

SECTION 100-149 GENERAL SPECIFICATIONS

Section 101 - Abbreviations

101.01
Organizations &
Standards

Whenever in these specifications, or in other contract documents, the following terms, or pronouns in place of them, are used, the intent and meaning shall be interpreted as follows. Reference to a specific standard or specification shall mean the latest edition or amendment in effect on date of invitation to bid.

AASHTO--American Association of State Highway and Transportation Officials

ACI--American Concrete Institute

AISC--American Institute of Steel Construction

AISI--American Iron and Steel Institute

AITC--American Institute of Timber Construction

ANSI--American National Standards Institute

APA--American Plywood Association

API--American Petroleum Institute

ASME--American Society of Mechanical Engineers

ASTM--American Society for Testing and Material

ATCC--American Type Culture Collection

AWPA--American Wood Preservers Association

AWPB--American Wood Preservers Bureau

AWS--American Welding Society

AWWA--American Water Works Association

CFR--Code of Federal Regulations

CRSI--Concrete Reinforcing Steel Institute

CS--Commercial Standard issued by U.S. Department of Commerce

DEMA--Diesel Engine Manufacturers Association

FAR--Federal Acquisition Regulation

FED SPEC. or FS--Federal Specifications

FSS--Federal Specifications and Standards

GSA--General Services Administration

MIL--Military Specifications

MSHA--Mine Safety and Health Administration

MUTCD--Manual on Uniform Traffic Control Devices

NBFU--National Board of Fire Underwriters

NBS--National Bureau of Standards

NEMA--National Electrical Manufacturers Association

NESC--National Electrical Safety Code

NFPA--(Fire)--National Fire Protection Association
 NFPA--(Forest)--National Forest Products Association
 NWMA--National Woodwork Manufacturers Association
 OSHA--Occupational Safety and Health Administration
 PCA--Portland Cement Association
 PCI--Prestressed Concrete Institute
 PS--Product Standard issued by the U.S. Department of Commerce
 PTI--Post-Tensioning Institute
 RIS--Redwood Inspection Service
 SAE--Society of Automotive Engineers
 SF--Standard Form
 SSPC--Steel Structures Painting Council
 UL--Underwriter's Laboratories, Inc.
 USASI--United States of America Standards Institute
 WCLIB--West Coast Lumber Inspection Bureau
 WWPA--Western Wood Products Association

101.02
 Pay Items
 & Pay Units

ABBREVIATIONS

Aluminum	AL.
Asphalt	ASP.
Barbed Wire	B.W.
Bituminous Coated Corrugated Steel Pipe	B.C.C.S.P. OR B.C.C.S. PIPE
Cement	CEMT.
Cement Treated	CEMT.-T.
Cement Treated Base	CTB
Clearing & Grubbing	CLEAR & GRUB
Compaction	CMPCT.
Concrete	CONC.
Corrugated Metal Pipe	CMP
Corrugated Steel Pipe	C.S.P.
Corrugated Steel Pipe Arch	C.S.P. ARCH
Cubic Yard	C.Y.
Cubic Yard Mile	C.Y.MI.
Diameter	DIA.
Each	EA.
Emulsified	EMLSFD.
Erosion and Pollution Control	E&P CONTROL
Fabricated	FABR.
Foundation	FOUND.
Furnished	FURN.
Gallon	GAL.
Grade	GR.
Height	HT.
High Strength	H. STRENGTH
Horizontal	HOR.
Hour	HR.
Linear Foot	L.F.
Liquid	LIQ.
Loading	LD.
Lump Sum	L.S.
Material	MAT'L
Maximum	MAX.
Method	M.

Mile	MI.
Minimum	MIN.
One Thousand Feet Board Measure	MFBM
One Thousand Gallons	M.GALS.
One Thousand Gallons Mile	M.GALS.MI.
One Thousand Square Feet	M.S.F.
Polyvinylchloride	PVC
Pounds	LBS.
Reflectorized	REFLECT.
Section	SEC.
Square Foot	S.F.
Square Yard	S.Y.
Station	STA.
Station Yard	STA. YD.
Strand	S.
Structural	STRUCT.
Structural Steel	S. STEEL
Stump	STMP
Target Value	TV
Thickness	TH.
Ton Mile	T.M.
Tops and Limbs	T&L
Utilization of Timber	UOT
Vertical	VERT.
White	WH.
Width	W.
With	W/
Without	W/O
Woven wire	W.W.
Yellow	YE.

Section 102 - Definitions

Wherever in these specifications, or in other contract documents, the following terms, or pronouns in place of them, are used, the intent and meaning shall be interpreted as follows:

Adjustment in Contract Price. "Adjustment in contract price" shall mean "equitable adjustment" as used in the Federal Acquisition Regulations, or "Construction Cost Adjustment" as used in the Timber Sale Contract as applicable.

Arch Pipe. A culvert section, usually formed of bolted structural plates, that is an arc of a circle (usually one-half or less); that is, a bottomless culvert.

Base Course. The layer or layers of specified or selected material of designed thickness placed on a subbase or subgrade to support a surface course. (See figure 102-1.)

Bearings. The portion of a beam, girder, or truss that transmits the bridge superstructure load to the substructure.

Berm. Curb or dike constructed to control roadway runoff water. (See figure 102-1.)

Bridge. A structure, including supports, erected over a depression or an obstruction, such as water, road, trail, or railway, and having a floor for carrying traffic or other moving loads.

Bridge Length. The overall length measured along the centerline of road to the back of abutment backwalls, if present; otherwise, end to end of the bridge floor, but in no case less than the total clear opening of the structure.

Bridge Traveled Way Width. The clear width measured at right angles to the longitudinal centerline of the bridge between the bottom of curbs or, if curbs are not used, between the inner faces of parapet or railing.

Change. "Change" means "Change Order" as used in the Federal Acquisition Regulations, or "Design Change" as used in the Timber Sale Contract.

Clearing Limits. The limits of clearing as designated on the ground or on the drawings. (See figure 102-1.)

Conduit. A natural or artificial channel for carrying fluids, as water pipes, canals, and aqueducts.

Construction Slash. All vegetative material not meeting utilization standards, such as tops and limbs, timber, brush, and grubbed stumps associated with construction or reconstruction of a facility.

Contracting Officer (CO). The person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings.

Contractor. The individual, partnership, joint venture, or corporation undertaking the execution of the work under the terms of the contract and acting directly or through their agent, employees, or subcontractors. As used in specifications and drawings for specified roads (Timber Sale Contracts), "contractor" is "purchaser."

Controlled Felling. Directing the placement of trees in felling by wedges, jacks, cable tension, or distribution of holding wood or any combinations of these which will ensure that trees are dropped into previously cleared areas, or clear of any objects that are to remain.

Culvert. A conduit or passageway under a road, trail, or other obstruction. A culvert differs from a bridge in that it is usually constructed entirely below the elevation of the traveled way.

Cushion Material. Native or imported material generally placed over rocky sections of unsurfaced roads to provide a usable and maintainable traveled way.

Defect. A failure to meet a requirement with respect to a single quality characteristic.

Drawings. The documents, including plan and profile sheets, cross sections, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials showing details for construction of a facility.

Embankment. A structure of soil, aggregate, or rock material placed on the prepared ground surface and constructed to subgrade.

Engineer. The Contracting Officer's Representative (COR) or Engineering Representative (ER) responsible for onsite administration of the contract.

Equipment. All machinery and equipment, together with the necessary supplies for upkeep and maintenance, as well as tools and apparatus necessary for the proper construction and acceptable completion of the work.

Excess Excavation. Material from the roadway in excess of that needed for construction of designed roadways.

Forest Service. The United States of America, acting through the Forest Service, U.S. Department of Agriculture.

Gauge. The term "gauge" when used in connection with the measurement of plates will mean the U.S. Standard Gauge, except when reference is made to the measurement of metal sheets used in the manufacture of corrugated metal, pipe, metal plate culverts and arches, and metal cribbing, then the term means the "gauge" or "thickness" specified in AASHTO M 36, M 167, M 196, and M 219, as applicable. When the term "gauge" refers to the measurement of wire, it will mean the wire gauge specified in AASHTO M 32.

Government Land. National Forest System lands, and other lands controlled or administered by the Forest Service or by other Federal agencies.

Inspector. The Government-authorized representative designated in writing by the CO, COR, or ER responsible for detailed inspection.

Job-Mix Formula. The percentage of each material in a mixture intended for a particular use.

Laboratory. A testing laboratory of the Government or any other testing laboratory approved by the Contracting Officer.

Materials. Any substance specified for use in the construction of the project and its appurtenances.

Maximum Density. The highest density that can be obtained under stated conditions.

Measurement. Determining and expressing the quantities of work or materials.

Multi-Beam Girder. A precast, prestressed concrete member where the concrete deck is precast as an integral part of the member.

Neat Line. A line defining the proposed or specified limits of an excavation or structure.

Nominal Dimensions or Weights. The numerical values shown on the drawings or in the specifications as measurements of material to be used in the construction.

Nominal Maximum Particle Size. The largest sieve size listed in the applicable specification upon which any material is permitted to be retained.

Overbreak. Material beyond the neat line of an excavation that is removed in the process of excavation, usually by blasting.

Pavement Structure. Subbase, base, or surface course, or combination thereof, placed on a subgrade to support the traffic load and distribute it to the roadbed.

Pioneer Road. Temporary construction access built along the route of the project.

Pipe. A culvert that is circular (round) in cross-section.

Pipe-Arch. A pipe that has been factory-deformed from a circular shape such that the width (or span) is larger than the vertical dimension (or rise).

Profile Grade. The trace of a vertical plane, as shown on the drawings, intersecting the top surface at the centerline of the proposed facility construction.

Purchaser. The individual, partnership, joint venture, or corporation contracting with the Government under the terms of a Timber Sale Contract and acting independently or through his, their, or its agents, employees, or subcontractors.

Random Sampling. Sampling at times or locations determined in advance by the use of a table of random numbers.

Reasonably Close Conformity. Unless working tolerances are specified, all work performed and materials furnished shall be in reasonably close conformity with lines, grades, cross sections, dimensions, and material requirements shown on the drawings, indicated in the specifications, or designated on the ground. "Reasonably close conformity" is compliance with reasonable and customary manufacturing and construction tolerances.

Right-of-Way. A general term denoting (1) the privilege to pass over land in some particular line (including easement, lease, permit, or license to occupy, use, or traverse public or private lands) or (2) land, appurtenances thereto, or interest therein, usually in a strip, acquired for public or private passageway. (See figure 102-1.)

Road Template. The shape and cross-sectional dimensions of the roadway to be constructed as defined by the construction staking notes and the characteristics of the typical sections.

Roadbed. The graded portion of a road between the intersection of subgrade and side slopes excluding that portion of the ditch below subgrade. (See figure 102-1.)

Roadside. A general term denoting the area adjoining the outer edge of the roadway. (See figure 102-1.)

Roadway. The portion of the road within the limits of excavation and embankment, including slope rounding. (See figure 102-1.)

Schedule of Items. A schedule in the contract that contains a listing and description of construction items, quantities, units of measure, methods of measurement, unit price, and amount.

Second Samples. A sample taken when the initial sample indicates that the material is defective.

Shoulder. The portion of the roadway contiguous to the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of pavement structure. (See figure 102-1.)

Sidewalk. The portion of the roadway constructed primarily for pedestrian use.

Special Project Specifications. The specifications that detail the conditions and requirements peculiar to the individual project, including additions and revisions to Standard Specifications.

Specifications. A description of the technical requirements for a material, product, or service that includes criteria for determination whether these requirements are met.

Standard Specifications. Specifications approved for general application and repetitive use.

Subbase. The layers of specified or selected material of designed thickness placed on a subgrade to support a base course.

Subgrade Treatment. Modification of roadbed material by stabilization.

Subgrade. The layers of roadbed that bring it up to the top surface, upon which subbase, base, or surface course is constructed. For roads without base course or surface course, that portion of roadbed prepared as the finished wearing surface. (See figure 102-1.)

Substructure (Bridge). All of 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.

Superstructure (Bridge). The entire structure except the substructure.

Surface Course. The top layer of a pavement structure, sometimes called the wearing course, usually designed to resist skidding, traffic abrasion, and the disintegrating effects of climate. (See figure 102-1.)

Tackifier. Binder for vegetative mulch.

Target Value. The percentage of each material in a mixture intended for a particular use from which allowable variations are measured.

Timber Sale Contract. A written contract for the removal of National Forest timber.

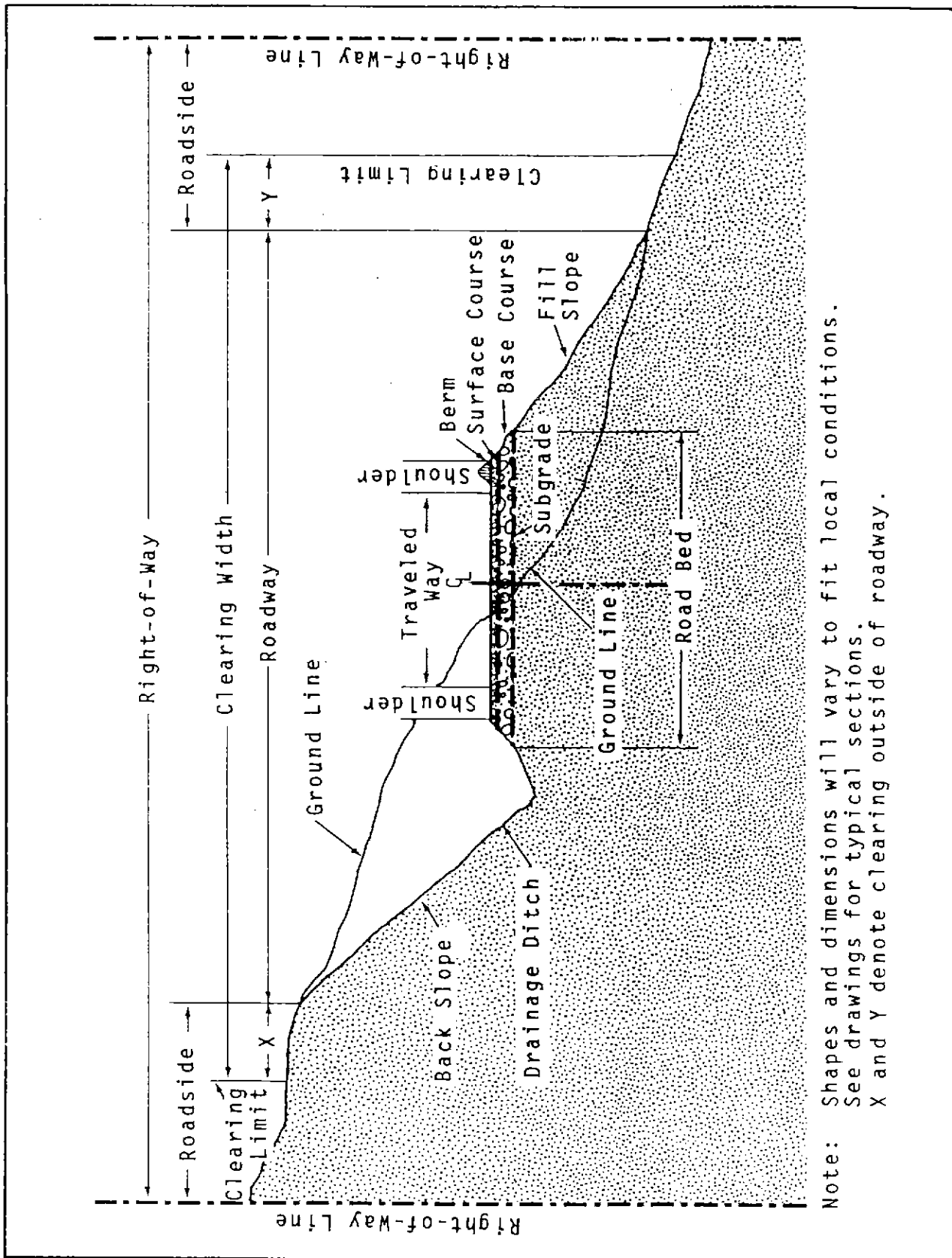
Traveled Way. The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes. (See figure 102-1.)

Turnout. A short auxiliary lane on a one-lane road provided for the passage of meeting vehicles.

Unit of Measurement. The unit and fractions of units shown in the Schedule of Items.

Unsuitable Material. The material excavated during roadway construction that is not usable in embankment and must be disposed of or that can be used only in certain locations or for limited purposes.

Utilization Standards. The minimum size and percent soundness of trees described in the specifications to determine merchantable timber.



Note: Shapes and dimensions will vary to fit local conditions.
 See drawings for typical sections.
 X and Y denote clearing outside of roadway.

Figure 102-1.--Illustration of road structure terms.

Section 103 - Intent of Contract

The intent of the contract is to provide for the complete construction of the project described in the contract. Unless otherwise provided, the contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies, and shall perform all work required to complete the project reasonably close conformity with drawings and specifications, and in accordance with provisions of the contract.

Section 104 - Maintenance for Traffic

104.01 Roads To Be Constructed

Unless otherwise provided in the SPECIAL PROJECT SPECIFICATIONS, existing roads, while undergoing improvement, shall be kept open to all traffic by the contractor and maintained in a condition that will adequately accommodate traffic. No work that interferes or conflicts with traffic or existing access to the roadway surface shall be performed until a plan for the satisfactory handling of traffic has been submitted by the contractor and approved by the Engineer. Specific requirements for temporary closures, detours, part-width construction and access to adjacent or intersecting facilities will be SHOWN ON THE DRAWINGS or described in SPECIAL PROJECT SPECIFICATIONS. Construction signing for traffic control shall conform to the Manual on Uniform Traffic Control Devices (MUTCD).

Prior to the contractor shutting down any operations, the contractor shall take such precautions as may be necessary to prevent damage to the project, such as temporary detours, approaches, crossings or intersections; and shall make provisions for normal drainage and minimization of erosion. All travelways shall be left in a condition suitable for traffic.

The Government may permit use of portions of the project during periods that the contractor has shut down operations. All maintenance attributable to permitted use during periods of work suspension will be provided by the Government unless the maintenance results from fault or negligence of the contractor. Any maintenance not attributable to use, or necessary during suspensions resulting from fault or negligence of the contractor, shall be the contractor's responsibility.

104.02 Use of Roads by Contractor

The contractor is authorized to use Forest Service roads for all activities necessary for completion of this contract subject to the limitations and authorizations described in SPECIAL PROJECT SPECIFICATIONS, when such use will not cause damage to the roads or National Forest resources and when traffic can be accommodated safely.

Section 105 - Control of Materials

105.01 Handling Materials

All materials shall be transported and handled to preserve their quality and fitness for the work. Aggregates shall be stockpiled, loaded, and transported in a manner that will preserve specified gradation and avoid contamination. Stockpiles of aggregate having different gradations shall not be intermingled.

105.02 Weighing Devices

When the measurement is by weight, the contractor shall provide weigh scales, and shall transport the materials so they can be weighed. All weighing shall be done by the contractor.

(a) Platform Scales. Platform scales shall be of sufficient length and capacity to permit simultaneous weighing of all axle loads of each hauling unit.

The scales shall be accurate to within 1 percent of the correct weight throughout the range of use. Before using the scales and as frequently thereafter as the Engineer determines necessary to ensure accuracy, the contractor shall have the scales checked, adjusted, and certified by a representative of the State agency responsible for weights and measures or by a qualified manufacturer's representative. The contractor shall maintain the scales to the required accuracy.

The contractor shall provide the Government with copies of weight tickets from a certified scale.

The contractor may have the material weighed on other certified scales without additional compensation and shall furnish certified weight tickets for all material delivered to the project. The contractor shall guarantee permission for a Government representative to periodically check the weighing procedure and records.

(b) Belt Conveyor Scales. Belt conveyor weighing will be accepted in lieu of platform scales, provided this method or device meets the requirements specified below and is compatible with the provisions of measurement and payment in the applicable specifications.

The belt conveyor scale shall meet the design, marking, installation, and tolerance requirements of the National Bureau of Standards Handbook No. 44, and shall be certified by a copy of a National Bureau of Standards Prototype Examination Report of Test.

The weighing mechanism shall contain a weight totalizer and a self-printing device that legibly imprints the load-out weight on appropriate serially numbered and time-dated tickets. The time dating may be done either by an automatic printing device or manually. Each ticket shall be delivered to the Government representative at job site or point of use. The totalizer calibration adjustment and ticket imprinter shall be furnished with a security lock and key.

Under observation of the Engineer or of a designated Government representative, the contractor shall run a daily zero-load test in accordance with National Bureau of Standards Handbook No. 44.

105.03 Sampling & Testing

For contractor-furnished sources (see Section 105.06), the contractor shall submit test results and a Certificate of Compliance that states that the aggregate meets the contract requirements. For designated sources (see Section 105.06), the contractor shall submit test results for aggregate gradation and a Certificate of Compliance that states gradation meets contract requirements. Crushing, screening, and mixing plants shall be equipped with sampling devices. The contractor shall take additional samples as required to validate the certification.

105.06
Material Sources

(a) Designated Sources. Sources of local materials designated in the SPECIAL PROJECT SPECIFICATIONS or SHOWN ON THE DRAWINGS are guaranteed by the Government for the quality and quantity of material in the source. The contractor shall determine the equipment and work required to produce the specified product. The contractor shall submit test results and a Certificate of Compliance that states that the gradation of the aggregate meets the contract requirements.

The contractor shall utilize all suitable material in the source. The designation of a source will include the right of the contractor to use areas SHOWN ON DRAWINGS for the purposes designated (that is, plant sites, stockpiles, haul roads). Unless otherwise indicated or approved, no additional operating area will be allowed, and the contractor will be required to operate in the confines of the area(s) designated.

The weight/volume relationship used for determination of designed quantities of material in designated sources subject to weight measurement are SHOWN ON THE DRAWINGS.

Should the designated source, due to causes beyond the control of the contractor, contain insufficient suitable material, the Government will provide another source with an adjustment in contract price.

(b) Contractor-Furnished Sources. When the material sources are not designated as provided above, or the contractor elects not to use designated sources, the contractor shall be responsible for furnishing material that produces an end product equivalent in performance to that originally designated. An adjustment in contract price will be made where the weight/volume relationship differences between designated source material and contractor-furnished source material results in a financial disadvantage to the Government. The contractor shall be responsible for completing any pit development specified for a designated source, even though the contractor does not choose to obtain material from the source if such a statement is SHOWN ON THE DRAWINGS.

Quality testing in conformance with applicable requirements and acceptable to the Engineer to establish the equivalency of the end product shall be the responsibility of the contractor. Test results shall be furnished to the Engineer.

Section 106 - Measurement & Payment

106.01 Measurement & Payment

Measurement and payment for contract work will be made only for and under those pay items included in the SCHEDULE OF ITEMS. All other work and materials will be considered as included in the payment for items shown.

When more than one class, size, or thickness is specified in the SCHEDULE OF ITEMS for any pay item, suffixes will be added to the item number to differentiate between the items.

106.02 Determination of Quantities

The following measurements and calculations are used to determine contract quantities.

For individual construction items, longitudinal and lateral measurements for area computations will be made horizontally or corrected to horizontal measurement unless otherwise specified. Measurements for seeding, mulching, geotextiles, netting, erosion control blankets, and sodding will be along slope lines.

The average end area method will be used to compute volumes of excavation or embankment. However, if in the judgment of the Engineer, the average end area method is impractical, measurement will be made by volume in hauling vehicles or by other three dimensional methods.

Structures will be measured according to neat lines SHOWN ON THE DRAWINGS or as altered by the Engineer in writing to fit field conditions.

For items that are measured by the linear foot, such as pipe culverts, fencing, guardrail, and underdrains, measurements will be made parallel to the base or foundation upon which the structures are placed. Pipe and pipe arch culverts shall be measured along center of invert and arches shall be measured at spring line.

For aggregates weighed for payment, the tonnage will not be adjusted for moisture content, unless otherwise provided in SPECIAL PROJECT SPECIFICATIONS.

For bituminous material, volumes will be measured at 60 °F or will be corrected to the volume at 60 °F by using ASTM D 1250 for asphalts. Emulsified asphalt will be measured at 60 °F or measured by converting the gallonage at another temperature to gallonage at 60 °F by means of the following formula:

$$\text{Gallons at } 60 \text{ } ^\circ\text{F} = \frac{\text{Gallons at } A \text{ } ^\circ\text{F}}{1 + 0.00025 (A \text{ } ^\circ\text{F} - 60 \text{ } ^\circ\text{F})}$$

in which A °F is the Fahrenheit temperature of the material at the time the gallonage is measured.

For vehicular shipments, net certified scale weights or weights based on certified volumes will be used as a basis of measurement. Measurements will be adjusted when bituminous material has been lost from the vehicle or from the distributor, has been wasted, or has otherwise not been incorporated into the work. Determining true weights of hauling vehicles shall be made by weighing the empty vehicles at least once a day at the times the Engineer directs. Each vehicle shall bear a plainly legible identification mark.

When bituminous materials are shipped, net certified weights, or volume corrected for loss of foaming, can be used for computing quantities.

For standard manufactured items--such as fence, wire, plates, rolled shapes, pipe conduits--identified by gauge, weight, section

dimensions, and so forth, such identifications shall be considered the nominal weights or dimensions. Unless controlled by tolerances in cited specifications, manufacturer's tolerances will be accepted.

106.03
Units of Measurement

Payment will be by units defined and determined according to U.S. Standard measure and by the following:

(a) Cubic Yard. A measurement computed by one of the following methods:

(1) Excavation, Embankment, or Borrow. The measurement computed by the average end area method from measurements made longitudinally along a centerline or reference line.

(2) Material in Place or Stockpile. The measurement computed using the dimensions of the in-place material.

(3) Material in the Delivery Vehicle. The measurement computed using measurements of material in the hauling vehicles at the point of delivery. Vehicles shall be loaded to at least their water level capacity. Leveling of the loads may be required when vehicles arrive at the delivery point.

(b) Cubic Yard Mile. A combination of linear and volumetric measurement meaning the movement of a cubic yard of material 1 mile.

(c) Each. One complete unit, which may consist of one or more parts.

(d) MFBM. One thousand feet board measure based on nominal widths, thicknesses, and extreme usable length of each piece of lumber or timber actually incorporated in the job.

(e) Station. One hundred linear feet measured horizontally.

(f) Station Yard. A combination of linear and volumetric measurement meaning the movement of a cubic yard of material one station.

(g) Thousand Gallons Mile. A combination of linear and volumetric measurement meaning the movement of 1,000 gallons of material 1 mile.

(h) Ton. Short ton consisting of 2,000 pounds.

(i) Ton Mile. A combination of linear and weight measurement meaning the movement of 1 ton of material 1 mile.

106.04
Methods of
Measurement

One of the following methods of measurement for determining final payment is DESIGNATED on the SCHEDULE OF ITEMS for each pay item:

(a) Designed Quantities (DQ). These quantities denote the final number or units to be paid for under the terms of the contract. They are based upon the original design data available prior to advertising the project. Original design data include the preliminary survey information, design assumptions, calculations, drawings, and the presentation in the contract. Changes in the number of units SHOWN in the SCHEDULE OF ITEMS may be authorized under any of the following conditions:

(1) As a result of changes in the work authorized by the Contracting Officer.

(2) As a result of the Contracting Officer determining that errors exist in the original design that cause a pay item quantity to change by 15 percent or more.

(3) As a result of the contractor submitting to the Contracting Officer a written request showing evidence of errors in the original design that cause a pay item quantity to change by 15 percent or more. The evidence must be verifiable and consist of calculations, drawings, or other data that show how the designed quantity is believed to be in error.

(b) Staked Quantities (SQ). These quantities are determined from staked measurements prior to construction.

(c) Actual Quantities (AQ). These quantities are determined from measurements of completed work.

(d) Vehicle Quantities (VQ). These quantities are measured or weighed in hauling vehicles.

(e) Lump Sum Quantities (LSQ). These quantities denote one complete unit of work as required by or described in the contract, including necessary materials, equipment, and labor to complete the job. They will not be measured.

106.05
Price Adjustment
for Out-of-
Specification
Bituminous Materials

Bituminous materials are defined as all types and grades of asphalt cement, liquid asphalt, emulsified asphalt, and dust oil.

If bituminous material fails one or more test requirements, and the Contracting Officer determines it is in the public interest to accept the material at a reduced price, the price reduction shall be based on the test results giving the largest percent price adjustment. The contractor may remove and replace the defective material or accept the adjustment.

The price reduction shall apply to all pay items affected.

Price adjustment will be based on samples taken in duplicate in accordance with AASHTO T 40 under the supervision of the Engineer. Samples shall be sent to an authorized laboratory. The laboratory shall test one of each duplicate sample and retain the other. When any test result is not within the specification limits, the laboratory shall immediately notify the supplier and the Engineer. The Engineer will then authorize check testing of the retained sample.

If the retained sample tests satisfactorily, the material will be accepted. If the retained sample also fails, the following schedule of price adjustments shall apply. The average of test values for the two samples will determine the basis for price adjustment, except when test results on the samples differ by more than the applicable AASHTO or ASTM Repeatability Unit; then, the test result numerically nearest the specification requirement will be used. (A repeatability unit is defined as D25 or D25% limit for single operator precision described in ASTM recommended practice C 670.)

The schedule of price adjustments shall not apply to the following tests:

<u>Test</u>	<u>AASHTO Test Method</u>
Spot Test	T 102
Particle Charge	T 59
Ductility	T 51

Bituminous materials failing to meet specifications for these tests shall be removed and replaced.

See Table 106-1 for the schedule of price adjustments for bituminous materials that do not meet specifications.

Table 106-1.--Schedule of price adjustments for out-of-specification bituminous materials.

Application	Deviation from Specification Limit Measured in Reproducibility Units ^a			
	Less than 1	1, but less than 2	2, but less than 3	3 or greater
Price reduction applicable to bituminous base course and pavement mixture or to seal coat and bituminous surface treatment aggregate.	0%	5%	25%	Remove & Replace
Price reduction applicable to bituminous material paid for as a separate item.	0%	10%	25%	Remove & Replace

^aA reproducibility unit is defined as D2S or D2SΔ limit for multi-laboratory precision described in ASTM recommended practice C 670.

The Sieve Test (AASHTO T59) results may be exempt from the schedule of price adjustments provided the contractor's quality assurance program includes checking the uniformity of bituminous spread rates in increments no greater than 1 foot over the width of the spray bar and variation between increments is no greater than 5 percent.

106.06
Earthwork Tolerances

Adjustments of horizontal or vertical alignment, within the tolerances specified in this contract, or shifts of balance points up to 100 feet shall be made by the contractor as necessary to produce the designed roadway section and to balance earthwork. Such adjustments shall not be considered as "Changes."