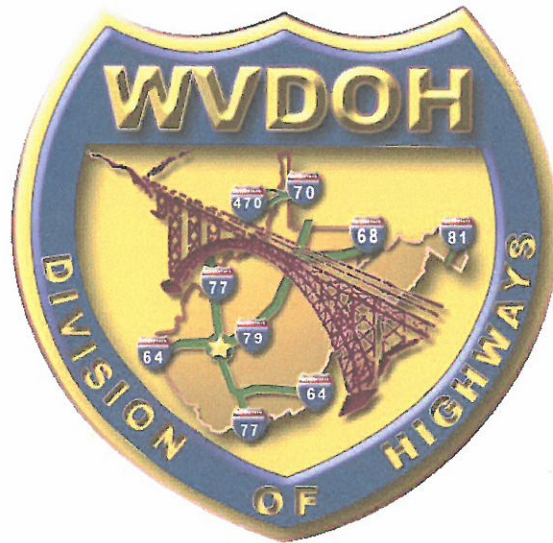


**WEST VIRGINIA
DIVISION OF HIGHWAYS**



**STANDARD SPECIFICATIONS
ROADS AND BRIDGES
Adopted 2010**

SECTION 101 DEFINITION OF TERMS

101.1-ABBREVIATIONS:

Whenever the following abbreviations are used in these Specifications, Plans or Contract Documents, they are to be construed the same as the respective expressions represented:

AAN	American Association of Nurserymen
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
AIA	American Institute of Architects
AISC	American Institute of Steel Construction, Incorporated
AISI	American Iron and Steel Institute
AMA	Automotive Manufacturer's Association
AMS	Aerospace Material Specification
ANSI	American National Standards Institute
ARA	American Railway Association
AREA	American Railway Engineering Association
AREMA	American Railway Engineering and Maintenance of Way Association
ASCE	American Society of Civil Engineers
ASD	Aluminum Standards & Data-Aluminum Association
ASLA	American Society of Landscape Architects
ASTM	American Society for Testing and Materials
ATSSA	American Traffic Safety Services Association
AWWA	American Water Works Association
AWS	American Welding Society
FHWA	Federal Highway Administration
FSS	Federal Specifications and Standards, General Services Administration
IEEE	Institute of Electronic and Electrical Engineers
IPCEA	Insulated Power Cable Engineers Association
ISA	Instrument Society of America
MIL	Military Specification
MP	Materials Procedure (see 101.2 in definition)
NBFU	National Board of Fire Underwriters
NEC	National Electric Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
PEI-ALS	Porcelain Enamel Institute: Aluminum Standards
UL	Underwriters Laboratories
SAE	Society of Automotive Engineers
SSPC	Society for Protective Coatings
TTE-TTP	Federal Specifications and Standards

101.2-DEFINITIONS:

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ACCESS CONNECTION-Any roadway facility by means of which vehicles enter or leave arterial highways.

ADVERTISEMENTS-The public announcement, as required by law, inviting bids for work to be performed, or material to be furnished.

ARTERIAL HIGHWAY-A general term denoting a highway primarily for through traffic.

AUXILIARY LANE-The portion of the roadway adjoining the traveled way for parking, speed-change or other purposes supplementary to through traffic movement.

AWARD-The acceptance by the Division of a bid.

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BASE COURSE-A layer or layers of specified material of designated thickness placed on a subbase or a subgrade to support a surface course or courses.

BIDDER-An individual, firm, corporation, or combination thereof, acting directly or through a duly authorized representative, and prequalified according to the requirements and provisions of the Division, submitting a bid for the proposed work.

BRIDGE-A structure, including supports, erected over a depression or an obstruction, such as water, a highway or railway and having a track or passageway for carrying traffic or other moving loads and having a length measured along the center of roadway of more than 20 ft. (6.1 meters) between undercopings of abutments or extreme ends of openings for multiple boxes.

The length of a bridge structure is the overall length measured along the line of survey stationing back to back of abutments if present, otherwise, end to end of the bridge floor, but in no case less than the total clear opening of the structure. Roadway width is the clear width measured at right angles to the longitudinal centerline of the bridge between the bottom of curbs.

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CALENDAR DAY-Every day shown on the calendar.

CERTIFIED TECHNICIAN-A Certified Technician is an individual who has been examined by the joint Industry-Division Certification Board and deemed competent in the particular technical field for which the individual has been examined. This competency is documented by written notification and issuance of a certificate to the individual and remains in effect for a given period of time as determined by the regulations of the Board. Should any questions develop concerning the status of an individual, verification may be made through the Training section of the Personnel Division of the Division.

CHANGE ORDER-A general term referring to force account work orders, supplemental agreements, and work orders of the Contract.

CHANNEL-A natural or artificial water course.

CITY, TOWN OR DISTRICT-A subdivision of the county used to designate or identify the location of the proposed work.

COMMISSIONER-West Virginia Commissioner of Highways.

CONSTRUCTION LIMITS-The physical limits of construction as described by designated lines drawn on the Plans.

CONTRACT-The written agreement between the Division and the Contractor covering the performance of the work, the furnishing of labor, equipment and materials, and the basis of payment. The Contract includes the invitation of bids, proposal, contract form, contract bond, specifications, supplemental specifications, special provisions, plans, notice to proceed, any change orders and supplemental agreements that are required to complete the construction of the work in an acceptable manner, including authorized extensions thereof, all of which constitute one instrument.

CONTRACT BOND-The approved form of security, executed by the Contractor and their surety, guaranteeing completion of the work and payment of all legal debts pertaining to the construction of the project.

CONTRACT PERIOD-The period from the specified date of commencement of work to the specified date of completion of the work, both dates inclusive, as is specified in the Contract.

CONTRACT TIME-The number of work or calendar days specified in the proposal, indicating the time allowed for the completion of the work contemplated, including authorized time extensions.

CONTRACTOR-The individual, firm or corporation, party of the second part to the Contract, acting directly or through their agents, employees, or subcontractors.

CONTROL OF ACCESS, FULL-The condition where the right of owners or occupants of abutting land or other persons to access, light, air or view in connection with a highway is fully controlled by public authority. The authority to control access is exercised to give preference to through traffic by providing access connections with selected public roads only and by prohibiting crossings at grade or direct driveway connections.

CONTROL OF ACCESS, PARTIAL-The condition where the right of owners or occupants of abutting land or other persons to access, light, air or view in connection with a highway is partially controlled by public authority. The authority to control access is exercised to give preference to through traffic to a degree that, in addition to access connections with selected public roads, there may be some crossings at grade and some private driveway connections.

COUNTY-The County or Counties of West Virginia in which the work is to be done.

CULVERT-Any structure not classified as a bridge which provides an opening under the roadway.

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DEPARTMENT-West Virginia Department of Transportation.

DIVISION-West Virginia Division of Highways

DIVIDED HIGHWAY-A highway with separated roadways for traffic in opposite directions.

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EASEMENT-A right acquired by one party to use land belonging to another party for a specified purpose.

EMBANKMENT-The structure of soils, soils aggregate and broken rock between the embankment foundation and the subgrade.

EMBANKMENT FOUNDATION-The material below the original ground surface whose physical characteristics affect the support of the embankment.

EMPLOYEE-Any person working on behalf of the project who is under the direction of the Contractor or any subcontractor.

ENGINEER-The State Highway Engineer of the Division, or an authorized representative, limited by the scope of duties assigned.

EQUIPMENT-All machinery and equipment, together with the necessary supplies for upkeep and maintenance, and also tools and apparatus necessary for the proper construction and acceptable completion of the work.

ESTIMATES-The official written itemization of the value of materials in place and work performed.

EXPRESSWAY-A divided arterial highway for through traffic with full or partial control of access and generally with grade separations at intersections.

EXTRA WORK-An item of work not provided for in the contract as awarded, but found essential to the satisfactory completion of the Contract within its intended scope. See further 104.3.

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FORCE ACCOUNT WORK ORDER-An order signed by the Engineer or an authorized representative, directing additional work to be performed, with payments based on labor, materials used, equipment cost, plus specified percentages.

FREEWAY-An expressway with full control of access.

FRONTAGE STREET OR ROAD-A local street or road auxiliary to and located on the side of an arterial highway for service to abutting property and adjacent areas, and for control of access.

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HIGHWAY-The entire improvement comprising the entire right-of-way. See definition for Road in Section 101.

HIGHWAY GRADE SEPARATION-Any structure carrying highway or street traffic over or under another highway or street.

HOLIDAYS-Official holidays are New Year's Day, Martin Luther King, Jr. Day, President's Day, Memorial Day, West Virginia Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving Day, Christmas Day, and any day in which an election (Primary or General) is held through the State and such other days as the President, Governor, or other duly constituted authority shall proclaim to be holidays. If a holiday falls on Sunday, the following Monday shall be observed in lieu thereof. If a holiday falls on a Saturday, the previous Friday shall be observed in lieu thereof.

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INSPECTOR-The Engineer's authorized representative assigned to make any or all necessary inspection of the work as further described in 105.10.

INSTRUCTIONS TO BIDDERS-The notice to Contractors containing all necessary information as to provisions, requirements, date and time of submitting Proposals.

INVITATION FOR BIDS-The advertisement for bids, as required by law, inviting bids for work to be performed or material to be furnished.

ITEM-A specifically described unit of work for which a price is provided in the contract.

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LABORATORY-The testing laboratories of the Division or any other testing laboratory designated by the Division.

LOT-A lot is an isolated quantity of specified material from a single source or a measured amount of specified construction assumed to be produced by the same process.

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MATERIALS-Any substances specified for use in the construction of the project and its appurtenances.

MATERIALS PROCEDURE-A procedure defining standard methods or guidelines for the inspection, sampling, testing, evaluation, and documentation of the Material's Division activities relative to the quality assurance program for materials, products, and processes. Each Materials Procedure is identified by the letters MP followed by seven digits, (i.e. MP XXX.XX.XX).

MEDIAN-The portion of a divided highway separating the traveled ways for traffic in opposite directions.

MEDIAN LANE-A speed-change lane within the median to accommodate left-turning vehicles.

MULTIPLE DEFICIENCY-A multiple deficiency is defined as a failure to meet specified requirements involving more than one characteristic of a material within the same lot.

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NOTICE TO PROCEED-Written notice to the Contractor to proceed with the contract work including, when applicable, the date of beginning of contract time.

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PARKING LANE-An auxiliary lane primarily for the purpose of vehicular parking.

PARKWAY-An arterial highway for non-commercial traffic, with full or partial control of access, and usually located within a park or a ribbon of parklike development.

PAVEMENT STRUCTURE-The combination of subbase, base course, and surface course placed on a subgrade to support the traffic load and distribute it to the roadbed.

PLANS-The approved Plans, profiles, typical cross sections, working drawings, standard drawings, and supplemental drawings, or exact reproductions thereof, which show the location, character, dimensions and details of the work to be done.

PRE-CONSTRUCTION CONFERENCE-A conference normally called by the District Engineer, following award and prior to start of construction, to be attended by Division officials and by the responsible officials of the Contractor and other affected parties.

PRE-QUALIFICATION STATEMENT-The approved form or forms upon which Contractors shall furnish information as to their ability to perform work, their experience, personnel, equipment and financial condition.

PROFILE GRADE-The trace of a vertical plane intersecting the top surface of the proposed wearing surface, usually along the longitudinal centerline of the roadway. Profile grade means either elevation or gradient of such trace according to the context.

PROJECT-The specific section of the highway, together with all appurtenances and construction to be performed, under the Contract.

PROJECT ENGINEER OR PROJECT SUPERVISOR-The representative of the Engineer on a project. See further 105.9.

PROPOSAL-The offer of a bidder, on the prescribed form, to perform the work and to furnish the labor and material at the prices quoted.

PROPOSAL FORM-The approved form on which the Division requires a bid to be prepared and submitted for the work.

PROPOSAL GUARANTY-The security furnished with a bid to guarantee that the bidder will enter into the Contract if their bid is accepted.

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RAILWAY-HIGHWAY SEPARATION-Any structure carrying highway traffic over or under the tracks of any railway.

RAMP-A connecting roadway between two intersecting highways, usually at a highway grade separation.

RIGHT-OF-WAY-A general term denoting land, property, or interest, usually in a strip, acquired for or devoted to a highway.

ROAD-A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way, or needed for the maintenance of travel. See West Virginia Code, Chapter 17, Article 1, Section 3.

ROADBED-The grade portion of a highway, within top and side slopes, prepared as a foundation for the pavement structure and shoulders.

ROADSIDE-A general term denoting the area adjoining the outer edge of the roadway. Extensive areas between the roadways of a divided highway may also be considered roadside.

ROADSIDE DEVELOPMENT-Those items necessary to the complete highway which provide for the preservation of landscape materials and features; the rehabilitation and protection against erosion of all areas disturbed by construction through seeding, sodding, mulching and the placing of other ground covers; such suitable planting and other improvements as may increase the effectiveness and enhance the appearance of the highway.

ROADWAY-The portion of the highway within limits of construction.

SEASONAL RESTRICTIONS-Limitations imposed on the work which prohibit the Contractor from performing certain types of work during specific seasons of the year.

SHOULDERS-The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of base and surface courses.

SIDEWALK-That portion of the roadway primarily intended for the use of pedestrians.

SINGLE DEFICIENCY-A single deficiency is defined as a failure to meet specified requirements involving one characteristic of a material.

SPECIAL PROVISIONS-Additions and revisions to the Standard and Supplemental Specifications covering conditions peculiar to an individual project.

SPECIALTY ITEM-An item of work designated as "Specialty Item" in the proposal that is limited to work which requires highly specialized knowledge, craftsmanship, or equipment that is not ordinarily available in contracting organizations prequalified to bid and is usually limited to minor components of the overall Contract.

SPECIFICATIONS-A general term applied to all directions, provisions, and requirements pertaining to performance of the work.

STATE-The State of West Virginia.

STREET-A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

STRUCTURES-Bridges, culverts, catch basins, drop inlets, retaining walls, cribbing, manholes, endwalls, buildings, sewers, service pipes, underdrains, foundation drains, and other features which may be encountered in the work and not otherwise classed.

SUBBASE-The layer or layers of specified or selected materials of designed thickness placed on a subgrade to support a base course.

SUBCONTRACTOR-An individual, firm, or corporation to whom the Contractor sublets part of the Contract.

SUBGRADE-The upper portion of a roadbed upon which the pavement structure and shoulders are constructed.

SUBSTANTIAL COMPLETION or SUBSTANTIALLY COMPLETE-The work on the Contract will be considered substantially complete when the Project could be opened continuously for the safe, convenient, and unimpeded use of the traveling public, or the Project has met the intention of the plans, as reasonably determined by the Engineer.

SUBSTRUCTURE-All that part of the structure below the bearings of simple and continuous spans, skewbacks of arches and tops of footings of rigid frames, together with the backwalls, wingwalls, and wing protection railings.

SUPERINTENDENT-The Contractor's authorized representative in responsible charge of the work.

SUPERSTRUCTURE-The entire structure except the substructure.

SUPPLEMENTAL AGREEMENT-A modification of the Contract covering changes in the Plans or quantities, or both, and establishing the basis of payment and time adjustment for the work necessitated by reason of the modification, requiring the signature of the Commissioner, the Contractor, and the Surety, or their authorized representatives.

SUPPLEMENTAL SPECIFICATIONS-Additions to and revisions of the Standard Specifications that are approved subsequent to issuance of the printed book. Supplemental Specifications prevail over Standard Specifications when in conflict therewith.

SURETY-The corporation, partnership, or individual, other than the Contractor, executing a bond furnished by the Contractor.

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TEMPORARY STRUCTURE-A structure required for the use of traffic or other purpose while construction is in progress and not to be retained as a part of the improvement.

TITLES-The titles or headings of the sections and subsections are intended for convenience of reference and shall not be considered as having any bearing on their interpretation except those titles and headings used in conjunction with the definition of terms.

TRAFFIC LANE-The portion of the roadway for the movement of a single line of vehicles.

TRAVELED WAY-The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

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WORK-Work shall mean the furnishing of all labor, materials, equipment, and other incidentals necessary or convenient to the successful completion of the project and the carrying out of all duties and obligations imposed by the contract.

WORKING DAY-Every day shown on the calendar, exclusive of Saturdays, Sundays, and Holidays as set forth in definitions for Holidays in Section 101, on which weather and other conditions not under the control of the Contractor will permit construction operations to proceed for a minimum of five hours with normal working forces engaged in performing the controlling item or items of work.

WORKING DRAWINGS-The Contractor shall submit to the Engineer all stress sheets, shop drawings, erection plans, falsework plans, framework plans, cofferdam plans, bending diagrams for reinforcing steel, or any other supplemental plans or similar data for the Engineer's use.

WORK ORDER-A written order, signed by the Engineer, requiring certain performance by the Contractor without negotiation. Such order shall not change quantities of major items beyond the twenty-five percent (25%) limitations, shall not create new items, nor make revisions to item prices.

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101.3-INTERPRETATIONS:

In order to avoid cumbersome and confusing repetition of expressions in these Specifications, it is provided that whenever anything is, or is to be done, if, as, or, when, or where "contemplated, required, determined, directed, specified, authorized, ordered, given, designated, indicated, considered necessary, deemed necessary, permitted, reserved, suspended, established, approval, approved, disapproved, acceptable, unacceptable, suitable, accepted, satisfactory, unsatisfactory, sufficient, insufficient, rejected, or condemned," it shall be understood as if the expression were followed by the words "by the Engineer" or "to the Engineer".

The Division may at its discretion issue to a Contractor a Proposal requiring prequalification in excess of the amount allotted the Contractor provided it considers that this Contractor is particularly fitted by reason of their experience or equipment, or both, to perform work of this type involved in an amount exceeding their prequalification limits and further provided that the prospective bidder furnish the Division with a letter from a reputable Surety advising of their willingness to furnish bond to the Contractor for the project.

When more than one project is advertised, Proposals will be issued on as many projects as the Contractor requests, providing the Contractor is qualified as above for each individual project, but no contracts will be awarded exceeding the permissible limit of the Contractor's prequalification rating except as otherwise provided in 103.1.

102.4-INTERPRETATION OF APPROXIMATE ESTIMATES:

The quantities appearing in the proposal form are approximate only and are prepared for the comparison of bids. Payment to the Contractor will be made only for the work accepted, or for materials furnished in accordance with the Contract. If upon completion of the construction the actual quantities show either increase or decrease, the unit bid prices offered in the Proposal will prevail except as further provided.

102.5-EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE OF WORK:

The bidder is required to examine carefully the Plans, Specifications, Supplemental Specifications, contract forms, and the site of the work contemplated. The submission of a bid shall be considered prima facie evidence that the bidder has made such examination and has judged for and satisfied themselves as to the character, quality, and quantity of work to be performed and material required to be furnished under the Contract.

102.6-PREPARATION OF PROPOSAL:

The bidders Proposal must be submitted through the Division's Bid Express Website. The bidder must furnish a unit price or a lump sum price as called for in the Proposal, in numerical figures, for each pay item listed, except that in the case of alternates, the bid may be made on only one alternate if so desired.

The Contractor or qualified and authorized agent shall use a digital signature as provided at law for the Proposal submission.

The proposal shall comply with West Virginia Contractor Licensing Act, Chapter 21, Article 11 Code of West Virginia, except that on Federal-Aid Projects a Contractor's license is not required at time of bid, but will be required before work can begin.

102.7-IRREGULAR PROPOSALS:

Proposals will be considered irregular and will be rejected for any of the following reasons:

SECTION 105 CONTROL OF WORK

105.1-AUTHORITY OF THE ENGINEER:

The Engineer will decide all questions which may arise as to the quantity, quality, and acceptability of materials furnished and work performed, and as to the rate of progress of the work; all questions which may arise as to the interpretation of the Plans and Specifications; and all questions as to the acceptable fulfillment of the Contract on the part of the Contractor. The decision of the Engineer will be final.

The Engineer will have the authority to suspend the work wholly or in part due to the failure of the Contractor to correct conditions unsafe for the employees or the general public, for failure to carry out orders, for such periods as the Engineer may deem necessary due to unsuitable weather, for conditions considered unsuitable for the prosecution of the work, or for any other condition or reason deemed to be in the public interest. All such suspension orders will be directed to the Contractor in writing.

The Engineer is not authorized to increase the obligation of the Division to any Contract except as provided.

105.2-PLANS AND WORKING DRAWINGS:

Approved Plans will show the location, profile, typical cross section, structures, except as specified, incidental items, and a summary of all items appearing in the Proposal. Any deviations which may be required by the exigencies of the construction will be determined by the Engineer and authorized by the Engineer in writing. The Contractor shall keep one set of approved Plans available on the work at all times.

Plans will show such details as are necessary to give a comprehensive idea of the construction contemplated. Any information which may be shown on drawings regarding results obtained from test piles or borings will be a record of conditions encountered at the place where such test piles were driven or borings were made, as nearly as these conditions could be interpreted by the Engineer observing the operations. The Contractor shall interpret the data in the light of their own experience. The Contractor is not bound to accept or rely on the data shown on the drawings, but may make such additional borings and investigations, including test piles, as the Contractor may desire in order to satisfy themselves concerning the lengths of piles and the conditions governing or entering into the construction of foundations.

The Plans will show the foundation depths and dimensions on which the estimate of quantities is based. These depths and foundation dimensions, however, are subject to such variations as may be necessary to secure a foundation satisfactory to the Engineer, and the right is expressly reserved to increase or diminish the dimensions and depths of the foundations as the Engineer may determine.

The Contractor shall submit to the Engineer all stress sheets, shop drawings, erection plans, falsework plans, framework plans, cofferdam plans, bending diagrams for reinforcing steel, or any other supplemental plans or similar data for the Engineers use.

any submittal which does not comply with the requirements of this Special Provision. The verification and distribution or rejection of Contractor approved shop drawings will normally require seven (7) calendar days after receipt of the drawings.

Additional certifications and/or slightly different wording of the above tow certification may be used if approval is given by the Legal Division. This approval must be obtained prior to any submission of contractor approved shop drawings. This approval may take up to thirty (30) days to be obtained. If this approval is obtained, a copy of the approval letter must be submitted with the first submission of shop drawings for distribution.

The Division shall reserve the right to review any submission of shop drawings or catalog sheets. This review shall not delay the contractor in the construction project or delay the distribution of the approved shop drawings or catalog sheets.

105.3-CONFORMITY WITH PLANS AND SPECIFICATIONS:

All work performed and all materials furnished shall be in reasonably close conformity with the lines, grades, cross sections, dimensions and material requirements, including tolerances, shown on the Plans or indicated in the Specifications.

Should the Engineer determine the materials, or the finished product do not conform to the Specifications or the Plans, the Engineer will then make a determination if the work will be accepted and remain in place in accordance with 106.3.1 and 106.7. In this event, the Engineer will document the basis of acceptance by contract modification which will provide for an adjusted payment. All nonconforming material or construction judged to be inadequate for the use intended shall be either reworked or removed and replaced at no expense to the Division.

Each supplemental agreement containing an adjusted price will also have added the sum of Two Hundred Dollars to each adjusted price, for the Divisions administration costs, to be deducted from monies due the Contractor.

105.4-COORDINATION OF PLANS, SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS, AND SPECIAL PROVISIONS:

These Specifications, the Supplemental Specifications, the Plans, Special provisions, and all Supplementary Documents are essential parts of the Contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy, calculated dimensions will govern over scaled dimensions; Supplemental Specifications will govern over Specifications; Plans will govern over Specifications and Supplemental Specifications; Special Provisions will govern over Specifications, Supplemental Specifications and Plans. When the plans provide that new work is to connect with existing structures, the Contractor must verify all dimensions with the Engineer before proceeding with the work.

The Specifications, Supplemental Specifications, and Special Provisions are in dual units. The first Primary unit is in English with the Metric unit

following in parentheses “()”. The Metric values are considered replacements for the English units and they are not conversions.

The Contractor shall take no advantage of any apparent error or omission in the Plans or Specifications. In the event the Contractor discovers such an error or omission, the Contractor shall immediately notify the Engineer. The Engineer will then make such corrections and interpretations as may be deemed necessary for fulfilling the intent of the Plans and Specifications.

105.5-COOPERATION BY CONTRACTOR:

The Contractor will be furnished One (1) complete set of plans and profile sheets, and one (1) set of Cross Sections upon request, without charge. The Contractor shall maintain on the Project at all times one complete set of Plans, Specifications, and Special Provisions.

The Contractor shall give the work the constant attention necessary to facilitate the progress thereof, and shall cooperate with the Engineer, their inspectors, other Contractors, and utilities in every way possible.

The Contractor shall have on the work at all times, as an agent, a competent superintendent capable of reading and thoroughly understanding the Plans and Specifications, and thoroughly experienced in the type of work being performed, who shall receive instructions from the Engineer or an authorized representatives. The Superintendent shall have full authority to execute orders or directions of the Engineer without delay, and to promptly supply such materials, equipment, tools, labor, and incidentals as may be required. Such superintendence shall be furnished irrespective of the amount of work sublet.

The Contractor shall furnish to the Engineer a list of addresses and telephone numbers of their personnel who may be reached in case of emergency during hours when no work is to be performed. On weekends, holidays, during suspensions of work, and during storms the Contractor shall alert certain of their personnel to stand by and shall inform the Engineer of arrangements so made.

The Contractor shall provide all reasonable facilities and furnish the Division the information, assistance and samples required by the Engineer and Inspector for proper inspecting or testing of materials and workmanship.

On some contracts it may be necessary, to insure proper coordination between the work of the Contractor and the work of various utilities, to hold a pre-construction utility meeting. The Division will arrange for the affected utilities to be present. The Contractor or their representative, authorized to make decisions for them in regard to the scheduling of the proposed work, is required to attend the meeting. A report of the pre-construction utility meeting will be prepared and distributed by the Engineer to all represented at the meeting.

105.6-COOPERATION WITH UTILITIES:

The Division will notify all utility companies, all pipe line owners, or other parties affected, and endeavor to have all necessary adjustments of the public or private utility fixtures, sewers, pipe lines, and other appurtenances within or adjacent to the limits of construction, made as soon as practicable.

Water lines, gas lines, wire lines, sewer lines, service connections, water and gas meter boxes, water and gas valve boxes, light standards, cableways, signals, and all other utility appurtenances within the limits of the proposed construction which are to be relocated or adjusted are to be moved by the owners

with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

In the event the Engineer finds further coordination effort is necessary, the Engineer shall call a meeting of the Contractors involved. After the meeting has been held, the Engineer may notify the Contractors of the action required of each and the Engineer's decision shall be final.

105.8-CONSTRUCTION STAKES, LINES AND GRADES:

Except when "Construction Layout Stakes", is included in the Contract, the Engineer will set construction stakes establishing lines, slopes and continuous profile-grade, together with necessary reference stakes and bench marks. The Engineer will set sufficient right-of-way stakes to define the right-of-way limits. The Engineer will set stakes to mark centerline and establish bench marks for bridges and special structures as may be considered necessary.

The stakes and marks in the paragraph above shall constitute field control by and in accordance with which the Contractor shall establish all additional stakes and marks necessary to secure a correct layout of all the work. All stakes, except those set by the Engineer, shall be furnished by the Contractor. The Contractor shall not engage the services of any person or person in the employ of the Division for the performance of any of the Contractor's layout work.

The Contractor shall be responsible for having the finished work in reasonably close conformity with the lines, grades, elevations, and dimensions called for on the Plans or established by the Engineer. The Contractor shall be held responsible for the preservation of stakes, marks, and references, and shall have them reset at the Contractor's expense when they are damaged, lost, displaced, or removed.

105.9-AUTHORITY AND DUTIES OF THE PROJECT ENGINEER OR PROJECT SUPERVISOR:

The project Engineer or Supervisor has immediate charge of the engineering details of each construction project. The Engineer or Supervisor are responsible for the administration and satisfactory completion of the project.

The Project Engineer or Supervisor has the authority to reject defective material and to suspend any work that is being improperly performed.

The Project Engineer or Supervisor will have the authority to suspend the work wholly or in part due to the failure of the Contractor to correct conditions unsafe for the employees or the general public; for failure to carry out provisions of the Contract; for failure to carry out orders; for such periods as they may deem necessary due to unsuitable weather. All such suspension orders will be directed to the Contractor in writing. The suspension of the work for the above reasons does no relieve the Contractor of their responsibility according to 107.16.

105.10-AUTHORITY AND DUTIES OF THE INSPECTOR:

Inspectors employed by the Division will be authorized to inspect all work done and materials furnished. Such inspection may extend to all or any part of the work and to the preparation, fabrication or manufacture of the materials to be used. The Inspector is not authorized to alter or waive the provisions of the Contract. The Inspector is authorized to call the attention of the Contractor to any failure of the work or materials to conform to the Specifications and Contract.

The Inspector is authorized to reject materials which do not meet specification requirements or suspend the portion of the work involved until any question at issue can be referred to the Project Engineer or Project Supervisor. The Inspector is not authorized to issue instructions contrary to the Plans and Specifications. The Inspector shall not act as foreman or perform other duties for the Contractor, nor interfere with the management of the work by the latter.

105.11-INSPECTION OF WORK AND MATERIALS:

All materials and each part or detail of the work shall be subject to inspection by the Engineer. The Engineer or a representative shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection. To facilitate the inspection of materials, all delivery tickets shall contain as a minimum the information required in MP 700.00.01.

At the Engineer's request, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the Specifications. Should the work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed shall be at the Contractor's expense.

Any work done or materials used without supervision or inspection by an authorized Division representative may be ordered removed and replaced at the Contractor's expense. Failure to reject any defective material or work shall not in any way prevent later rejection when such defects are discovered, nor obligate the Division to final acceptance.

When any unit of government or political subdivision or any railroad corporation is to pay a portion of the cost of the work covered by this Contract, its respective representatives shall have the right to inspect the work. Such inspection shall in no sense make any unit of government or political subdivision or any railroad corporation a party to this Contract, and shall in no way interfere with the rights of either party hereunder.

No work shall be done at night, Saturdays, Sundays, or Holidays without documented prior approval of the Engineer.

105.12-REMOVAL OF UNACCEPTABLE AND UNAUTHORIZED WORK:

Except as provided in 105.3, all work which does not conform to the requirements of the Contract will be considered as unacceptable work.

Unaccepted work, whether the result of poor workmanship, use of defective materials, damage through carelessness or any other cause, found to exist prior to the final acceptance of the work, shall be removed immediately and replaced in an acceptable manner.

Unacceptable material shall be removed from the job site.

No work shall be done without lines and grades having been given or approved by the Engineer. Work done contrary to the instructions of the Engineer, work done beyond the lines shown on the Plans, or as given, except as specified, or any extra work done without authority, will be considered as

unauthorized and will not be paid for under the provisions of the Contract. Work so done may be ordered removed or replaced at the Contractor's expense.

Upon failure on the part of the Contractor to comply promptly with any order of the Engineer, made under the provisions of this Subsection, the Engineer will have authority to cause unacceptable work to be remedied or removed and replaced and unauthorized work to be removed, and to deduct the costs from any monies due or to become due the Contractor.

105.13-LOAD RESTRICTIONS:

The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads. A special permit will not relieve the Contractor of liability for damage which may result from the moving of equipment.

The operation of equipment of such weight or so loaded as to cause damage to structures or the roadway or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base or structure before the expiration of the curing period. In no case shall legal load limits be exceeded unless permitted in writing. The Contractor shall be responsible for all damage done by their own equipment.

105.14-MAINTENANCE DURING CONSTRUCTION:

The Contractor shall maintain the work during construction and until the project is accepted except as otherwise provided in 105.16.1. This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces to the end that the roadway and structures are kept in satisfactory condition at all times.

In the case of a Contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations.

All cost of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various pay items, and the Contractor will not be paid an additional amount for such work except as otherwise provided in 104.5.

105.15-FAILURE TO MAINTAIN ROADWAY OR STRUCTURE:

If the Contractor, at any time, fails to comply with the provisions of 105.14, the Engineer will immediately notify the Contractor of such non-compliance. If the Contractor fails to remedy unsatisfactory maintenance within 24 hours after receipt of such notice, the Engineer may immediately proceed to maintain the project, and the entire cost of maintenance will be deducted from monies due or to become due the Contractor on their Contract.

105.16-ACCEPTANCE:

105.16.1-Partial Acceptance: If at any time during the prosecution of the project, the Contractor completes a unit or portion of the project, such as a structure, an interchange, or a section of road or pavement, the Contractor may request the Engineer to make final inspection of that unit. If the Engineer finds upon inspection that the unit has been completed in compliance with the

as provided in 652 without additional compensation. Where practicable, borrow pits, gravel pits, and quarry sites shall be located so they will not be visible from the highway.

In accordance with the agreement between the Division of Highways and the Division of Environmental Protection, the Contractor cannot furnish material from borrow areas outside the right of way for any other public or private use.

106.3-SAMPLES, TESTS, CITED SPECIFICATIONS:

All materials will be inspected, tested and approved prior to incorporation into the work. Any work which incorporates materials prior to the above evaluation shall be performed at the Contractor's risk, and may subsequently be considered as unacceptable. Unless otherwise specified, the materials shall meet the applicable Standard or Interim Specifications of the American Association of State Highway and Transportation Officials, the Standard or Tentative Specifications of the American Society for Testing and Materials, or Standards adopted by other specifying agencies, with preference given in the same order in which the above agencies are listed. The specification which is current at the time of advertisement for bids shall govern, except that, with the approval of the Engineer, subsequent revisions or adoptions may govern. All materials being used are subject to inspection, testing or rejection at any time prior to final acceptance of the completed work.

The Contractor shall be responsible for the quality of construction and materials incorporated. When called for in the Specifications, the Contractor shall perform all necessary process control inspection, sampling and testing. All materials will be approved for acceptance through the Division's acceptance procedures. The Division has the exclusive right and responsibility for determining the acceptability of the construction and materials incorporated. The Division may use the results of the Contractor's inspection, sampling and testing for acceptance purposes.

Lot or subplot sizes will normally be designated. In the event that operational conditions cause work to be interrupted, or only partially completed before the lot size designated has been achieved, the lot or subplot may be redefined by the Engineer as being either the amount of work accomplished within the day or that work partially completed combined with the next lot or subplot of work. It is the intent of these Specifications that the number of samples required to evaluate each lot or subplot will be unchanged even when the lot or subplot is redefined.

When an acceptance plan is cited, it shall be in accordance with 106.3.1.

106.3.1-Acceptance Plans:

106.3.1.1-Percent Within Tolerance: The percentage of each lot or subplot of material, product, item of construction, or completed construction within the specified tolerances will be determined by the procedures as referenced by the specification requirements. When West Virginia AP-A is referenced, it will consist of Tables 106-1 to 106-5 inclusive, published in MP 106.00.20.

106.3.1.2-Sampling of Reworked Lots or Sublots: It is the intent of these Specifications that lots or sublots of materials, products, items of construction or completed construction meet specification requirements at the time of submission. Lots or sublots generally will not be resampled unless reworked before submission. Sampling after reworking will be at the expense of the Contractor.

106.4-PLANT INSPECTION:

The Engineer may undertake the inspection of materials at the source.

In the event plant inspection is undertaken, the following conditions shall be met:

- i. The Engineer shall have the cooperation and assistance of the Contractor and the producer with whom the Contractor has contracted for materials.
- ii. The Engineer shall have full entry at all times to such parts of the plant as may concern the manufacture or production of the materials being furnished.
- iii. Adequate safety measures are to be provided and maintained.

The Division reserves the right to retest all materials, which have been tested and accepted at the source of supply, after the materials have been delivered to the project and prior to incorporation into the work and to reject all materials which, when retested, do not meet the requirements of these Specifications or those established for the specific project.

106.5-STORAGE OF MATERIALS:

Materials shall be so stored as to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located so as to facilitate their prompt inspection. Approved portions of the right-of-way may be used for storage purposes and for the placing of the Contractor's plant and equipment, but any additional space required therefore must be provided by them at their expense. Private property shall not be used for storage purposes without written permission of the owner or lessee, and if requested by the Engineer, copies of such written permission shall be furnished. All storage sites shall be restored to their original condition by the Contractor at their expense. This shall not apply to the stripping and storing of topsoil, or to other materials salvaged from the work.

Care shall be exercised to protect finished concrete surfaces from being stained from storing or placing materials, including but not limited to reinforcing bars or mesh or unpainted structural steel, on same. Any such material so stored shall be adequately protected from weather. Any stains resulting from storage of materials on finished concrete surfaces shall be removed by the Contractor at their expense.

Aggregate stockpiles may be made on ground that is denuded of vegetation, hard, and well drained. If necessary, the ground shall be covered with two inch (50 mm) plank. Different kinds and sizes of aggregates shall be kept separate during transportation, handling, and storage until batched. If necessary,

partitions of suitable height and strength shall be constructed between stockpiles to prevent different materials from becoming mixed. Care must be taken to prevent segregation of the coarse and fine particles of aggregates from taking place during handling or hauling. The inclusion of foreign materials will not be permitted. Aggregates placed directly on the ground shall not be removed from the stockpiles within one foot (300 mm) of the ground until the final cleaning up of the work, and then only the clean aggregate will be permitted to be used.

106.6-HANDLING MATERIALS:

All materials shall be handled in such manner as to preserve their quality and fitness for the work. Aggregates shall be transported from the storage site to the work in tight vehicles, so constructed as to prevent loss or segregation of materials after loading and measuring, in order that there may be no inconsistencies in the quantities of materials intended for incorporation in the work as loaded and the quantities as actually received at the place of operations.

106.7-UNACCEPTABLE MATERIALS:

106.7.1-Acceptance or Rejection: Following the application of the appropriate acceptance plan, the decision of the Engineer will be final as to the acceptance, rejection, or acceptance at an adjusted price of sampled lots or sublots.

106.7.2-Disposition of Lots or Sublots: Lots or sublots not conforming to specification requirements may be reworked or removed and replaced and resubmitted for acceptance. All nonconforming lots or sublots evaluated as unsatisfactory for the use intended shall be reworked or removed and replaced and resubmitted for acceptance. When the evaluation indicates the lots or sublots may satisfactorily remain in place, acceptance will be an adjusted price as stated in the Specifications or as directed by the Engineer.

106.8-DIVISION-FURNISHED MATERIAL:

The Contractor shall furnish all materials required to complete the work, except those specified to be furnished by the Division.

Materials furnished by the Division will be delivered or made available to the Contractor at the points specified in the Contract.

The cost of handling and placing all materials after they are furnished to the Contractor shall be considered as included in the contract price for the item in connection with which they are used.

The Contractor will be held responsible for all material delivered to them, and deductions will be made from any monies due the Contractor to make good any shortages and deficiencies, from any cause whatsoever, and for any damage which may occur after such delivery, and for any demurrage charges.

106.9-SILENCE OF SPECIFICATIONS:

The apparent silence of these Specifications, Supplemental Specifications, plans and Special Provisions as to any detail, or the apparent omission from them of a detailed description concerning any point shall be regarded as meaning that only material and workmanship of acceptable quality are to be used.

SECTION 107
LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

107.1-LAWS TO BE OBSERVED:

The Contractor shall keep fully informed of all Federal and State laws, all local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. The Contractor shall at all times observe and comply with all such laws, ordinances, regulations, orders and decrees; and shall protect and indemnify the State and its representatives against any claim or liability arising from or based on the violation of any such laws, ordinances, regulations, orders, or decrees, whether by themselves, their subcontractors or their employees.

107.2-PERMITS, LICENSES AND TAXES:

The Contractor shall procure all permits and licenses, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful prosecution of the work.

107.3-PATENTED DEVICES, MATERIALS, AND PROCESSES:

If the Contractor employs any design, device, material, or process covered by letters of patent or copyright, the Contractor shall provide for such use by suitable legal agreement with the patentee or owner. The Contractor and the surety shall indemnify and save harmless the Division, and affected third party, or political subdivision from and claims for infringement by reasons of the use of any such patented design, device, material or process, or any trademark or copyright, and shall indemnify the Division for any costs, expenses, and damages which it may be obligated to pay by reason of any infringement, at any time during the prosecution or after the completion of the work.

107.4-RESTORATION OF SURFACES OPENED BY PERMIT:

The right to construct or reconstruct any utility service in the highway or street or to grant permits for same, at any time, is expressly reserved by the Division for the proper authorities of the municipality in which the work is done, and the Contractor shall not be entitled to any damages either for the digging up of the street or for any delay occasioned.

Any individual, firm, or corporation wishing to make an opening in the highway must secure a permit from the Division. The Contractor shall allow parties bearing such permits, and only those parties, to make openings in the highway. The Contractor shall, when ordered by the Engineer, make in an acceptable manner all necessary repairs due to such openings and such necessary work will be paid for as "Extra Work", or as provided in these Specifications, and will be subject to the same conditions as original work performed.

107.5-FEDERAL-AID PROVISIONS:

When the United States Government pays any portion of the cost of a project, the Federal Laws and the Rules and Regulations made pursuant to such laws must be observed by the Contractor, and the work shall be subject to the inspection of the appropriate Federal Agency.

107.12-PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE:

The Contractor shall be responsible for the preservation of all public and private property and shall protect carefully from disturbance or damage all land monuments and property marks until the Engineer has witnessed or otherwise referenced their location and shall not move them until directed.

The Contractor shall be responsible for all damage or injury to property of any character, during the prosecution of the work, resulting from any act, omission, neglect, or misconduct in the Contractor's manner or method of executing the work, or at any time due to defective work or materials, and this responsibility will not be released until the project shall have been completed and accepted.

When or where and direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the nonexecution thereof by the Contractor, the Contractor shall restore, at their own expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding, or otherwise restoring as may be directed, or the Contractor shall make good such damage or injury in as acceptable manner.

107.13-FOREST PROTECTION:

In carrying out work within or adjacent to State or National Forests, the Contractor shall comply with all regulations of the State Fire Marshall, Division of Natural Resources, or any other authority having jurisdiction, governing the protection of forests and the carrying out of work within forests, and shall observe all sanitary laws and regulations with respect to the performance of work in forest areas. The Contractor shall keep the areas in an orderly condition, dispose of all refuse, obtain permits for the construction and maintenance of all construction camps, stores, warehouses, residences, latrines, cesspools, septic tank, and other structures in accordance with the requirements of the Forest Supervisor.

The Contractor shall take all reasonable precaution to prevent and suppress forest fires and shall require their employees and subcontractors, both independently and at the request of forest officials, to do all reasonably within their power to prevent and suppress and to assist in preventing and suppressing forest fires and to make every possible effort to notify a forest official at the earliest possible moment of the location and extent of any fire seen by them.

107.14-RESPONSIBILITY FOR DAMAGE CLAIMS:

The Contractor shall indemnify and save harmless the Division, its officers and employees, from all suits, actions, or claims of any character brought because of any injuries or damage received or sustained by any person, persons, or property on account of the operations of the Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of the Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the "Worker's Compensation Act," or any other law, ordinance, order, or decree; and so much of the money due the Contractor under and by virtue of their Contract as may be

At points where the Contractor's operations are adjacent to properties of railway, telegraph, telephone, and power companies, or are adjacent to other property, damage to which might result in considerable expense, loss, or inconvenience, work shall not be commenced until all arrangements necessary for the protection thereof have been made.

The Contractor shall cooperate with the owners of any underground or overhead utility lines in their removal and rearrangement operations in order that these operations may progress in a reasonable manner, that duplication of rearrangement work may be reduced to a minimum, and that services rendered by those parties will not be unnecessarily interrupted.

In the event of interruption to water or utility services as a result of accidental breakage, or as a result of being exposed or unsupported, the Contractor shall promptly notify the proper authority and shall cooperate with such authority in the restoration of service. If water service is interrupted, repair work shall be continuous until the service is restored. No work shall be undertaken around fire hydrants until provisions for continued service have been approved by the local fire authority.

107.18-FURNISHING RIGHT-OF-WAY:

The Division will be responsible for securing all necessary right-of-way in advance of construction. Any exceptions will be indicated in the Contract.

107.19-PERSONAL LIABILITY OF PUBLIC OFFICIALS:

In carrying out any of the provisions of these Specifications, or in exercising and power or authority granted to them by or within the scope of the Contract, there shall be no liability upon the Commissioner, Engineer, or their authorized representatives, either personally or as officials of the State, it being understood that in all such matters they act solely as agents and representatives of the Division.

107.20-NO WAIVER OF LEGAL RIGHTS:

The Division shall not be precluded or estopped by any measurement, estimate, or certificate made either before or after the completion and acceptance of the work and payment therefor, from showing the true amount and character of the work performed and materials furnished by the Contractor, nor from showing that any such measurement, estimate or certificate is untrue or is incorrectly made, nor that the work or materials do not in fact conform to the Contract. The Division shall not be precluded or estopped, notwithstanding and such measurement, estimate, or certificate and payment in accordance therewith, from recovering from the Contractor or sureties, or both, such damage as it may sustain by reason of their failure to comply with the terms of the Contract. Neither the acceptance by the Division or any representative of the Division, nor any payment for or acceptance of the whole or any part of the work, nor any extension of time, nor any possession taken by the Division, shall operate as a waiver of any portion of the Contract or of any power reserved or of any right to damages. A waiver of any breach of the Contract shall not be held to be a waiver of any other or subsequent breach.

SECTION 109 MEASUREMENT AND PAYMENT

109.1-MEASUREMENT OF QUANTITIES:

All work completed under the Contract will be measured by the Engineer according to United States standard measure.

The method of measurement and computations to be used in determining of quantities of materials furnished and of work performed under the Contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise indicated, the requirements prescribed shall govern.

Earthwork will be computed by the average end area method, using the horizontal length measured along the centerline as the distance between sections, applying corrections for curvature where the apparent error exceeds 25 percent of the volume in any one cut. Other acceptable methods may be used.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally and no deductions will be made for individual fixtures having an area of nine square feet (one square meter) or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the Plans or ordered in writing by the Engineer.

Structures will be measured according to neat lines shown on the Plans or as altered to fit field conditions.

All items which are measured by the linear foot (meter), such as pipe culverts, guardrail, underdrains, etc., will be measured parallel to the base or foundations upon which such structures are placed.

The term "gage" when used in connection with the measurements of plates, will mean the U.S. Standard Gage.

The galvanized sheet thicknesses to be used in the manufacture of metal cribbing, corrugated steel culvert pipe, underdrain pipe, plate pipe, pipe arches, plate pipe arches and plate arches shall be as specified in AASHTO M 36 or AASHTO M 167. The sheet thicknesses to be used in the manufacture of corrugated aluminum alloy culvert pipe, underdrain pipe, plate pipe, pipe arches, plate pipe arches and plate arches shall be as specified in AASHTO M 196 or AASHTO M 219.

The "size number" used in the measurement of wire will be as specified in AASHTO M 32 or AASHTO M 225.

The term ton will mean the short ton consisting of 2,000 lb (The term megagram is defined as a mass of 1,000 kg). All materials which are measured or proportioned by weight shall be weighed on approved scales by competent, qualified personnel. Scales for weighing shall be of either the beam type, springless-dial type or digital recorder type. All plant and truck scales and metering devices shall be inspected, approved and sealed in accordance with the requirements of the West Virginia Division of Labor, Bureau of Weights and Measures, or other appropriate agencies of the State or its political subdivisions. Poles shall be designed to be locked in any position to prevent unauthorized changes. When the beam type scales are used, provisions for a "telltale" dial shall be made for indicating to the operator that the required load in the weighing hopper is being approached. A device on the weighing beams shall clearly indicate the critical position.

Truck scales shall be provided by the producer or Contractor, except that truck scales are not required where the material is weighed at properly calibrated automatic batching plant facilities which are equipped with digital print-out equipment. The scales shall be of sufficient size and capacity to weigh the heaviest loaded trucks that are used for delivery of the material. All truck scales shall be mounted on solid foundations which will ensure their remaining plumb and level.

A weigh person shall be provided by the producer. The weigh person shall certify that the weight of the material, as determined either by the truck scales or from the digital print-out of the weights, is correct. To signify the certification of weight the weigh person must either sign their full name on each ticket, or if the ticket printer prints the weigh person's full name they must at least initial each ticket.

Each truck shall be weighed empty prior to each load, except at automatic batch plants approved to operate without truck scales. A digital recorder shall be required on all truck scales. The digital recorder shall produce a printed record of the gross, tare and net weights, and the time, date, truck identification and project number. Provision shall be made for constant zero compensation and further provision shall be made so that the scales may not be manually manipulated during the printing process. The system shall be interlocked so as to allow printing only when the scale has come to rest.

In case of a breakdown of the automatic equipment, the Engineer may permit manual operation for a reasonable time, normally not to exceed 48 hours, while the equipment is being repaired.

If material is shipped by rail, the car weight may be accepted provided the actual weight of material only will be paid for. However, car weights will not be acceptable for material to be passed through mixing plants.

Devices, used to meter or measure component or other materials in a simultaneous manner, shall be located so as to be readily accessible and visible to a single Inspector, unless otherwise directed by the Engineer.

Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured at the point of delivery. Vehicles for this purpose may be of any size or type acceptable to the Engineer, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery.

When approved by the Engineer, material specified to be measured by the cubic yard (meter) may be weighed and these weights converted to cubic yard (meter)s for payment purposes. Further, when it is impractical to measure the material by weighing, or in its original position, the material will be measured in its final position and adjusted by a volume change factor. These conversion factors will be determined by the Engineer and shall be agreed to by the Contractor before these methods of measurement are used.

When bituminous material is measured by volume, the measured volume at loading temperature shall be converted to volume at 60° F (15° C) using the temperature correction factors in 705 for asphaltic materials and 706 for tar materials, except that when volume is measured by an approved temperature compensated metering device, no further volume correction for temperature shall be required. When bituminous material is measured by weight, the actual specific

gravity, API gravity, or weight per gallon (liter) of the material shall be used to convert the measured weight to volume at 60° F (15° C). The Contractor shall furnish all information necessary as determined solely by the Division to determine the amount of bituminous material actually incorporated into the project.

Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when bituminous material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the work.

When bituminous materials are shipped by truck or transport, net certified weights or volume, subject to correction for loss or foaming may be used for computing quantities.

Cement will be measured by the cwt (hundredweight = 100 lb) (kilogram). For the purpose of determining the total amount used in the mixture, one bag of cement shall be considered as weighing 0.94 cwt (42.64 kg), and one barrel of cement shall be considered as weighing 3.76 cwt (175.55 kg).

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

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

When a complete structure or structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gage, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

109.2-SCOPE OF PAYMENT:

The Contractor shall receive and accept compensation provided for in the Contract as full payment for furnishing all materials and for performing all work under the Contract in a complete and acceptable manner and for all risk, loss, damage, or expense of whatever character arising out of the nature of the work or the prosecution thereof, subject to the provisions of 107.20.

If the "Basis of Payment" clause in the Specifications relating to any unit price in the bid schedule requires that the unit price cover and be considered compensation for certain work or material essential to the item, this work or material will not also be measured or paid for under any other pay item which may appear elsewhere in the Specifications, except as provided in 104.6.

When the Contract specifies payment of an item or a portion of an item on a plan quantity basis, the quantities for payment will be those shown on the Plans with deductions from or additions to such quantities resulting from authorized deviations from the Plans.

If the Contractor believes that a quantity which is specified for payment on a plan quantity basis is incorrect, the Contractor may request the Division in writing to check the questionable quantity. The request shall be accompanied by calculations, drawing, or other evidence indicating why the plan quantity is believed to be in error. If the plan quantity is found to be in error, payment will be made in accordance with the corrected plan quantity.

The Division reserves the right to check the quantity of an item which is specified for payment on a plan quantity basis if there is reason to believe that it is inaccurate. If the quantity is found to be in error, payment will be made in accordance with the corrected plan quantity.

Should the Division determine during construction that conditions have varied from those anticipated in design to the extent that actual measurement of a plan quantity item is warranted, the Division will make such measurement, and payment will be based in lieu of the plan quantity.

109.2.1-General Basis of Adjusted Payment:

109.2.1.1-Single Deficiency: In the case of the single characteristic deficiency, the resulting deficiency shall be used directly to determine an adjusted price.

109.2.1.2-Multiple Deficiency: In the case of a multiple deficiency, the related adjusted percentage of contract price as determined by the acceptance plan for each characteristic shall be determined and the resulting percent of contract price to be paid shall be the product of these related adjusted percentages.

109.2.2-Basis of Charges for Additional Testing: When additional acceptance testing is performed by the Division for reworked lots or sublots in accordance with 106.3.1.2, the cost of such testing will be deducted on current estimates from the amount due the Contractor by the Division. The cost of such testing will be determined in accordance with the unit costs per test as shown in Table 9-1, published in MP 109.00.20.

109.3-COMPENSATION FOR ALTERED QUANTITIES:

When the accepted quantities of work vary from the quantities in the bid schedule, the Contractor shall accept as payment in full, so far as contract items are concerned, payment at the original contract unit price for the accepted quantities of work done. No allowance except as provided in 104.2 will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor resulting either directly from such alterations or indirectly from unbalanced allocation among the contract items of overhead expense on the part of the bidder and subsequent loss of expected reimbursements therefore or from any other cause.

Increased work involving supplemental agreements will be paid for as stipulated in such agreements. The Contractor shall furnish substantiating data required in the preparation of these agreements.

The "C" values given per gallon of Liquid Asphalt Material is based on the use of an emulsion which is assumed to contain 65% asphalt material and a gallon of emulsion weights 8.43 pounds of a liter of emulsion weights 1.00 kg. If a cut-back asphalt is used "C" as given in the above table must be multiplied by 1.54 to arrive at a modified "C" factor for use in the formula. No change will be made in the Adjustable Material Cost (C) for variations between these assumptions and actual factors.

The adjustable materials costs (C₁) and (C₂) are based on the approved job mix formula for the specific asphalt mixture being placed in accordance with the following formulae:

$$(C_1) = I_b \times A_c \times 1 \text{ ton or } [(C_1) = I_b \times A_c \times 1 \text{ megagram}]$$

Where A_c equals the approved asphalt content expressed in decimals, i.e. 5.8% asphalt content equals 0.058. When reclaimed asphalt pavement (RAP) is used in the mix, A_c is the % virgin or new asphalt added to the mix.

$$(C_2) = I_b \times A_c \times 1.6 \text{ tons/cy or } [(C_2) = I_b \times A_c \times 1.9 \text{ mg/m}^3 \times 1 \text{ meter}]$$

where A_c equals approved asphalt content expressed in decimals and it is assumed that a cubic yard of asphalt treated open-graded free draining base weights 1.6 tons or 1.9 Mg. No change will be made in C₂ for variations between this assumption and the actual factor.

109.11 THROUGH 109.19-BLANK:

109.20-LOAD LIMIT VIOLATIONS AND WEIGH TICKETS:

The Allowable Gross Weight for any vehicle being used to haul materials on publicly maintained highways under the terms of this contract shall be as follows.

Title 23 Code of Federal Regulations, Section 658.17, establishes maximum allowable gross weight on the Interstate System. The maximum allowable gross weight on WV and US Routes will be as established in Chapter 17C, Articles 17 and 17A of the Official Code of West Virginia, as amended. The Public Service Commission, Weight Enforcement Section is responsible for the enforcement of these provisions.

A weigh ticket shall be required with each load of material from a commercial source which would normally have truck scales. This includes, but is not limited to, all asphalt paving materials and all aggregates regardless of the contract pay unit. The weigh ticket shall include gross, tare, and net weights, time and date of loading, Item Number or Description of Materials, Contract Number or Project Number, number of axles on haul unit, license number of haul unit, and signature of the weigher certifying that all information on the ticket is correct. If the weigher's name is printed by the computer on the ticket, then it only needs to be initialed by the weigher.

For material from a commercial source or a batch plant, which would not normally have truck scales, a weigh ticket documenting the tare weight, number of axles on the haul unit, license number of haul unit, date weighed, location of

scales, and signature of the weigher certifying that all information on the ticket is correct, may be supplied for each haul unit as an alternate to the ticket required in the previous paragraph. The tare weight ticket shall be supplied for each contract on a yearly basis and when modifications are made to the vehicle or combination of vehicles. The weight of the material delivered shall be calculated and furnished by the vendor/supplier shipping the material to the project site or DOH facility. This includes, but is not limited to, concrete, structural steel, piling, reinforcing steel and all prepackaged material of known weight, such as cement, grout, fertilizer, lime, abrasives, etc.

If the haul unit is a combination of vehicles, the license number shall be supplied for each component. The tare weight shall be for the complete haul unit.

All weighing shall be done on scales approved and sealed by the West Virginia Division of Labor, Bureau of Weights and Measures. If the scales are moved or upon the request of the Engineer, the scales shall be reapproved and sealed. The Engineer shall be notified of any scale malfunctions. The Division of Highways may, at its option, accept inspection and sealing by out of state agencies when the material is being loaded outside West Virginia.

Any material, covered by this provision, which is delivered without the proper weigh ticket shall not be accepted by the Division of Highways.

Nothing in this provision relieves any party from compliance with the State Law on load limits or any fines which may be assessed for violation of said law.

NOTES: