per inch of diameter per mile per 24 hours. Until the leakage test requirements are met, the Contractor must make all repairs that may be necessary to accomplish this. After all test have been satisfactorily completed (including the removal of chlorine) the Contractor shall connect the new water main to the distribution system.]

(f) Hydrostatic and Leakage Tests. *While the main is filled with chlorinated water, the contractor shall raise the pressure at the lowest point in the main to the Test Pressure as specified on the contract drawings not exceeding this amount by more than 10%. If the main, regardless of diameter, is able to maintain test pressure for 30 minutes, it has passed the leakage and pressure tests. Should a main larger than 24" in diameter be unable to maintain test pressure, water may be added at a maximum rate of 25 gallons per inch of diameter per mile per 24 hours to maintain test pressure. This portion of the test shall be held for 24 hours. If the test requirements are not met within the time frames set above, the contractor shall make any repairs necessary, at its own expense, to remedy the defects and retest the main as specified. Once the main has passed the tests (including the removal of chlorine), the contractor shall make the connections, as shown on the plans, to the distribution system.*

[(h)] (g) Labor and Equipment. The Contractor shall furnish all labor, water, material etc.

(5/02) **Revise** Section 1004.03.02, Vaults Around Valves: Page 753:

(d). Valves 16", 20", 24" and 30". Construct built-in-place vaults ... or as directed by the Engineer.

The placement and consolidation of the required bedding under the unit shall be a minimum 6 inches (150 mm) of No. 57 aggregate unless otherwise directed by the Engineer.

(7/06) **REPLACE** Section 1005.03.01 Jacking and Driving (Page 753) with the following:

Section 1005.03.01 Service Connections

Water service connections to houses which require installation beneath any type of paving, shall be installed through open-cut trenches, unless otherwise noted on the drawings, in a permit, or directed by the Engineer. When directed by the Engineer in the field, payment for jacking will be made on the Force Account Basis.

(5/02) **Revise** Section 1005.03.03, Water House Service, Meter Setting & Vaults, Page 754:

1005.03.03 Water Service Leads. When installing water service leads 4 inches in diameter and larger, ensure that these leads are level between the proposed meter location and **[the pipe diameter towards]** the parent main and that they have a minimum of 4 feet of cover at the curb.

(5/02) **Revise** Section 1006.02, Fire Hydrants, Page 755:

1006.02 MATERIALS. Only fire hydrants **and restrained joints** approved by the Baltimore City Department of Public Works are accepted. See Section 905.

(5/02) **Revise** Section 1006.03.02, Fire Hydrants, Page 755:

1006.03.02 [Concrete Buttresses] Hydrant Leads. Take special care to lay the hydrant leads level on a firm foundation so that the hydrant is plumb. **[Install standard concrete buttresses against undisturbed earth, capable of developing a passive pressure of 3,000 pounds per square foot. If this bearing cannot be achieved, special buttresses will be required as shown on the Plans or as directed by the Engineer.]**

(12/1/00) **Revise** Section 1007.01, Sanitary Sewers & Sanitary Sewer House Connections, Page 756:

1007.01DESCRIPTION. This work consists of sanitary gravity sewers and house connections of **[cast iron,]** ductile iron, **[clay,]** concrete, **[ABS,] or PVC [or asbestos cement]** pipe of the diameter shown on the Plans, laid on a firm bed true to line and grade according to these Specifications.

(1/07) **Addition** to **Section 1007.03.02, Acceptance Testing**, Page 759, requiring inspection of interiors of new sewers 8" or larger in diameter with closed circuit TV cameras:

(f) TV Inspection.

(1) DESCRIPTION OF WORK

(a) The work covered by this section consists of providing all labor, equipment, material and supplies and performing all operations required

to conduct the internal closed-circuit television inspection and recording of all sewer and storm drain pipe.

(b) Submittals.

- DVDs for each pipeline project inspected.
- TV Inspection Log: Each TV Inspection Log shall be submitted to the County, accompanied by the respective DVD.
- PACP Operator Certification: Prior to initiating CCTV Inspection work associated with condition assessment assignments, the Contractor shall present the County with copies of PACP certifications of operators that will be performing the work.

(c) Definitions.

- Pre-Installation TV Inspection. Pre-installation TV is a video inspection by the Contractor of sewer lines specified for rehabilitation to confirm cleaning, location of service connections, and constructability of line rehabilitation according to the Specifications.
- Post-Installation TV Inspection. Post-installation TV is a video inspection to determine that rehabilitation, replacement or new construction of a sanitary sewer has been completed according to the Specifications.
- TV Inspection Log. Information collected and recorded by each TV operator for any TV inspection that is submitted to the County.
- PACP: Pipeline Assessment and Certification Program. A CCTV inspection standardization certification and observation coding system sponsored by the National Association of Sewer Service Companies (NASSCO).

(2) MATERIALS.

(c) Closed Circuit Television Equipment. Select and use closed-circuit television equipment that will produce a color video.

(d) Pipe Inspection Camera. Produce a video using a pan-and-tilt, radial viewing, pipe inspection camera that pans ± 275 degrees and rotates 360 degrees. The television camera used for the inspection shall be specifically designed and constructed for such inspection. The camera shall be operative in 100% humidity conditions. All attributes (distance, etc.) shall be coded in accordance with accepted P.A.C.P. standards. Use a camera with an accurate footage counter that displays on the monitor the exact distance of the camera (to the nearest tenth of a foot) from the centerline of the starting manhole. Use a camera with camera height adjustment so that the camera lens is always centered at one-half the inside diameter for circular pipe and two-thirds the rise (height) for elliptical pipe. Lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the pipe. The video camera shall be

capable of showing on the DVD the Owner name, Contractor name, date, line size and material, line identification (Owner's manhole numbers at both ends) and ongoing footage counter. The camera, television monitor, and other components of the video system shall be capable of producing picture quality to the satisfaction of the County; if picture quality is unsatisfactory, the TV inspection will not be accepted. Camera must be properly focused at all times during recording. No payment will be made for an unsatisfactory inspection.

(c) Data Media.

- All television inspections shall be provided on DVD. All DVDs shall be submitted to the County and will become the property of the County.
- DVDs shall be equipped with an appropriate software viewer, to be supplied by the Contractor at no additional cost to the County. The DVD shall be capable of being downloaded to CASSWORKS. CASSWORKS is currently capable of accepting POSN and WINCAM software. All conversion required to accomplish the download to CASSWORKS-compatible formats shall be done by the Contractor at his expense.
- Two labels are required. One label shall be placed on the DVD and the other on the DVD case. Permanently label each DVD with the following information:

On DVD

County Name: _____	Contractor's Name: _____	Project Name _____
Inspection Type: _____	<input type="checkbox"/> Survey	<input type="checkbox"/> Pre-Installation <input type="checkbox"/> Post-Installation
DVD No.: _____	Date Televised: _____	Contract No.: _____
Basin No.: _____	Drawing No. _____	

DVD Case

County Name: _____	Contractor's Name: _____	Project Name _____		
Inspection Type: _____	<input type="checkbox"/> Survey	<input type="checkbox"/> Pre-Installation <input type="checkbox"/> Post-Installation		
DVD No.: _____	Date Televised: _____	Date Submitted: _____		
Basin No.: _____	Contract No.: _____	Dwg.No.: _____		
Manhole No. From	Manhole No. To	Pipe Diameter	Pipe Length	Street
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	

(3) CONSTRUCTION REQUIREMENTS.

(a) Pre-Installation Inspection.

1) Procedure.

- Perform pre-installation TV inspection immediately after line cleaning and before line rehabilitation work. Verify that the line is clean and

ready to accept the line rehabilitation. Prepare Television Inspection Logs. Maintain copies of DVDs and reports for reference by the County for the duration of the project.

- Prior to any repair work, the entire sewer line (from manhole to manhole) shall be televised. The pre-installation inspection shall be used to determine whether the line has been cleaned sufficiently; to confirm the location and nature of defects; and to confirm that the proposed method of repair is proper for the defects observed.
- The camera shall be moved through the line in either direction at a moderate rate, stopping when necessary to permit proper documentation of the sewer's condition. In no case shall the television camera be pulled at a speed greater than 30 feet per minute. Manual winches, power winches, TV cable, and powered rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the sewer conditions shall be used to move the camera through the sewer line.
- If, during the inspection operation, the television camera will not pass through the entire manhole section, the Contractor shall set up his equipment so that the inspection can be performed from the opposite manhole. If, again, the camera fails to pass through the entire pipe section, the inspection shall be considered incomplete until repair/adjustment is made allowing camera passage for completion of the TV inspection. If the line is determined impassable, the Contractor shall contact the County to identify subsequent actions. Improper cleaning is not an acceptable reason for incomplete televising of a line section.
- When manually operated winches are used to pull the television camera through the line, telephones or other suitable means of communication shall be set up between the two manholes of the section being inspected to insure good communication between members of the crew.
- The importance of accurate distance measurements is emphasized. Measurements for location of defects shall be above ground by means of a meter device. Marking on the cable, or the like, which would require interpolation for depth of manhole, will not be allowed. Accuracy of the distance meter shall be checked by the use of a walking meter, roll-a-tape, or other suitable device. The meter device shall be accurate within one-tenth of a foot.
- During the internal inspection the television camera shall be temporarily stopped at each defect along the line. The Contractor shall record the nature and location of the defect. Where defects are also active infiltration sources, the infiltration shall be classified in terms of PACP coding. The camera shall also be stopped at active service connections where flow is discharging. If the flow continues, the property involved shall be checked by the Contractor to determine whether or not the flow is sewage. Flows from service connections which are determined to be infiltration shall also be recorded.

- Camera operator shall slowly pan and tilt at beginning and ending manholes, each service connection, every fifth joint (every joint if deficiencies are noted), visible defects and when pipe material transitions from one material to another. Zoom in on defects and connections if camera will allow this.
- TV inspection DVDs shall be continuous for pipe segments between manholes. Do not leave gaps in the recording of a pipe segment between manholes, do not repeat pipe segment videos on the same or subsequent DVDs, do not show incomplete pipe inspections or overlap a pipe segment inspection between 2 DVDs.

2) Flow Control.

- Flow control for televising the pipeline shall be the responsibility of the Contractor.
- If during survey TV inspection of a manhole section, the flow depth exceeds 20% of the pipe diameter, reduce the flow depth to an acceptable level by performing the survey TV inspection during minimum flow hours, by diversion pumping, or by pulling a camera with swab, high-velocity jet nozzle or other acceptable dewatering device. A video made while floating the camera is not acceptable unless approved by the County.

3) Documentation of Television Inspection.

- The Television Inspection shall be documented using a computerized datalogger and reporting system.
- Television Inspection Logs: Printed location records shall be kept by the Contractor and shall clearly show the location in relation to an adjacent manhole of each infiltration point observed during inspection. In addition, other points of significance such as locations of service connections, building sewers, unusual conditions, roots, storm sewer cross connections, broken pipe, presence of scale and corrosion, and other discernible features shall be recorded and a copy of these records shall be supplied to the County.
- Digital Photographs: Noted defects and lateral connections shall be documented as digital files and hard copy print-outs. Photo logs shall accompany each photo submitted.
- DVD Recordings: The purpose of DVD recording shall be to supply a visual and audio record of problem areas of the lines that may be replayed. DVD recordings shall include an audio track recorded by the inspection technician during the actual inspection work describing the parameters of the line being inspected (i.e. location, depth, diameter, pipe material), as well as describing connections, defects and unusual conditions observed during the inspection. DVD recording playback shall be at the same speed that it was recorded. Slow motion or stop-motion playback features may be supplied at the

option of the Contractor. Once recorded, the DVDs shall be labeled and become the property of the County. The Contractor shall have all DVDs and necessary playback equipment readily accessible for review by the County during the project.

- All DVDs associated with a capital project shall be forwarded to Construction Contracts Administration Division for review. After completion and final approval of a project, the DVDs and other inspection records shall be forwarded to the Storm Drain and Sewer Maintenance Division of the Bureau of Utilities for Cassworks entry and for permanent storage for future reference. DVDs done for the Bureau of Utilities shall be forwarded to that agency at completion of work.

(b) Post - Installation Inspection.

1) Procedure.

- Post-Installation TV inspection shall not be performed until all work, including lateral replacement and manhole restoration, is complete on a section of line. Manhole work, including benches, inverts and pipe penetrations into manhole, shall be complete prior to post-installation TV work. The post-installation TV inspection DVDs shall be submitted to the County Construction Contracts Administration Division prior to acceptance of the work by the Department of Public Works.
- The post-installation TV inspection shall be completed by the Contractor in the presence of the County. The post-installation TV inspection shall be completed to confirm completion of rehabilitation and to verify that the rehabilitation work conforms to the requirements of the Specifications. Provide a color DVD showing the completed work, including the condition of restored service connections. Prepare and submit Television Inspection Logs providing location of service connections along with location of any discrepancies.
- For post-installation TV inspection, exercise the full capabilities of the camera equipment to document the completion of the rehabilitation and replacement work and the conformance of the work to the Specifications. Provide a full 360-degree view of pipe, joints and service connections.
- Methodology shall be as described in Section 1007.03.02a (3)(a) 1) Procedure (Pre-Installation Inspection).

- 2) Flow Control and Documentation of Television Inspection** shall be conducted as specified in Section 1007.03.02a (3)(a) 2) and 3) (this section) for Pre-Installation Inspection.

(4) MEASUREMENT AND PAYMENT.

Television Inspection for New or Rehabilitated Pipes. This item will not be measured.

Basis of Payment. Payment for television inspection for the purpose of pre- or post-lining operations, will be included in the prices bid for items in the proposal and as defined in these Specifications.

(12/1/00) **Revise** Section 1008.02.03, Sanitary Sewer Manholes, Page 761:

1008.02.03 Manhole Steps. ***Manhole steps shall be constructed in accordance with Standard Details G-4 and G-4A.***

- [A. Construction Material**
Galvanized steel, stainless steel; or polypropylene, plastic-coated, deformed steel rod.

- B. Design:**
Design steps according to 29 CFR 1910.27(a) for the minimum design live load specified. Minimum tread width is 10 inches. Provide a clearance between the step tread and the manhole wall of 6 inches. Provide a minimum of 3 inches imbedment in the walls of precast manhole walls. Design manhole steps to prevent the foot from sliding off the end of the step.

- C. Precast Manhole Steps shall be in accordance with ASTM C478 and as specified above, whichever is more stringent.]**

(12/1/00) **Revise** Section 1008.02.04, Sanitary Sewer Manholes, Page 762:

1008.02.04 Precast Concrete Manholes. These manholes must meet the requirements of ASTM C 478. **[The adjustment brick under the frame must not be more than 1 foot high.] See Standard Details S-4 and S-5.**

(5/02) **Revise** Section 1008, Sanitary Sewer Manholes, Page 762:

1008.03.01 Precast Concrete Manholes shall be installed as shown on the Plans and Standard Details. ***The placement and consolidation of the required bedding under the unit shall be a minimum 6 inches (150 mm) of No. 57 aggregate unless otherwise directed by the Engineer.***

(12/1/00) **Revise** Section 1008.03.07, Sanitary Sewer Manholes, Page 763:

1008.03.07 Manhole Frames, Covers and Steps. Furnish and set these items as work progresses. Insure that the frames are **[well bedded in mortar] installed in accordance with Construction Documents or per instructions of the Engineer.** Space steps vertically and align as shown on the Standard Detail Drawings.

(5/02) **Revise** Section 1008.04.01 (b) , Sanitary Sewer Manholes, Page 763:

(c) [Items Not Covered.] Items Covered Elsewhere.

TABLE 901 A

AGGREGATE GRADING REQUIREMENTS - TEST METHOD T 27

MATERIAL		U.S. STANDARD SIEVE SIZE - PERCENT PASSING																
		3"	2 1/2"	2"	1 1/2"	1"	3/4"	1/2"	3/8"	No. 4	No. 8	No. 10	No. 16	No. 30	No. 40	No. 50	No. 100	No. 200
2" - 3" STONE for SED. CTRL. (j)		100	25-60	-	0-15	-	0-5	-	-	-	-	-	-	-	-	-	-	-
CRUSHER RUN AGGREGATE CR-1		100	-	-	-	45-70	-	-	-	15-45	-	-	-	-	-	-	-	0-10
CRUSHER RUN AGGREGATE CR-6		-	-	100	90-100	-	60-90	-	-	30-60	-	-	-	-	-	-	-	0-15
BANK RUN GRAVEL- SUBBASE		-	100	-	-	90-100	-	60-100	-	-	-	35-90	-	-	20-55	-	-	5-25
GRADED AGGREGATE- BASE DESIGN RANGE (a)(h)		-	-	100	95-100	-	70-92	-	50-70	35-55	-	-	-	12-25	-	-	-	0-8 (i)
TOLERANCE (b)		-	-	-2	+5	-	+8	-	+8	+8	-	-	-	+5	-	-	-	+3 (c)
BANK RUN GRAVEL - BASE		-	100	-	-	85-100	-	60-100	-	-	-	35-75	-	-	20-50	-	-	3-20
COARSE AGGREGATE (FOR PORTLAND CEMENT CONCRETE)	57 & UNDERDRAIN	-	-	-	100	95-100	-	25-60	-	0-10	0-5	-	-	-	-	-	-	-
	67	-	-	-	-	100	90-100	-	20-55	0-10	0-5	-	-	-	-	-	-	-
	7	-	-	-	-	-	100	90-100	40-70	0-15	0-5	-	-	-	-	-	-	-
FINE AGGREGATE (FOR PORTLAND CEMENT CONCRETE & UNDERDRAIN) (d)		-	-	-	-	-	-	-	100	95-100	-	-	45-80	-	-	10-30	2-10	-
COARSE AGGREGATE (FOR LIGHTWEIGHT PORTLAND CEMENT CONCRETE)		-	-	-	-	100	90-100	-	10-50	0-15	-	-	-	-	-	-	-	-
FINE AGGREGATE (FOR LIGHTWEIGHT PORTLAND CEMENT CONCRETE) (d)		-	-	-	-	-	-	-	100	85-100	-	-	40-80	-	-	10-35	5-25	-
FINE AGGREGATE/ SAND MORTAR and EPOXIES (d)		-	-	-	-	-	-	-	-	100	95-100	-	-	-	-	-	0-25	0-10
MINERAL FILLER		-	-	-	-	-	-	-	-	-	-	-	100	-	95-100	-	-	70-100
CRUSHED GLASS (e)		-	-	-	-	-	100	-	-	0-55	-	-	-	-	-	-	-	-

(a) To establish target values for design.

(b) Production tolerance.

(c) ± 2 for field grading. (omitting T 11)

(d) Fine aggregate includes natural or manufactured sand. *For underdrain, use bank run sand only.*

(e) Crushed glass shall not contain more than one percent contaminants by weight.

(f) Reserved

(g) 3" Screen

(h) Graded Aggregate Base shall conform to ASTM D2940.

Unless otherwise specified, the gradation design range shall control and the limit for material finer than 0.075 mm is waived.

(i) 8.0 max.

(j) AASHTO M43 No. 1 Modified ($d_{50}=2.5"$, $d_{100}= 3"$)