

**PART I--GENERAL PROVISIONS
SECTION 101--SECTION 109**

SECTION 101-DEFINITIONS AND TERMS

101.01-Abbreviations	3
101.02-Addendum	3
101.03-Advertisement	3
101.04-Award	3
101.05-Base Course	3
101.06-Bidder	4
101.07-Box Bridge	4
101.08-Bridge	4
101.09-Calendar Day	4
101.10-Commissioner	4
101.11-Completion Date	4
101.12-Construction Change	4
101.13-Contract	4
101.14-Contract Payment and Performance Bond	4
101.15-Contract Item (Pay Item)	4
101.16-Contract Time	5
101.17-Contractor	5
101.18-Department	5
101.19-Detour	5
101.20-Engineer	5
101.21-Equipment	5
101.22-Extra Work	5
101.23-Force Account	5
101.24-Highway-Road-Street	5
101.25-Holidays	5
101.26-Inspector	6
101.27-Instructions to Bidders	6
101.28-Laboratory	6
101.30-Materials	6
101.31-Minority Contractor or Subcontractor	6
101.32-Notice to Contractors	6
101.33-Pavement Structures	6
101.34-Plans	6
101.35-Prequalification	7
101.36-Project	7
101.37-Proposal	7
101.38-Proposal Form	7
101.39-Proposal Guaranty	7
101.40-QPL	7
101.41-Rights-of-Way	7
101.42-Roadbed	7
101.43-Roadside	7
101.44-Roadside Development	7
101.45-Roadway	7

101

101.46-Shoulder	7
101.47-Special Provisions	7
101.48-Specifications	8
101.49-State	8
101.50-Subcontractor	8
101.51-Subgrade	8
101.52-Substructure	8
101.53-Superintendent	8
101.54-Superstructure	8
101.55-Supplemental Agreement	8
101.56-Supplemental Specifications	8
101.57-Surety	8
101.58-Titles or Headings	8
101.59-Work	8
101.60-Working Day	8
101.62-Work Order	9
101.63-By the Engineer	9
101.64-Major and Minor Items	9

SECTION 101-DEFINITIONS AND TERMS

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

101.01-Abbreviations:

AAN.	American Association of Nurserymen
AAR.	Association of American Railroads
AASHTO.	American Association of State Highway and Transportation Officials
ANSI.	American National Standards Institute
ASLA.	American Society of Landscape Architects
ASTM.	American Society for Testing and Materials
AWPA.	American Wood Preservers 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 Electrical and Electronic Engineers
IES.	Illuminating Engineering Society
ICEA.	Insulated Cable Engineers Association
ISSA.	International Slurry Seal Association
MUTCD.	Manual on Uniform Traffic Control Devices
NEC.	National Electrical Code
NEMA.	National Electrical Manufacturers Association
SAE.	Society of Automotive Engineers
SPIB.	Southern Pine Inspection Bureau
SSPC.	Steel Structures Painting Council
UL.	Underwriter's Laboratories, Inc.

101.02-Addendum. Written interpretation or modification of any of the contract documents which is delivered to prospective bidders prior to the opening of bids.

101.03-Advertisement. The public announcement, as required by law, inviting bids for the Work to be performed or materials to be furnished.

101.04-Award. The formal acceptance by the Department of a Proposal.

101.05-Base Course. The layer or layers of specified or selected material of designed thickness placed on a subbase or a subgrade to support a surface course.

101.06-Bidder. A pre-qualified individual, firm, corporation, or joint venture acting directly or through a duly authorized representative to submit a Proposal to perform the advertised work.

101.07-Box Bridge. A box culvert type structure consisting of a single box or multiple boxes, with or without a bottom slab, having a length, measured along the centerline of the roadway, of more than 20 feet (6.1 meters) between the inside faces of the outside walls.

101.08-Bridge. A structure erected over a stream, watercourse, highway, railroad or opening, for carrying traffic, having a length, measured along the centerline of the roadway, of more than 20 feet (6.1 meters) between the faces of end supports.

101.09-Calendar Day. Every day shown on the calendar.

101.10-Commissioner. The Commissioner of the Department of Transportation of the State of Tennessee.

101.11-Completion Date. The calendar date by which the Contract shall be completed when such date is shown in the Proposal in lieu of the stipulation of a number of working days, or the date of final acceptance of the work.

101.12-Construction Change. A completed document, approved by the Engineer, covering changes in the Plans, Specifications or Quantities; and/or additional items and basis of payment which have been established by a previously executed Supplemental Agreement.

101.13-Contract. The written agreement between the Department and the Contractor setting forth the obligations of the parties thereunder, including but not limited to, performance of the Work which, within itself, includes the furnishing of labor, equipment, and materials; and the basis of payment.

The Contract includes the Instructions to Bidders, Proposal, all conditions and terms of the contract form, Contract Payment and Performance Bond, Letter of Credit where applicable, Specifications, Supplemental Specifications, Revisions and Additions, Special Provisions, and Addenda, Standard Drawings and Contract Plans, the Work Order, Construction Changes and Supplemental Agreements that are required to complete the construction of the project in an acceptable manner including authorized extensions thereof; all of which constitute 1 instrument.

101.14-Contract Payment and Performance Bond. The approved form of security, executed by the Contractor and his Surety or Sureties, guaranteeing complete execution of the Contract and all Supplemental Agreements, and the payment of all legal debts pertaining to the performance of the work.

101.15-Contract Item (Pay Item). A specifically described unit of work for which a price is provided in the Contract.

101.16-Contract Time. The number of working days or calendar days allowed for completion of the Contract, or the number of calendar days between the time of starting as determined by the Work Order, and the Completion Date including, in each case, authorized time extensions.

101.17-Contractor. The individual, firm, corporation, or joint venture contracting with the Department for performance of the Work.

101.18-Department. The Department of Transportation of the State of Tennessee.

101.19-Detour. A detour is a temporary rerouting of road users onto an existing highway in order to avoid a temporary traffic control zone.

101.20-Engineer. The Chief Engineer of the Department of Transportation or his duly authorized assistant or representative.

101.21-Equipment. All machinery, apparatus, and tools necessary for the proper construction and acceptable completion of the project, plus the necessary repair parts, tools, and supplies for upkeep and maintenance.

101.22-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.

101.23-Force Account. A method of payment for Extra Work when Supplemental Agreement is not arrived at between the Engineer and the Contractor. Also a contractual agreement with local (city or county) government, utility or railroad companies.

101.24-Highway-Road-Street. Each of these words is a general term denoting a public way for purpose of vehicular travel including the entire area within the Rights-of-Way.

101.25-Holidays. Holidays recognized by the State of Tennessee occur as follows:

New Year's Day	January 1
Martin Luther King Day	Third Monday in January
Presidents Day.....	Third Monday in February
Good Friday	Friday before Easter
Memorial Day	Last Monday in May
Independence Day.....	July 4
Labor Day	First Monday in September
Columbus Day.....	Second Monday in October
Veterans Day.....	November 11
Thanksgiving Day.....	Fourth Thursday in November
Christmas Day.....	December 25

All days appointed by the Governor of this State, or by the President of The United States, as days of fasting or thanksgiving.

Plan notes precluding restrictions to traffic on holiday weekends, unless specifically noted otherwise, do not apply to weekends associated with Martin Luther King Day, Presidents' Day, Columbus Day and Veterans Day.

101.26-Inspector. The authorized representative of the Engineer assigned to make detailed inspections of materials and Contract performance.

101.27-Instructions to Bidders. Instructions included in the document entitled "Instructions to Bidders," which give information to the Bidder with regard to filling out and signing the Proposal, preparing the Proposal Guaranty, preparing the Letter of Credit where applicable, signing the Contract if it is awarded to him, and preparing the Contract Payment and Performance Bond. It also covers submission or delivery of the Proposal to the Department.

101.28-Laboratory. The official testing laboratories of the Department, or such other laboratories as may be designated or approved by the Engineer acting only within the scope of the duties assigned to them individually.

101.29-Letter of Credit. A contractual promise to honor drafts presented for funds upon compliance with the terms and conditions specified. The Department shall have the authority to approve the issuer and prescribe said terms and conditions.

101.30-Materials. Any substance specified to be furnished or proposed for use in the construction of the project and its appurtenances.

101.31-Minority Contractor or Subcontractor. A minority business enterprise or Disadvantaged Business Enterprise(DBE), at least 50 per cent of which is owned by minority group members or women, or in case of publicly owned businesses, at least 51 per cent of the stock of which is owned by minority group members or women. For the purpose of this definition, minority group members are citizens of the United States(or lawfully admitted permanent residents) who are women, Black Americans, Hispanic Americans, Native Americans, Asian Pacific Americans, Subcontinent Asian Americans, or other minorities found to be socially and/or economically disadvantaged by the SBA

101.32-Notice to Contractors. A notice to Contractors and other interested parties of proposed Construction to be bid giving the date the bids are to be received and the location and general description of the work to be performed.

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

101.34-Plans. The approved Plans, profiles, cross sections, Standard Roadway and Structure Drawings, working drawings and supplemental drawings, or exact reproductions thereof, which show the location, character, dimensions, and details of the construction to be performed under the Contract.

101.35-Prequalification. The procedure established and administered by the Department by virtue of which prospective bidders are required to establish their responsibility and competence in advance of submission of Proposals.

101.36-Project. The specific improvement, together with all appurtenances, to be constructed under the Contract.

101.37-Proposal. The offer of a Bidder, on the prescribed form, to perform the Work at the prices quoted.

101.38-Proposal Form. The approved form on which the Department requires that Proposals be prepared and submitted for construction of the project.

101.39-Proposal Guaranty. The security furnished with a Proposal to guarantee that the Bidder will enter into a Contract if his Proposal is accepted and the Contract awarded to him.

101.40-QPL. The Qualified Products List is a listing of products that have been tested and/or analyzed by the Department and have been approved for use on TDOT road construction projects.

101.41-Rights-of-Way. A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to a highway and its appurtenant structures.

101.42-Roadbed. The graded portion of a highway prepared as a foundation for the pavement structure and shoulders.

101.43-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.

101.44-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.

101.45-Roadway. The portion of a highway within limits of construction.

101.46-Shoulder. 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.

101.47-Special Provisions. Provisions inserted into a Contract revising these Specifications or Supplements hereto, and covering conditions peculiar to the individual project. Special Provisions, when approved and accepted for general use are incorporated in the "Revisions and Additions" document.

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

101.49-State. The State of Tennessee.

101.50-Subcontractor. Any individual, firm, partnership, or corporation to whom the Contractor sublets any part of the Work under the Contract.

101.51-Subgrade. The top surface of a roadbed upon which the pavement structure and shoulders are constructed.

101.52-Substructure. 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.

101.53-Superintendent. The Contractor's authorized representative in responsible charge of the Work.

101.54-Superstructure. The entire structure except the substructure.

101.55-Supplemental Agreement. A written agreement entered into by and between the Department and the Contractor, with the written assent of the Surety, covering modifications or alterations beyond the scope of the original Contract, and establishing any necessary new Contract Items, any other basis of payment, and any time adjustments for the work affected by the changes. This Agreement becomes a part of the Contract when properly executed and approved.

101.56-Supplemental Specifications. Approved additions and revisions to the Standard Specifications.

101.57-Surety. A company authorized under its charter to guarantee performance of the Contract and authorized to do business in Tennessee according to law.

101.58-Titles or Headings. The titles or headings of the Sections and Subsections in these Specifications are intended for convenience of reference and shall not be considered as having any bearing on the interpretation of the Specifications.

101.59-Work. The Work shall mean the furnishing of all labor, materials, equipment, and any incidentals necessary to the satisfactory completion of the project, including the carrying out of all duties and obligations imposed by the Contract.

101.60-Working Day. A calendar day, exclusive of Saturdays, Sundays and State recognized holidays, which weather or other conditions not under the control of the Contractor, will permit construction operations to proceed for at least 5 hours of the day with the normal working force engaged in performing

the controlling item or items of work which are normal to progress at the time, as determined by the Engineer.

101.61-Working Drawings. Stress sheets, shop drawings, erection plans, falsework plans, framework plans, cofferdam plans, bending diagrams for reinforcing steel, or any other supplementary plans or similar data which the Contractor is required to submit to the Engineer for approval.

101.62-Work Order. Written notice to the Contractor to proceed with the Work under the Contract, including when applicable, the date of beginning of Contract time.

101.63-"By the Engineer". 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."

101.64- Major and Minor Items. Major Items will be determined as follows:

- a. Any original contract item having a value of 15% or more of the original contract amount, based on the original estimated quantity, shall be a major item.
- b. The accumulation of the least number of individual items that total at least 40% of the original contract amount also shall be major items. The items shall be totaled sequentially starting with the largest item (based on original prices and quantities).
- c. Any items that do not meet (a) or (b) above shall be minor items.

**SECTION 102-BIDDING REQUIREMENTS AND
CONDITIONS**

102.01-Prequalification Statements and Competency of Bidders..... 11
102.02-Contents of Proposal Forms 11
102.03-Interpretation of Quantities in Bid Schedule 11
**102.04-Examination of the Site , the Work, the Plans, and the
Specifications..... 12**
102.05-Preparation of Proposals..... 12
102.06-Delivery of Proposals..... 13
102.07-Withdrawal of Proposal 13
102.08-Public Opening of Proposals..... 13
102.09-Rejection of Proposals 13

SECTION 102-BIDDING REQUIREMENTS AND CONDITIONS

102.01-Prequalification Statements and Competency of Bidders. Each prospective bidder and subcontractor will be required to file a document entitled "Prequalification Statement." The foregoing shall be filed on a form provided by the Department. The form shall be filled out completely, and the truth and accuracy thereof shall be evidenced by a sworn affidavit signed by an authorized signatory.

Prospective bidders' "Prequalification Statement" shall be filed prior to 12:00 o'clock noon of the day preceding the letting at which a proposal to be submitted by the prospective bidder is to be considered. Bidders intending to submit proposals consistently shall submit the prequalification document at least once a year; however, this document may be changed during such period upon submission of additional favorable reports or upon receipt by the Department of substantiated evidence of unsatisfactory performance.

Prospective subcontractors will be required to pre-qualify prior to approval of the subcontracts by the Department and must also submit a Prequalification Statement at least once a year.

The Department reserves the right to refuse to issue a proposal form when a bidder is in default or delinquent for any of the following reasons:

- (a) When a prequalification statement has not been filed with and examined by the Department or when the bidder, in the opinion of the Commissioner, is not qualified.
- (b) Default of existing contract (s).
- (c) When a bidder has an existing incomplete contract (s) with the Department which is behind schedule to the extent that it may hinder or prevent prompt completion of any additional contract (s).
- (d) Disbarred by the State.

102.02-Contents of Proposal Forms. Upon request, the Department will furnish the Bidder a proposal form which will contain an "Instructions to Bidders" form, Supplemental Specifications, Special Provisions, and proposal guaranty form. The proposal form will state the location and description of the contemplated construction. The proposal form will state the time in which the Work must be completed, the amount of the Proposal Guaranty, and the date, time and place for the opening of Proposals. The Plans and Specifications are as much a part of the Proposal form as if they were bound therein. All of the documents that are bound therein are part of the Proposal and shall not be detached.

The prospective bidder will be required to pay the Department the sum stated in the Instructions to Bidders for each copy of the proposal form. Plans will be available for the sum stated in the notice to Contractors.

102.03-Interpretation of Quantities in Bid Schedule. The quantities appearing on the diskette are approximate only and are prepared for the

comparison of bids and award of Contract. The Department does not guarantee or assume any responsibility that quantities indicated on the Plans or given in the computer diskette will hold in the construction of the project and the Contractor shall not plead deception or misunderstanding because of variation from these quantities or of variation from the location, character or any other conditions pertaining thereto. Payment to the Contractor will be made only for the actual quantities of work performed and accepted, and materials furnished in accordance with the Contract. The schedule of quantities of work to be done and materials to be furnished may be increased, decreased, or omitted as hereinafter provided under **Subsection 104.02**.

102.04-Examination of the Site, the Work, the Plans, and the Specifications. The Bidder shall examine carefully the site of the Work including the surrounding terrain, and access facilities. He shall examine in detail the Plans, Specifications, and all other documents making up the Proposal which covers the Work. It is mutually agreed that submission of a bid shall be considered prima facie evidence that the Bidder has made such examinations and has fully familiarized himself with the character, quality, and quantity of work to be performed, and of materials to be furnished.

102.05-Preparation of Proposals. A document entitled "Instructions to Bidders" is bound into the proposal form. The proposal form shall be filled in completely and signed in exact accordance with these instructions. The proposal guaranty form shall be handled similarly. The completed Proposal form as described in **Subsection 102.02**, shall then be submitted or delivered to the Department in exact accordance with the applicable part of the instructions. Proposal Sheet 3 should be properly executed by a Notary Public prior to the submission of the bid. If the successful bidder fails to have this sheet properly notarized prior to submission of his bid, then a Notary Public must execute this sheet not later than four days after notification by the Department. Failure of the bidder to cause execution of the bid by a Notary Public in the said four day period shall be just cause for rejection of the bid and for the forfeiture of the Proposal Guaranty or Proposal Guaranty Bond as liquidated damages.

The Department will furnish a computer assisted bidding (CAB) program and a computer diskette containing the contract bid items and associated estimated quantities. The following stipulations shall apply to CAB.

- (a) It is the bidder's responsibility to compare the bid quantities indicated on the plans to those contained on the computer diskette to ensure they are the same. Any discrepancies are to be called to the Department's attention immediately.
- (b) The diskette and any revised diskettes are to be returned with the sealed bid.
- (c) Any revisions to the Contract Proposal regarding bid items or quantities will be accompanied by a new diskette with the revision date indicated. The revised diskette is to be utilized in the formulation of the bid.

Some proposals may contain numerous alternates. The Contractor will be required to bid on only 1 alternate for each construction item unless otherwise

specified. The proper procedure for entering alternate bids is to enter prices for the intended alternate item(s) of construction and leave the undesired alternate item(s) of construction blank. CAB allows only for 1 alternate to be bid. If prices are entered for more than 1 alternate, the CAB will not tabulate the total. Instructions for CAB are available from the Headquarters Construction office and the method of entering alternates is explained therein.

The Department will not be responsible for loss or damage to a bid diskette after it has been mailed or delivered to the bidder. If loss or damage occurs, the bidder may order another diskette.

The CAB program will perform all extensions of the estimated quantities and unit or lump sum prices, calculate the total bid and allow the printing of a complete set of bid item sheets with appropriate subtotals and grand total bid price. The only entries into the CAB program by the bidder that will be permitted will be the insertion of the unit and/or lump sum prices for items that must be bid to provide a complete bid item list.

The program generated bid item sheets shall be 8.5 x 11 inches (215 x 280 millimeters) white, bond paper. Any printer may be used so long as the type is clear, distinct, and legible.

The CAB program generated set of bid item sheets shall be attached to the designated sheet furnished with the Proposal form with the contract total sheet placed on top. The completed Proposal form as described in **Subsection 102.02**, along with the CAB diskette, shall then be submitted or delivered to the Department in exact accordance with applicable part of the "Instruction to Bidders".

102.06-Delivery of Proposals. Each Proposal must be submitted, sealed, in a special envelope furnished by the Department with the proposal form. The blank spaces on the envelope must be filled in correctly so as to clearly indicate its contents.

No proposal will be considered or accepted which has not been received by the Department previous to the hour of the date and at the place set forth for the opening thereof in the Advertisement or Instruction to Bidders.

102.07-Withdrawal of Proposal. Any Bidder, on written request signed by an authorized signatory and presented prior to the hour set for the opening of bids, may withdraw his Proposal. If the withdrawal is for the purpose of making corrections as the result of an Addendum delivered by the Department after the Bidder has submitted his bid, the Proposal will be separated from the others awaiting opening, returned to the Bidder, corrections made and the Proposal returned prior to the hour set for the opening of bids. If the withdrawal is for the purpose of canceling the bid, his Proposal will be returned to him unread at the time of the regular opening of bids.

102.08-Public Opening of Proposals. Proposals will be opened and read publicly on the date and at the hour and place indicated in the Advertisement for Bids and in the Instruction to Bidders. Total bids, rather than unit prices, will be read. Bidders, or their authorized Agents, are invited to be present.

102.09-Rejection of Proposals. Proposals will not be rejected if they condition their consideration upon the elimination of other proposals submitted by the

same bidder, provided that any selection of awards will be made by the Department. A Bidder may tie the acceptance or rejection of 2 or more of his proposals on the condition that either all of his proposals are accepted or that they are all rejected, in which case his bids must be the lowest responsible bid on each project before they will be considered.

Proposals may be rejected by the Commissioner if any of the unit prices contained therein are obviously unbalanced, either excessive or below the reasonable cost analysis value.

Proposals will be rejected as being irregular if they are not prepared on the prescribed forms; if they show any omissions, alterations of form, additions, or conditions not called for, unauthorized alternate bids, or irregularities of any kind; or if they fail to contain a unit price for each item listed. In the case of authorized alternate items, a unit price on only 1 of the alternates will be required, unless otherwise specified in the Contract.

Proposals that contain the computer diskette without the CAB program generated bid item sheets will be rejected as irregular. Also, computer generated bid item sheets printed from other than the CAB program diskette furnished by the Department, shall cause the Proposal to be rejected as irregular. Further, the use of a diskette issued to a firm other than the firm submitting the bid shall cause rejection of the Proposal as irregular.

Written alterations to unit prices and extensions of the various items in the CAB program generated set of bid item sheets will not be cause for rejection of the Proposal, provided each alteration is made in ink and is initialed by a duly authorized official of the company.

Proposals will be rejected as irregular if prior to the formal opening of the Proposal, all of the following documents have not been signed as follows: (1) the bidder shall sign by written signature the Proposal form, (2) the bidder shall sign by written signature the Proposal Certification form, (3) the bidder shall sign by written signature the Proposal Bond form or the Proposal Guarantee, whichever is applicable, (4) the Agent or Attorney-in-Fact representing a Surety Company shall sign by written signature the Proposal Bond, if applicable. In addition, Proposals will be rejected if any of the above signatures are a reproduced copy, such as, but not limited to a photostatic copy or a facsimile transmission. An original, dated and valid Power of Attorney for the Attorney-in-Fact must accompany the Proposal and the Contract. The accompanying Power of Attorney must be dated, and the date must be the exact same date as the date on the Proposal Guaranty Bond. The Proposal and the Proposal Guarantee Bond, including the attached Power of Attorney shall be valid and binding for 60 days subsequent to the date of opening bids. As an alternative, Surety Companies may submit an original, unnumbered Power of Attorney suitable for photocopying to the Department. Surety Companies choosing this alternative will be required to furnish the Department with a letter on the company letterhead and signed by an officer of the company authorized to appoint Attorneys-in-fact. A draft copy of this letter is available from the Department upon request.

Proposals shall be completed on the forms as issued. Photostatic or facsimile copies of Proposal sheets may not be attached to the Proposal. Proposals containing forms not issued by the Tennessee Department of Transportation except for computer generated bid item sheets, may be subject to rejection.

Please review a part of **Subsection 102.02** of the Standard Specifications stating: "All of the documents that are bound therein are part of the Proposal and shall not be detached." Proposals shall not be taken apart. Proposals taken apart may be subject to rejection. Also, please review a part of **Subsection 102.09** of the Standard Specifications stating: "Proposals will be rejected as being irregular if they are not prepared on the prescribed forms; if they show any omissions, alterations of form, additions, or conditions not called for, unauthorized alternate bids, or irregularities of any kind; or if they fail to contain a unit price for each item listed." Proposals shall be completed on the forms as issued. Photostatic or facsimile copies of Proposal sheets may not be attached to the Proposal. Proposals containing forms not issued by the Tennessee Department of Transportation except for computer generated bid item sheets, may be subject to rejection.

As an alternative, Surety Companies may submit an original, unnumbered Power of Attorney suitable for photocopying to the Department. Surety Companies choosing this alternative will be required to furnish the Department with a letter on the company letterhead and signed by an officer of the company authorized to appoint Attorneys-in-fact. A draft copy of this letter is available from the Department upon request. Please review a part of **Subsection 102.02** of the Standard Specifications stating: "All of the documents that are bound therein are part of the Proposal and shall not be detached." Proposals shall not be taken apart. Proposals taken apart may be subject to rejection. Also, please review a part of **Subsection 102.09** of the Standard Specifications stating: "Proposals will be rejected as being irregular if they are not prepared on the prescribed forms; if they show any omissions, alterations of form, additions, or conditions not called for, unauthorized alternate bids, or irregularities of any kind; or if they fail to contain a unit price for each item listed." Proposals shall be completed on the forms as issued. Photostatic or facsimile copies of Proposal sheets may not be attached to the Proposal. Proposals containing forms not issued by the Tennessee Department of Transportation except for computer generated bid item sheets, may be subject to rejection. As an alternative, Surety Companies may submit an original, unnumbered Power of Attorney suitable for photocopying to the Department. Surety Companies choosing this alternative will be required to furnish the Department with a letter on the company letterhead and signed by an officer of the company authorized to appoint Attorneys-in-fact. A draft copy of this letter may be obtained from the Department on request.

Proposals will be rejected as irregular when submitted by a bidder who has not qualified as required by the Commissioner under the authority given him by Tennessee Code Annotated.

Reasonable grounds for believing that any Bidder is interested in more than 1 Proposal on the same project or that there has been collusion among the Bidders will cause a rejection of all Proposals in which the Bidders involved are interested.

A Proposal will be rejected, at the discretion of the Commissioner, if a Bidder or any member of the firm, partnership, or corporation represented in his Proposal is related either by blood or marriage within the fourth degree, computing by the civil law, to any member of the Department, or if any member of the Department will have any financial interest in the Contract.

The right is reserved to reject a Proposal from a Bidder who has not paid or satisfactorily settled all legal debts due on former contracts in force at the time of the letting.

All Proposals will be rejected that do not contain the Proposal Guaranty of the character and amount indicated in the proposal form.

Until the execution and approval of the Contract by the Department, the right is reserved to reject any and all Proposals and to waive technical errors.

**SECTION 103-AWARD AND EXECUTION OF
CONTRACT**

103.01-Consideration of Proposals..... 18
103.02-Return of Proposal Guaranties 18
103.03-Material Guaranty 18
103.04-Award of Contract..... 18
103.05-Cancellation of Award 19
103.06-Execution of Contract and Contract Payment and Performance
Bond 19
103.07-Failure to Execute Contract 19

SECTION 103-AWARD AND EXECUTION OF CONTRACT

103.01-Consideration of Proposals. When the bidder submits their bid on bid item sheets generated by the computer assisted bidding (CAB) program, the following shall govern:

- (a) The Internet bid or (CAB) program generated sheets shall be recognized and used for the official bid. In **Subsection 103.06**, change “**Contract Bond**” to “**Contract Payment and Performance Bond.**”
- (b) It is intended that all changes to unit prices be made using the (CAB) program. However, in an emergency, manual changes will be allowed if made in ink and initialed by a duly authorized official of the company. Any manual changes will govern over the (CAB) program
- (c) Should more than one set of bid item sheets be submitted (either (CAB) generated or Internet submitted) the lowest total Contract will govern.

After the Proposals are opened and read, they will be compared based on the summation of the products of the unit bid prices and the approximate quantities. The results of such comparisons will be made available to the public.

The right is reserved to reject any or all Proposals, to waive technicalities or to advertise for new Proposals, if in the judgment of the awarding authority, the best interest of the Department will be promoted thereby.

103.02-Return of Proposal Guaranties. As soon as the proposal prices have been compared, the Department will return Proposal Guaranties accompanying such proposals, as in its judgment, are not likely to be involved in making the award. All other Proposal Guaranties will be released or returned to the respective Bidders, whose Proposals they accompanied, after satisfactory Contract and Contract Payment and Performance Bond or Letter of Credit, where applicable, have been executed and accepted.

103.03-Material Guaranty. Before any project is awarded, the Bidder may be required to furnish a complete statement of the origin, composition, or manufacture of any or all materials proposed to be used in the construction of the project, together with samples, which may be subjected to tests, provided for in these Specifications, to determine their quality and fitness for the construction.

103.04-Award of Contract. After suitable final investigation as to his responsibility, the Department will either award a Contract to the lowest responsible Bidder whose Proposal complies with all of the requirements

described, within 30 days after the formal opening of Proposals or it will reject all Proposals received on the Project.

103.05-Cancellation of Award. The Department reserves the right to cancel the award of any Contract, at any time prior to execution of said Contract by all parties without any liability against the Department.

103.06-Execution of Contract and Contract Payment and Performance Bond. The successful Bidder to whom the project has been awarded shall sign the Contract and return it to the Department at Nashville, Tennessee, along with the fully executed Contract Payment and Performance Bond or Letter of Credit, where applicable, in a sum equal to 100% of the amount of the Contract, within 10 days after the receipt of notification of award and receipt of Contract forms from the Department.

No contract shall be considered as binding until it has been executed by all parties thereto.

103.07-Failure to Execute Contract. Failure on the part of the Bidder to execute the Contract and to file an acceptable Contract Payment and Performance Bond or Letter of Credit, where applicable, within the time set forth above shall be just cause for cancellation of the award and for the forfeiture of the Proposal Guaranty which shall become the property of the Department, not as a penalty, but in liquidation of damages sustained. Under such circumstances, award may then be made to the next lowest responsible Bidder, or the Work may be re-advertised and constructed under Contract or otherwise, as the Department may decide.

SECTION 104-SCOPE OF WORK

104.01-Intent of Contract 21
104.03-Extra Work 23
104.04-Maintenance of Traffic..... 23
104.05-Barricades and Warning Signs..... 25
104.06-Maintenance During Construction 25
104.07-Movement of Heavy Equipment..... 25
104.08-Operation of Earthmoving Equipment..... 25
104.09-Dust Control..... 26
104.10-Rights in and Use of Materials Found on the Work..... 26
104.11-Final Cleanup..... 26

SECTION 104-SCOPE OF WORK

104.01-Intent of Contract. It is the intent of the Contract to provide for the construction and completion of the Work in every detail and in full accordance with the Plans, Specifications, and all other documents making up the Contract.

104.02-Alterations in Plans or in Character of Construction. The Department reserves the right to make, at any time during the progress of the work, such increases or decreases in quantities and such alterations in the work within the general scope of the Contract, including alterations in the grade or alignment of the road or structure or both, as may be found necessary or desirable. Such increases or decreases and alterations shall not invalidate the Contract nor release the Surety, and the Contractor agrees to accept the work as altered, the same as if it had been a part of the original Contract.

Under no circumstances shall alterations of Plans or of the nature of the work involve work beyond the termini of the proposed construction except as may be necessary to satisfactorily complete the project.

Differing Site Conditions:

1. During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract, are encountered at the site, the Contractor discovering such conditions shall promptly notify the Engineer in writing of the specific differing conditions before they are disturbed and before the affected work is performed.
2. Upon written notification, the Engineer will investigate the conditions, and if he determines that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding loss of anticipated profits, will be made and the contract modified in writing accordingly. The Engineer will notify the Contractor of his determination whether or not an adjustment of the contract is warranted.
3. No contract adjustment which results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice.

No contract adjustment will be allowed under this subsection for any effects caused on unchanged work.

Suspensions of Work Ordered By the Engineer:

1. If the performance of all or any portion of the work is suspended or delayed by the Engineer in writing for an unreasonable period of time (not originally anticipated, customary, or inherent to the construction industry) and the Contractor believes that additional compensation and/or contract time is due as a result of such suspension or delay, the Contractor shall submit to the Engineer in writing a request for adjustment within 7 calendar days of receipt of the notice to resume work. The request shall set forth the reasons and support for such adjustment.
2. Upon receipt, the Engineer will evaluate the Contractor's request. If the Engineer agrees that the cost and/or time required for the performance of the contract has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the fault of the Contractor, his suppliers, or Subcontractors at any tier, and not caused by weather, the Engineer will make an adjustment (excluding profit) and modify the contract in writing accordingly. The Engineer will notify the Contractor of his determination whether or not an adjustment of the contract is warranted.
3. No contract adjustment will be allowed unless the Contractor has submitted the request for adjustment within the time prescribed.
4. No contract adjustment will be allowed under this subsection to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided for or excluded under any other term or condition of this contract.

Significant Changes in the Character of Work:

1. The Engineer reserves the right to make at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the project.
2. If the alterations or changes in quantities significantly change the character of the work under the contract, whether or not changed by any such different quantities or alterations, an adjustment, excluding loss of anticipated profits, will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made either for or against the Contractor in such amount as the Engineer may determine to be fair and equitable.
3. If the alterations or changes in quantities do not significantly change the character of the work to be performed under the

contract, the altered work will be paid for as provided elsewhere in the contract.

4. The term "significant change" shall be construed to apply only to the following circumstances:
 - (a) When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction or
 - (b) When a major item of work is increased in excess of 125% or decreased below 75% of the original contract quantity. Any allowance for an increase in quantity shall apply only to that portion in excess of 125% of original contract item quantity, or to the amount of work performed in case of a decrease below 75%.

104.03-Extra Work. When unforeseen work results for any reason and is not handled as prescribed elsewhere herein, the Engineer and the Contractor will attempt to agree on equitable prices. When such prices are agreed upon, a Supplemental Agreement will be executed, and a Construction Change will be issued by the Engineer. When equitable prices are not agreed upon mutually, the Engineer may issue a written order that the Extra Work be completed on a force account basis and paid for as provided in **Subsection 109.04.**

104.04-Maintenance of Traffic. Unless otherwise provided, the road, while under construction, shall be kept open to all traffic by the Contractor. Where so provided for on the Plans, the Contractor may bypass the traffic over approved detour routes. The Contractor shall keep the portion of the project being used by the public traffic, whether it be through or local traffic, in such condition that traffic will be adequately and safely accommodated. He shall also provide and maintain in a safe condition temporary approaches or crossings and intersections with trails, roads, streets, businesses, parking lots, railroads, residences, garages and farms. This shall include mowing or other vegetation removal to insure safe sight distance at intersections. Construction traffic will be prohibited from using median crossovers on controlled access routes, except in areas, approved by the Engineer, where traffic control devices allow for the safe movement of construction traffic.

The Contractor shall bear all expense of maintaining traffic over the section of road under construction and maintaining such approaches, crossings, intersections, including mowing to insure safe sight distance, and other features as may be necessary without direct compensation, except that materials used at the direction of the Engineer to construct and maintain such approaches, crossings, intersections, and other features will be paid for by the Department at Contract unit prices.

Except in emergencies, no lane closures will be permitted on any state routes with 30,000 or greater Average Daily traffic or any interstate routes, without the explicit consent of the engineer. On projects where work is required in traffic lane(s) or where a lane closure is necessary for public

safety, the contractor must submit a request to the Department at least three(3) working days prior to the date of the anticipated lane closure(s). All requests for lane closure(s) must list the exact location, the time that the closure will begin, the estimated duration and reasons for the proposed lane closure(s).

If all lanes in one or both directions on an interstate route are to be closed for any length of time, the contractor must submit his request at least fourteen (14) calendar days before the anticipated event.

No lane closures or traffic restrictions will be allowed on the following days(these restrictions apply to state routes with 30,000 or greater Average Daily Traffic or any interstate route):

- Easter ----- After 6:00 pm on the Thursday preceding Good Friday through and including Easter Sunday
- Memorial Day ----- After 12:00 noon on the preceding Friday through Memorial Day
- July 4 ----- The observed holiday and preceding day plus weekend days either preceding or following these two days
- Labor Day ----- After 12:00 noon on the preceding Friday through Labor Day
- Thanksgiving ----- After 12:00 noon on Wednesday before Thanksgiving through Sunday following Thanksgiving
- Christmas/New year's Day-December 24 through January 1 and any preceding and/or following days that fall on a weekend

In addition, any State route less than 30,000 ADT shall have no lane closures, or lane restrictions of any type will be allowed on Good Friday, Labor Day, Memorial Day, July 4th and the working day immediately preceding and including the holidays of Thanksgiving, and Christmas Day without the written consent of the Engineer. Off-road work will be allowed but only to the extent that NO impact will be caused to the highway users. Violation of this rule will result in a \$5,000 penalty assessed against the prime contractor for each occurrence.

All public highways, roads and streets that are designated on the Plans as detours, but not designated as "Haul Roads," will be maintained by the Department with its own facilities.

During any suspension of work, the Contractor shall make passable and shall open to traffic such portions of the project and temporary roadways or portions thereof as may be directed by the Engineer for the temporary accommodation of necessary traffic during the anticipated period of suspension. Thereafter, and until issuance of an order for the resumption of construction operations, the maintenance of the temporary route or line of travel will be by the Contractor. When work is resumed, the Contractor will replace or renew any work or materials lost or damaged because of

such temporary use of the project; shall remove, to the extent directed by the Engineer, any work or materials used in the temporary maintenance, and shall complete the project in every respect as though its prosecution had been continuous. Materials for maintenance and restoration of the work, when used at the direction of the Engineer, will be paid for by the Department at Contract unit prices.

104.05-Barricades and Warning Signs. The Contractor shall provide, erect and maintain all barricades, warning signs, lights, temporary signals, temporary striping and other protective devices in accordance with the Manual on Uniform Traffic Control Devices for Streets and Highways, published by the FHWA. In the event that no pay items are included in the Contract for Traffic Control, the Contractor shall include such costs in the prices bid for other appropriate Contract items. Signs or other traffic control devices that are not appropriate for the work being done, shall be removed or covered to the satisfaction of the Engineer so as not to convey wrong information that might distract, mislead or in any way present a hazard to the driving public.

104.06-Maintenance During Construction. The Contractor shall maintain the Work during construction and until the project or section (s) thereof, as provided for in **Subsection 105.13**, is accepted. This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces to the end that the roadway or 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. There will be no separate payment for maintenance work during construction and before the project is accepted, the cost thereof is to be included in prices bid on the various Contract items.

104.07-Movement of Heavy Equipment. The Contractor's attention is called to the application of local, State, and Federal regulations governing construction work. Particular attention should be paid to the fact that various municipalities as well as the Department requires a permit for moving of heavy equipment. Application for such permits, when required, shall be made to the appropriate municipal officials and the Department of Transportation. It shall be the Contractor's responsibility to procure any such permits.

104.08-Operation of Earthmoving Equipment. When operation of earthmoving equipment on or across city streets or public roads is required, the Contractor must obtain specific written permission for such operations from the appropriate officials and shall deliver a copy of said permission to the Engineer prior to commencement of such operations. Any streets or public roads for which permission to operate earthmoving equipment on or across has been granted shall be kept reasonably free of loose earth and debris during movement of equipment and shall be thoroughly cleaned at the end of each day during which they have been used.

The Contractor shall provide flagging services as directed by the Engineer at locations where earthmoving equipment crosses or enters a city street or public road.

Any damage to city streets, public roads or adjacent property shall be repaired by the Contractor as directed by the Engineer.

The cost of cleaning city streets or public roads, of any required flagging of city streets or public roads, and of any repairs to city streets, public roads or adjacent property will not be paid separately, but shall be included in the cost of other bid items.

104.09-Dust Control. All available precautions shall be taken to control dust. When the Engineer judges dust to be a problem, the Contractor shall control the dust by sprinkling, by applying calcium chloride, or by other methods as directed. Payment for dust control will be made at the applicable contract unit prices for the various items used and said Contract unit prices will be full compensation for furnishing all materials, equipment, tools, labor and incidentals required to control dust. No additional compensation will be allowed for any costs incurred due to delays caused by necessary dust control operations.

104.10-Rights in and Use of Materials Found on the Work. The Contractor, with the approval of the Engineer, may use on the project such stone, gravel, sand, or other material determined suitable by the Engineer, as may be found in the excavation, and will be paid both for the excavation of such materials at the corresponding Contract unit price and for the pay item for which the excavated material is used. He shall replace at his own expense with other acceptable material all of that portion of the excavation material so removed and used which was needed for use in the embankments, backfills, approaches, or otherwise. No charge for the materials so used will be made against the Contractor. The Contractor shall not excavate or remove any material from within the rights-of-way which is not within the grading limits, as indicated by the slope and grade lines, without written authorization from the Engineer.

The material from any existing structures, water lines, sewers, utilities, etc., which is required to be removed in the course of construction, shall become the property of the Contractor to use or dispose of as he sees fit, unless otherwise designated on the Plans.

Commercial grade coal found in the work shall become the property of the Contractor and shall be removed from the project or shall be disposed of in a suitable waste site as approved by the Engineer. All coal retained by the Contractor shall be replaced at no cost to the Department with an equivalent amount of acceptable material when needed for construction of the project.

104.11-Final Cleanup. Before final acceptance of the Work, the entire rights-of-way, all material pits, all waste areas, all areas and access roads used by the Contractor, all streams in or over which he has worked, and all ground occupied by the Contractor, in connection with the Work, shall be cleaned of all forms, falsework, temporary structures, excess materials, equipment, rubbish, and waste, and all parts of the work shall be left in a

neat and presentable condition. Final cleanup shall include the mowing of the rights-of-way as required. If the project was graded under a previous Contract, final cleanup will be performed within the construction limits of work being performed and other areas disturbed or otherwise requiring cleanup due to the Contractor's operations. No rubbish, waste or debris shall be deposited on or in sight of the rights-of-way. All damage to private and public property shall be replaced, repaired, or settled for.

SECTION 105-CONTROL OF WORK

105.01-Authority of the Engineer 29
105.02-Plans and Working Drawings..... 29
105.03-Conformity with Plans and Specifications 32
105.04-Coordination of Plans and Specifications 32
105.05-Duties of Contractor 32
105.06-Planning of the Operations-Preconstruction Conference 33
105.07-Cooperation with Utilities 34
105.08-Cooperation between Contractors 35
105.09-Construction Stakes..... 36
105.10-Authority and Duties of Inspectors 38
105.11-Inspection of Work 38
105.12-Removal of Unacceptable and Unauthorized Work 39
105.13-Completion of Specific Sections of a Project 39
105.14-Opening Sections of a Project to Traffic..... 40
105.15-Acceptance..... 40
105.16-Claims for Adjustment and Disputes 40
105.17-Alternative Equipment 40
105.18-Method of Measurement 41
105.19-Basis of Payment 42

SECTION 105-CONTROL OF WORK

105.01-Authority of the Engineer. The Engineer will have full professional and executive charge of supervision of the Work. He will decide all questions which may arise as to the quality and acceptability of materials furnished and work performed, as to the rate of progress, and the amount of work which has been performed at any given time, and all questions which may arise as to the interpretation of the Plans and Specifications, and as to the acceptable fulfillment of the Contract by the Contractor. In all of these matters, the decision of the Engineer will be final and binding; decisions which are of a purely contractual or legal nature, will be subject to appeal in writing by the Contractor to the Commissioner.

The Engineer will have the authority to suspend the Work and withhold payment wholly or in part, if the Contractor furnishes materials or uses workmanship which are not fully acceptable, or if he fails to comply fully with any orders or with any provisions of the Contract. The Engineer also will have the authority to suspend the Work, wholly or in part, for such periods as he may deem necessary, due to unsuitable weather, or for any other conditions considered unsuitable for the prosecution of the Work, or as deemed to be in the public interest.

105.02-Plans and Working Drawings. The Contract Plans, generally, will show sufficient details and dimensions to define the Work. When additional details and dimensions are needed, the Contractor shall prepare working drawings and submit them to the Engineer for approval. In no wise will working drawings serve to make a change in the intent of the contract document. If the Contractor elects to allow so, the fabricator may submit shop or working drawings directly to the Department. In any case, the fabricator shall be construed to be an agent of the Contractor and any changes from the Contract Plans submitted by the fabricator shall be considered as made by the Contractor. All costs for changes other than those required by the Department will be at the expense of the Contractor. Shop drawings for all types of structures shall be submitted by, or on behalf of the Contractor, directly to the Division of Structures, unless noted otherwise in plans or Specifications, for handling with the checking agency and for distribution. Proof of appropriate fabricator certification (as required by these Specifications) for type of structure to be fabricated shall be submitted along with the shop drawings.

The following items require submittal of shop drawings by the contractor:

Structural Steel, Metal Bridge Rails, Bearing Devices (shop drawings not required for plain elastomeric bearing pads), Bridge Deck Drains (shop drawings not required if fabricated according to applicable Standard Drawing), Navigation Lighting Support Brackets, Precast Prestressed Concrete Beams, Precast Prestressed Concrete Deck Panels, Precast Reinforced Concrete Beams, Precast Concrete Box and 3 sided Culverts(not required if built in accordance with TDOT standards or published ASTM standards), Post-tensioned Concrete, Roadway Expansion Devices, Steel Stay-In-Place forms, Energy Attenuation Devices, Overhead and cantilever sign structures, high mast light foundations, retaining walls and noise walls,

cofferdams and any other items when indicated on plans. Also required are erection drawings for all bridge structures to be erected over active roads, railroads and navigable waterways, drawings of falsework, bracing, cofferdams, sheeting, bending of reinforcing steel and other supplementary plans called for by the Engineer, and required by **Subsection 602.42**.

Each shop drawing sheet shall contain in the title block the following: the project number, county, bridge name, bridge number (or structure type and number), station and contract number. Shop drawings whose title sheets do not include the foregoing identification will be returned for correction before any reviews for approval are conducted. Shop drawings shall be submitted in sets with the drawing numbers running consecutively in each set, and if more than 5 sheets in a set, shall be appropriately bound. Shop drawings marked "APPROVED" or "APPROVED AS NOTED" need not be resubmitted unless specifically instructed.

Shop drawings shall be a minimum of 8-1/2 x 11 inches in size. Legible half-size copies (11 x 17 inches) of full size drawings are acceptable for submittal (see sheet format below). The minimum number of sets of shop drawings shown below shall be submitted for approval. Only 1 set will be returned to the fabricator unless specifically requested and the additional set (s) requested to be returned is submitted along with those shown below. For Consultant designs, an additional set is required. For railroad structures, 3 additional sets are required.

- | | |
|------------|---|
| Two Sets: | Structural Steel (Half-size sets shall be submitted for approval. Four additional sets, 2 full-size and 2 half-size, will be required after final approval.) |
| Four Sets: | Energy Attenuation Devices, Overhead and Cantilever Sign Structures, (Submit directly to Special Design Office, Structures Division) Cofferdams |
| Six Sets: | Metal Bridge Rails, Bearing Devices (shop drawings not required for plain elastomeric bearing pads), Bridge Deck Drains (shop drawings not required if fabricated according to applicable Standard Drawing), Navigation Lighting Support Brackets, Precast Prestressed Concrete Beams, Precast Prestressed Concrete Deck Panels, Precast Reinforced Concrete Beams, Precast Reinforced Concrete Box Culverts, when applicable, Post-tensioned Concrete, Roadway Expansion Devices, Steel Stay-In- Place forms, and any other type of structural shop drawing not specifically listed. |

Except for Strain Poles, Street Lighting Poles, High Mast Poles with Accompanying Lowering Devices, Photometrics and Cofferdams, the Contractor shall require the fabricator to furnish the Division of Structures with 2 as-built sets of shop drawings on computer disks (CDs) after the structure is complete and before final payment will be made. The drawing files on CDs should be in either *.pdf or *.tif format. The CD cases should be labeled with the information required on the shop drawing title block.

All working drawings shall be approved by the Engineer; such approval shall be general in nature and shall not operate to relieve the Contractor of any of his responsibility under the Contract for the successful completion of the Work. In addition to such approval, working drawings involved in construction over or under railroad tracks will require approval of the railroad company before approval is granted by the Engineer. The Contractor shall submit four sets of plans for any cofferdams, sheeting and bracing details for bents or piers adjacent to a track, and falsework for erecting the spans over tracks, and the method of installation for the protection of the tracks, to the Engineer. No work shall be started on same until these plans are approved by the Department and the Chief Engineer of the railroad. Approval of these plans will not relieve the Contractor from liability. The above also applies in connection with the installation of pipes, culverts, etc. adjacent to or under railroad tracks. The cost of preparation of working drawings will not be paid for separately but shall be included in the prices of the respective Contract items involved.

INDEX OF DESIGN DRAWINGS	SHOP DRAWINGS	PROJECT NO.: _____
DWG. NO. _____	REVISION DATE: _____	SHOP DWGS. PREPARED BY: _____
IN CHARGE: _____		
ADDRESS: _____		
PHONE: _____		
STRUCTURAL STEEL		
FABRICATED BY: _____		
AGENCY: _____		
ADDRESS: _____		
PHONE: _____		
INDEX OF SHOP DRAWINGS		
DWG. NO. _____	DATE: _____	DATE: _____
NO. _____	1stSUBMIT.	2 nd SUBMIT.:
TITLE SHEET		
BRIDGE NO. _____		
OVER _____		
STATION _____		
_____ COUNTY		

Shop drawings for structural steel bridge components, precast or precast prestressed bridge, noise wall or retaining wall components and post-tensioning systems shall be accompanied on the first submittal by evidence of appropriate certification as described in Sections 602-STEEL STRUCTURES, 614-PRECAST CONCRETE BRIDGE DECKS, 615-PRECAST-PRESTRESSED CONCRETE BRIDGE MEMBERS, 616-POST-TENSIONED PRESTRESSED CONCRETE AND 908-STRUCTURAL STEEL AND APPURTENANT MATERIALS.

105.03-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 as shown on the Plans or indicated in the Specifications.

In the event the Engineer finds materials, or the finished product in which they are used, or various other facets of the Work, are not within reasonably close conformity with the Plans and Specifications, he shall make a determination if the Work, as performed, is in sufficiently close conformity to be adequate to the basic engineering necessity. If his finding is affirmative, the material or work in question will be accepted and will be permitted to remain in place. If his finding is negative, the material or work in question will be rejected as being unacceptable.

If the material or work is accepted under such conditions, the Engineer will document the basis of acceptance by Contract modification; such modification will provide for appropriate adjustment in the Contract price for such work or materials as the Engineer deems necessary to conform to his determination, all based on his engineering judgment. If the material or work is rejected, it shall be removed and replaced by the Contractor at his own expense in accordance with the provisions of **Subsection 105.12**.

105.04-Coordination of Plans and Specifications. These Specifications, any Supplemental Specifications, the Plans, Special Provisions, Earth Retaining Structures Manual and all other documents which are part of the Contract, are intended to be complementary and to describe and provide for a complete work. Requirements in 1 of these are as binding as if occurring in all of them. In case of discrepancy, Supplemental Specifications will govern over these Specifications, Plans will govern over both, and Special Provisions will govern over both Plans and Specifications. In interpreting Plans, calculated dimensions will govern over scaled dimensions; Contract Plans, typical cross sections, and approved working drawings will govern over standard sheets.

If the Contract contains Technical Specifications relating to utility items, or building structures, and the Technical Specifications conflict with these Specifications, the standard specifications will govern when the work is performed within the roadway template, shoulder to shoulder.

The Contractor shall take no advantage of any error or omission in the Plans or specifications or of any discrepancy between the Plans, the Specifications, or any other of the Contract documents, which may apply. In the event the Contractor discovers any error or discrepancy, he shall immediately call upon the Engineer for his interpretation and decision; such decision shall be final. At the Contractor's request, such decision may be had in writing.

105.05-Duties of Contractor. One complete set of the Contract documents, including applicable standard drawings, shall be maintained available on the Project at all times. The Contractor will be supplied, without cost, 2 copies of the Proposal form and Plans, except Standard Roadway and Structure Drawings. The Department will furnish the Contractor Standard Roadway and Structure Drawings at cost upon request.

The Contractor shall furnish to the Engineer copies, in the number required, of all statements of proposed Subcontracts. Subletting of Contracts shall be in accordance with the requirements of **Subsection 108.01**.

The Contractor shall furnish the Engineer with such information as may be requested by the Department relative to the purchase of materials or delivery of same.

The Contractor shall give the Work the constant attention necessary to facilitate its proper progress; he shall cooperate with the Engineer, his assistants and inspectors, and with other Contractors in every way possible. The Contractor shall designate in writing before starting work, an authorized representative who shall have the authority to represent and act for the Contractor. The authorized representative shall be present at the site of the work at all times while work is actually in progress on the contract. When work is not in progress or when work has been suspended, arrangements acceptable to the Engineer shall be made for any emergency work which may be required. Such authorized representative shall be furnished irrespective of the amount of the work sublet or remaining to be performed on the project. Whenever the Contractor or his authorized representative is not present on any particular part of the work where it may be necessary to give direction, orders will be given by the Engineer, which shall be received and followed by the superintendent or foreman who may have charge of the particular work in reference to which the orders are given.

The Contractor shall designate a responsible individual within his organization as a customer service representative. This person shall have authorization by the Contractor to address any customer service inquiry on the Contractor's behalf. In addition, when a Pre-construction Public Meeting is planned, the Contractor shall be required to attend and present his schedule and technical information regarding the contract.

The Contractor shall designate a responsible individual within his organization to attend and participate in a Post Construction Project Review on all projects with an original contract bid price of \$10,000,000.00 or more. This review shall be conducted as soon as practical following the completion of all work. The review shall be held to identify all significant project problems and make recommendations on how these problems can be avoided on future projects. Items to be discussed shall include but are not limited to cost overruns, supplemental agreements, plans completeness and accuracy, and contract obligations.

105.06-Planning of the Operations-Preconstruction Conference. After execution of the Contract by both parties thereto and prior to beginning work, the Contractor shall furnish the Engineer a complete and practicable plan of operations which shall provide for orderly and continuous performance of the Work. The plan of operations shall be in such form and in such detail as to show properly the sequence of operations, the location of operations and the period of time required for completion of the portion of the Work under each item or group of like items in the schedule. The plan of operations shall show the controlling item of work during each phase and a revised schedule shall be submitted when changed conditions

warrant. An anticipated schedule may be submitted by the Contractor that will show the anticipated monthly progress for the duration of the Contract. If the Contractor does not submit an anticipated schedule, then a straight-line curve will be used to determine progress. The plan of operation shall indicate the manpower and equipment to be available to handle the several phases of the Work. If the Contractor so elects, the Work may be scheduled by the Critical Path Method (CPM); and if called for in the Proposal, utilization of the Critical Path Method (CPM) shall be mandatory. When required, the CPM should be updated at least every 90 days as directed by the Engineer.

Subsequent to submission of the plan of operation, the Contractor shall attend a preconstruction conference called by the Engineer. He shall have available at such meeting all data necessary to substantiate his plan of operation and the scheduling thereof.

In addition to this basic plan of operations, the Contractor shall keep the Engineer notified of his planned or contemplated operation details sufficiently in advance of starting each phase so that inspection may be arranged by the Engineer. Such notice shall include the nature and location of the work planned or contemplated, the date and time of starting, and any hours outside of the conventional working day and working week during which the prosecution of such work is contemplated. The performance of any work without such notice to the Engineer and in the absence of inspection or the written waiver thereof, in itself, shall constitute sufficient grounds for rejection of such portion of the work.

105.07-Cooperation with Utilities. The Department will notify concerning the planned construction, all utility companies, all pipe line companies, and all other parties who have property, other than land, in the construction area. It will make every reasonable effort to cause such parties to make the adjustments in elevation or location that may be necessary to avoid conflict with the construction and with the completed project, and to protect their property from damage during construction.

In general, the Contract will indicate the various utility items known to exist, will indicate items to be adjusted or capital improvements proposed by the owners and will designate any items that are to be adjusted by the Contractor.

Information contained in the contract documents regarding utility locations is advisory only and shall not be construed as being a representation of completeness or accuracy. The Contractor shall contact the owners of the various utilities to determine the exact location of the utilities and the owner's schedule of any work the utility may be doing. Unless otherwise noted, all utility adjustments will be performed by the Utility or its representative. The Contractor shall cooperate with the owners of any utilities in their adjustment operations.

The Contractor will provide all necessary protective measures to safeguard existing utilities from damage during construction of the Work.

Advance clear cutting may be required by the Engineer at any location where clearing is called for in the plans or specifications, and clear cutting

is necessary for utility relocation. Any additional cost will be included in the price bid for the clearing item specified.

In the event that special equipment is required to work over and around the utilities, the Contractor will be required to furnish such equipment. Cost of protecting utilities from damage and furnishing special equipment will be included in the price bid for other items of construction.

The Contractor shall notify each individual Utility owner of his plan of operation in the area of the utilities. Prior to commencing work, the Contractor shall contact the Utility owners and request them to properly locate their respective utility on the ground. This notification shall be given at least three business days prior to commencement of operations around the utility.

It is understood and agreed that the Contractor has considered in his bid all of the permanent and temporary utility appurtenances in their present and relocated positions, any proposed utility capital improvements, and the Contractor has contacted the utility owner in regard to their proposed schedule of work and that no additional compensation will be allowed for any delays, inconvenience or damage sustained due to utilities or utility adjustment. However, interference caused by utilities on working day contracts will be considered in charging working time in accordance with **Subsection 101.60**.

Where construction operations require the use of a temporary crossing with the railroad company or companies specifically named in the Proposal, the Contractor shall:

1. Request the railroad company to construct the temporary crossings and shall notify the railroad company six weeks in advance of the time the temporary crossings are to be used. This is subject to the Contractor executing such agreements and furnishing such insurance as the railroad company may require.
2. Be responsible for determining and complying with the requirements of the railroad company covering the location, installation, protection, maintenance use and removal of such temporary crossing. The Contractor shall bear all costs and expenses incidental thereto, including but not limited to, the costs of installation, protection, maintenance, and removal of such temporary crossing, contractual liability insurance thereon, and incidental work such as drainage facilities and removal, alteration and replacement of railroad fences.

105.08-Cooperation between Contractors. The Department reserves the right, at any time, to contract for and perform additional work on or near the Work covered by the Contract. When separate Contracts are let within the limits of any 1 project, the Contractors involved shall cooperate fully with each other. Each Contractor shall conduct his work and place and dispose of his materials so as not to interfere with or hinder the progress or completion of the portions of the Work being performed by another Contractor within the project limits. Each Contractor shall join his work with that of others in an acceptable manner and shall perform it in proper sequence with regard to the work of other Contractors. Each Contractor involved shall assume all liability, financial or otherwise, in connection

with his Contract, and shall protect and save harmless the Department from any and all damages and claims that may develop because of inconvenience, delay, or loss experienced by other Contractors because of his presence and operations. In the event of confusion, friction or lack of cooperation between any 2 or more Contractors working within the confines of a given project, the Engineer shall have the specific authority to issue such orders as may be necessary to coordinate the performance of all the Work.

105.09-Construction Stakes. All lines profiles, grades and measurements necessary to the proper construction of the project will be furnished by the Engineer. The Contractor shall cooperate in the matter of setting and preserving stakes, bench marks, etc. for controlling the construction. Such stakes and markings as the Engineer may set for either his own or the Contractor's guidance shall be scrupulously preserved by the Contractor. In case of negligence on the part of the Contractor or his employees resulting in the destruction of such stakes or markings, an amount equal to the cost of replacing the same may be deducted from subsequent estimates due the Contractor, at the discretion of the Department.

If Construction Stakes, Lines and grades is included in the Proposal form as a bid item the following shall apply:

The Engineer will locate and reference the control points, i.e. PI's and POT's as indicated on the contract plans along the paper located centerline or the survey baseline for the project mainline only (ramps, sideroads, etc. will be the responsibility of the Contractor) and establish benchmarks for the proper layout of the work. The Contractor is required to make all calculations involved and to furnish and place all layout stakes including those required to establish the limits of the Right-of-Way as shown on the plans or as directed by the Engineer.

The Contractor shall cooperate with the involved utilities by timely locating highway features such as culverts, manholes, catchbasins, substructure elements of bridges, guardrail, etc., to avoid conflicts with utility installations. The Contractor will be required to provide stakes for ROW or slopes, ditch or stream bed grades, or other essential survey staking to prevent utility conflicts with the highway construction. Frequently, this will be required as the first item of work, and at any location on the project as directed by the Engineer. In the event the contract requires the Contractor to adjust and/or relocate utility facilities, all layout of this work shall be the responsibility of the Contractor.

The Contractor shall be responsible for the placement and preservation of adequate ties to all control points, whether established by him or found on the project, necessary for the accurate re-establishment of all base lines or center lines shown on the plans.

Cross sections are to be used for reference only. All dimensional details shown on the Plans, including elevations, shall be checked by the Contractor to assure accuracy of the required layout. All bridge substructures shall be checked as to location, dimensional layouts and

elevations, by means of two independent layout methods. The Contractor shall also be required to provide ROW or slope stakes, ditch or stream bed grades, or other essential survey staking as directed by the Engineer. Any errors and apparent discrepancies found in previous surveys, or in either the specifications or the special provisions, shall be called to the Engineer's attention by the Contractor for correction or interpretation prior to proceeding with the work. All stakes, references and batter boards including original, additional or replacement which may be required for the construction operations, shall be furnished, set and properly referenced by the Contractor. He shall be solely and completely responsible for the accuracy of the line and grade of all features of the work.

Where pre-splitting is specified, the Contractor shall provide the actual longitudinal profile of the rock surface to the Engineer for review and, where applicable, for adjustment of the width of the catchment area prior to any pre-splitting activity.

The Department reserves to itself the responsibility for making all measurements and surveys that involve the determination of final pay quantities, including original and final cross sections for all earthwork. In addition, sufficient field checks of existing streams, drainage, structures, pavement elevations, road and street tie points, etc., shall be conducted by the contractor to ensure the plan proposed work will correspond with the existing and/or proposed surroundings

Upon request of the Engineer, the Contractor shall furnish copies of all data used in establishing line and grade for all features of work, included, but not limited to, the data used in setting and referencing all stakes and layout markings.

When requested by the Engineer, the Contractor shall provide safe facilities for convenient access by the Department forces to control points, batter boards and references.

All staking shall be performed by qualified engineering or surveying personnel who are trained, experienced and skilled in construction layout and staking of the type required under the contract and who are acceptable to the Engineer. The personnel shall perform this staking under the direct supervision of a Tennessee licensed Professional Engineer, of engineering background experienced in the direction of such work and acceptable to the Engineer.

Prior to the first payment to the Contractor for the performance of lines and grades on the project, the Contractor shall submit to the Engineer a certified listing of personnel used in the performance of the lines and grades item. This certified listing is to be kept current.

The Contractor shall not engage the services of any person or persons who are or have been, during the period of the contract, in the employment of the Tennessee Department of Transportation (except regularly retired employees) without the written consent of the Engineer. In addition, the Contractor shall not engage the services of any firm or any principal officer or employee of a firm that participated in the development of the design of the project to be constructed under this contract.

The Engineer may check the control of work, as established by the Contractor, at any time as the work progresses. The Engineer, at any time throughout the project life, may request documentation, ground control(stakes, etc.), or other information as may be needed for his check on the control of the work. The Contractor will be informed of the results of these checks, but the Department by so doing in no way relieves the Contractor of his responsibility for the accuracy of the layout work. The Contractor shall, at his expense, correct or replace as required any deficient layout and construction work which may be the result of inaccuracies in his layout operations or of his failure to report inaccuracies in his layout operations or his failure to report inaccuracies found in work done by the Department or by others. If, as a result of these inaccuracies, the Department is required to make further studies, redesign, or both, all expenses incurred by the Department due to such inaccuracies may be deducted from any monies due the Contractor.

The Contractor shall furnish all necessary personnel, engineering equipment and supplies, materials, transportation, and work incidental to the accurate and satisfactory completion of this work.

105.10-Authority and Duties of Inspectors. Inspectors employed by or contracted with the Department will be authorized to inspect all work done and all materials furnished. Such inspection may extend to any part or to all of the Work and to the preparation, fabrication, or manufacture of materials to be used. The Inspectors will have the authority to reject defective material and to suspend any construction that is being improperly done, subject to final decision by the Engineer. Inspectors will not be authorized to revoke, alter, enlarge, or relax the provisions of the Specifications, nor will they be authorized to approve or accept any portion of the completed project, or to issue instructions contrary to the Plans and Specifications. At the request of the Contractor, instructions from an Inspector may be had in writing on important items.

105.11-Inspection of Work. All materials and each part or detail of the Work shall be subject to inspection by the Engineer, or his representative. He shall be given free access to all parts of the Work at all times and shall be furnished all information, facilities, and assistance by the Contractor as may be required to make complete and detailed inspection. Any work done or materials used without supervision or inspection by an authorized Department representative may be ordered removed and replaced at the Contractor's expense unless the Department representative failed to inspect after having been given reasonable notice in writing that such portion of the Work was to be performed.

At any time before acceptance of the Work, the Contractor shall remove or uncover such portion thereof as may be directed. If examination discloses that the Work is acceptable under the terms of the Contract, the Contractor shall return it to the original condition, and the cost of exposing the Work for examination and of returning it to the original condition shall be paid for as Extra Work. If the Work exposed and examined does not prove acceptable, the cost of uncovering, or removing, of replacing all of

the material involved, in full accordance with the Specifications and Plans, and of restoring the Work, shall all be at the expense of the Contractor.

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 the 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 the Contract, and shall in no way interfere with the rights of either party hereunder.

Upon failure on the part of the Contractor to comply forthwith 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 to deduct the costs from any monies due the Contractor. In the event that monies due or to become due the Contractor are not sufficient to defray the costs of such repairs or replacements, then the Department will hold the Contractor's Surety liable for the costs incurred. Any Construction performed by the Department under these provisions will not waive any provisions of the Contract nor relieve the Contractor in any way the responsibility for the construction performed by him.

105.12-Removal of Unacceptable and Unauthorized Work. All work which is rejected as unacceptable in accordance with the provisions of **Subsection 105.03** above, and any other portions of the Work found to be unacceptable prior to final acceptance of the Work, whether as the result of poor workmanship, the use of defective materials, damage through carelessness, or any other cause, shall be removed immediately and replaced in an acceptable manner.

Work which has been done without lines and grades having been given by the Engineer or being established by the Contractor's forces, if appropriate, work done contrary to the instructions of the Engineer, work done beyond the lines shown on the Plans or as given, or any Extra Work done without authority will be considered as unauthorized work and may not be paid for under the Contract. Work so done may be ordered removed or replaced at the Contractor's expense.

105.13-Completion of Specific Sections of a Project. The Department may accept a section or sections of a project before the entire project is completed. Such section (s) shall be of reasonable length, as determined by the Engineer, and shall be completed in full accordance with the Plans, Specifications and all other applicable provisions of the Contract. When such section (s) is fully completed, the Engineer, after final inspection, will accept the section (s) and the Contractor will be relieved of any further work in connection therewith or any cost of maintenance thereof.

The Department may require a specific section or sections of a project to be completed prior to the completion of the entire project. Such section (s) shall be completed in full accordance with the Plans, Specifications and all other applicable provisions of the Contract. All provisions of the above paragraph regarding final inspection, acceptance, further work and maintenance shall apply.

The acceptance of a section or sections of a project shall in no way void or alter any of the terms of the Contract.

105.14-Opening Sections of a Project to Traffic. On the order of the Engineer, certain sections of a project, hitherto closed, shall be opened to traffic even though they are not completed. If the paving, including the connections through the structures is completed on any of the sections involved, the Engineer, after final inspection, may accept the pavement and the Contractor will be relieved of further expense in connection therewith. If, on any of the sections ordered opened, the pavement is not fully completed, then the Contractor shall maintain the paving as outlined in **Subsection 104.04**. In both cases, the other portions of the Work in the same sections of the project shall be maintained by the Contractor at his own expense as provided elsewhere herein.

105.15-Acceptance. Upon due notice from the Contractor of presumptive completion of the entire project, the Engineer will make an inspection. If all construction provided for and contemplated by the Contract is found to be completed to his satisfaction, then that inspection shall constitute the final inspection and the Engineer will make the final acceptance and notify the Contractor in writing of his acceptance as of the date of the final inspection.

If, however, the inspection discloses any work, in whole or in part, as being unsatisfactory, the Engineer will give the Contractor the necessary instructions for correction of same, and the Contractor shall immediately comply with and execute such instructions. Upon correction of the Work, another inspection will be made which shall constitute the final inspection, provided the Work has been satisfactorily completed. In such event, the Engineer will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

105.16-Claims for Adjustment and Disputes. If, in any case, the Contractor deems that additional compensation is due him for work or material not clearly covered in the Contract or not ordered by the Engineer as Extra Work, as defined herein, the Contractor shall notify the Engineer, in writing, of his intention to make claim for such additional compensation before he begins the work on which he bases the claim. If such notification is not given, and the Engineer is not afforded proper facilities by the Contractor for keeping strict account of actual cost as required, then the Contractor hereby agrees to waive any claim for such additional compensation. Such notice by the Contractor, and the fact that the Engineer has kept account of the cost as aforesaid, shall not in any way be construed as proving or substantiating the validity of the claim. If the claim, after consideration by the Engineer, is found to be just, it will be paid as Extra Work. Nothing in this Subsection shall be construed as establishing any claim contrary to the terms of **Subsection 104.02**.

105.17-Alternative Equipment. While certain of the Specifications may provide that equipment of a particular size and type, or certain methods are to be used to perform portions of the Work, it is to be understood that the development and use of new or improved equipment or methods are to be encouraged.

The Contractor may request, in writing, permission from the Engineer to use equipment of a different size or type in place of the equipment specified. Requests to use new methods should be handled the same way.

If such permission is granted by the Engineer, it shall be understood that permission is granted for the purpose of testing the quality of work actually produced by such equipment or method and is subject to continuous attainment of results which are equal to, or better than that which can be obtained with the equipment or method specified. The Engineer shall have the right to withdraw such permission at any time that he determines the alternative equipment or method is not producing work that is equal, in all respects, to that which can be produced by the equipment and methods specified. Upon withdrawal of such permission by the Engineer, the Contractor will be required to use the equipment or method originally specified and shall, in accordance with the directions of the Engineer, remove and dispose of or otherwise remedy, at his expense, any defective or unsatisfactory work produced with the alternative equipment or method.

The Contractor shall not have any claim against the Department for either the withholding or the granting of permission to use alternative equipment or method or for the withdrawal of such permission.

Permission to use alternative equipment in place of equipment specified will only be granted where such equipment is new and improved, or more adaptable to the work being performed. The approval for use of particular equipment on any project shall in no way be considered as an approval of the use of such equipment on any other project. Permission to use alternative methods will be given under the same rules governing equipment.

COMPENSATION

105.18-Method of Measurement. Construction Stakes, Lines and Grades will be measured by the unit for the completion of the work as described above, and partial payment will be made according to the following schedule:

PAYMENT SCHEDULE

Percent of Total Contract Amount of Estimate	Percent of Construction Stakes, Lines and Grades Lump Sum Bid Item
2%	20%
10%	40%
20%	50%
40%	65%
60%	80%
80%	100%

105.19-Basis of Payment. Partial payments for Construction Stakes, Lines and Grades will be made on the basis of a percentage of the lump sum price bid as indicated in the Payment Schedule above.

The quantity, determined as provided above, will be paid for at the contract unit price bid for Construction Stakes, Lines and Grades, which price and payment shall be full compensation for furnishing, setting, maintaining, and resetting, when necessary, the stakes, and for furnishing all engineering personnel, equipment, materials, and all incidentals thereto.

SECTION 106-CONTROL OF MATERIALS

106.01-Quality of Materials	44
106.02-Material Information	44
106.03-Local Material Sources	44
106.04-Sampling and Testing, or Inspection	44
106.05-Source or Plant Inspection.....	45
106.06-Field Laboratory.....	45
106.07-Notice of Source or Arrival of Materials	47
106.08-Handling and Storage of Materials.....	47
106.09-Resampling and Testing, or Reinspection	48
106.10-Defective Material	48

SECTION 106-CONTROL OF MATERIALS

106.01-Quality of Materials. It is the intent of these Specifications that all of the material used in the Work shall conform to all of the quality requirements of the Contract, and that they shall be so controlled and incorporated as to produce completed construction which is fully acceptable under the terms of the Contract.

Where reference is made in any of the contract documents to certain manufacturers' materials or products, it is not the intent to preclude the use of others, but rather to establish minimum acceptable design standards. The Contractor may substitute material and products of other manufacturers provided they meet the minimum design standards and are approved by the Department.

106.02-Material Information. When the Department has readily available test reports on materials from local sources near the project, copies thereof will be furnished to the Contractor, covering each source concerning which specific request is made. In furnishing such reports, the Department acts as an agent of the Contractor and will not be responsible to him if the materials should fail to conform to the test reports either as to quality or quantity.

106.03-Local Material Sources. If the Contractor desires preliminary tests of local materials, he shall deliver samples of the materials, prepaid, to the Laboratory. Tests will be made on such samples, up to a reasonable number, and in such time as the work load in the Laboratory may permit. It must be understood that the development of acceptable test results on preliminary samples will not guarantee acceptance of materials from the same source later.

106.04-Sampling and Testing, or Inspection. All materials will be sampled and tested, or inspected by the Engineer, and unless accepted by the Engineer on the basis of such sampling and testing, or inspection, shall not be incorporated in the Work. Any portions of the Work in which untested or unaccepted materials are used without written permission of the Engineer shall be performed at the Contractor's risk, and may be considered as unacceptable and unauthorized, in which case such portions of the Work will not be paid for. Unless otherwise designated, sampling and testing or inspection will be conducted in accordance with the most recently published methods of AASHTO or ASTM which were current on the date of the Advertisement. Whenever reference is made to other Specifications such as Federal Specifications, Specifications of the AASHTO or to the ASTM Specifications, it shall be understood that the Specification, whether tentative, standard, or interim, current at the date of Advertisement shall apply. All sieves used in testing shall conform to AASHTO M 92. The Contractor shall furnish all materials for samples at no cost to the Department. Sampling and testing, or inspection, will be performed at the expense of the Department unless otherwise specified herein, and only by qualified representatives. All materials which the Department does not elect to sample and test or inspect at the source, will be sampled for testing,

or inspected, after delivery to the site of the Work or to the batching plant at which further processing will be performed. The Contractor shall furnish, or have furnished, all facilities for, and all reasonable assistance in, the securing and transportation of samples, and the movement of materials being inspected.

The sampling and testing frequencies for the acceptance, quality control, independent assurance, verification, or certification for materials and products shall be in accordance with Departmental procedures.

The Engineer may accept certain materials or assemblies based on Certificate of Compliance stating that such materials or assemblies fully comply with the requirements of the Contract. The certificate shall be signed by the manufacturer or his authorized representative. A Certificate of Compliance in which the lot is clearly identified must accompany each lot of such materials or assemblies delivered to the work. All certification submittals must be accompanied with the necessary paperwork as specified in Departmental Procedures.

A Certificate of Compliance for a non-bid item, not permanently incorporated in the work, but that must meet a designated specification, shall be furnished the Engineer upon delivery of the material to the project and prior to its being used.

Materials or assemblies accepted on the basis of Certificate of Compliance may be sampled and tested at any time and if found not in conformity with contract requirements will be subject to rejection.

106.05-Source or Plant Inspection. The responsibility for securing satisfactory material rests entirely with the Contractor. However, if the volume of any given material, the progress of construction, and other considerations of interest to the Department so justify, the Department may undertake the inspection of materials at the source of supply. Such inspection will be undertaken only when the Engineer is assured of the fullest cooperation and assistance of the Contractor and of the material producer involved. This includes copies as required of all orders, shipping information, and other pertinent papers.

The representatives of the Department shall have free and safe entry at all times to such parts of the plant as concern the manufacture and production of material for the project. When the said representatives are in or about the premises referred to above, in the course of their employment, they shall be deemed conclusively to be invitant of the Contractor. If the Contractor is not the owner of the place where fabrication, preparation, or manufacture are in progress, the owner thereof shall be deemed to be the agent of the Contractor, with respect to the obligation assumed hereunder.

106.06-Field Laboratory. The Contractor shall furnish Type A or Type B laboratory(s) or both, as required to be used exclusively for testing purposes. Suitable field laboratories or inspection offices shall also be required at batch plants and sources or plants at which off-site inspection is provided by the Department under **Subsection 106.05**. The laboratory(s) shall be located as directed by the Engineer. The building(s) shall be installed, equipped and ready for use prior to the time the Contractor's operations are such as to require field testing. When a concrete batch plant

is located near a Type B Laboratory used for testing at an asphalt plant, joint use may be approved by the Engineer provided there is ample time and equipment to perform all necessary testing for both operations.

All contractor and producer laboratories must be inspected and qualified in accordance with TDOT procedures before any work can be done.

Type A

A Type A Laboratory shall be a building, room or dedicated area having at least 120 s.f.(11 m²) of floor area with a minimum width of 8 ft.(2.4m) and a minimum height of 7 ft.(2.1 m). It shall be a building or a portion of a building that is floored, roofed, sealed inside, weather tight and furnished with electricity. It shall be equipped with adequate work benches, cabinets and drawers. It shall be provided with suitable heat and air conditioning and shall be equipped with a gas or electric stove with four burners for drying materials. The laboratory shall be provided with lights and electrical outlets and shall have adequate ventilation for the test being performed.

When the determination of aggregate gradation is required, the following equipment shall be required:

1. Scales of appropriate capacity and design to weigh the required samples. Scales are to be sensitive to within 0.2 per cent of the sample to be weighed. Standard weights shall be available for scale calibration.
2. Screens of appropriate size and mesh to separate the samples into the required series of sizes. Woven wire cloth shall conform to AASHTO M 92. Screens for running gradations of coarse aggregates shall have a minimum area of 2.33 s.f.(0.22 m²).
3. A mechanical shaker suitable for running both coarse and fine aggregate shall be furnished. The mechanical shaker shall be approved by the Engineer.
4. Facilities, to perform wash tests (AASHTO T 11) which include an adequate, suitable water supply.

Type B

In addition to meeting all of the requirements for a Type A Laboratory, a Type B Laboratory shall be equipped with the following:

1. Laboratory shall have a minimum of 300 s.f.(28 m²).
2. Laboratory type oven capable of maintaining a temperature of 230° F ± 9° F(110° C ± 5° C).
3. Two vacuum extractors, each having a minimum bowl capacity of 100 ozt (3,000 grams) meeting the requirements of ASTM D 2172, or 1 vacuum extractor and 1 ignition furnace meeting the requirements of AASHTO T 308. It shall be the Contractors responsibility to supply an adequate amount of an approved solvent from the Department's Qualified Products List and to

provide for storage and disposal of the waste solvent in accordance with the regulations promulgated under the Tennessee Hazardous Waste Management Act.

To insure adequate ventilation, the extractor and drying equipment shall be housed in an enclosed hood. The hood shall be equipped with an exhaust fan vented to the outside and mounted at the appropriate location in order to remove the vapors of the solvent. Where the extractor is installed outside the laboratory, only the drying equipment shall be vented as outlined above.

4. Apparatus meeting the requirements of AASHTO T 166, Section 3.1 and 3.2 for determining the bulk specific gravity of a compacted asphalt mix will be required. When required by the Contract, an apparatus meeting the requirements of AASHTO T 209, Section 3.1 through 3.5 for determining the maximum specific gravity of a asphalt mix will be required.
5. A minimum of 2 suitable thermometers with an approximate temperature range of 50-400° F(10-200° C) shall be required.
6. Furnace capable of performing loss on ignition tests for a minimum 10 ozst (600 grams) sample.
7. When required as specified in **Subsection 407.03**, equipment needed to perform Marshall tests as outlined in **AASHTO T 245**. The compactor shall be a Marshall Mechanical type with rotating mold(s) and slanted foot hammers that produce a modified kneading action.

Unless otherwise indicated in the Contract, Field Laboratories will not be paid for as a separate item but will be considered a responsibility to be assumed by the Contractor in connection with stipulated pay items.

106.07-Notice of Source or Arrival of Materials. The Contractor shall purchase all materials sufficiently in advance of need to permit the Engineer to provide for sampling and testing, or inspection. He shall furnish the Department, in writing, the name and location of suppliers that will furnish materials for the project. In case of materials concerning which the Department does not elect to perform sampling and testing, or inspection at the source, the Contractor shall advise the Engineer in writing within twenty-four hours after the arrival on the site of the Work of deliveries of material requiring sampling for testing, or inspection.

106.08-Handling and Storage of Materials. All materials shall be transported in tight, clean vehicles and shall not be subjected to contamination, segregation or other damage either in route to the job site or the batching plant or when moved from point to point at later stages.

Materials shall be stored so as to insure the preservation of their quality and fitness for use. When considered necessary, they shall be stored in weatherproof buildings, placed on wooden platforms, or other hard, clean surfaces and not on the ground, and shall be covered when directed. Stored materials shall be located so as to facilitate prompt inspection. Private property shall not be used for storage purposes without written permission of the owner or lessee. Use of portions of the rights-of-way for storage of

106

materials or erection of batching plants, requires specific approval of the Engineer.

106.09-Resampling and Testing, or Reinspection. At the option of the Engineer, all materials are subject to resampling and testing, or reinspection at any time after delivery to the site of the Work, or to any batching plant. Such materials are subject to rejection if found unacceptable under these Specifications.

106.10-Defective Material. All materials found to be unacceptable for any reason shall not be delivered to the site if rejected elsewhere, or shall be removed from the site or processing batch plant if rejected there.

**SECTION 107-LEGAL RELATIONS AND
RESPONSIBILITY**

107.01-Laws to be Observed	50
107.03-Permits, Licenses, and Taxes	51
107.04-Patented Devices, Materials, and Processes	51
107.05-Restoration of Surfaces Opened by Permit.....	51
107.06-Federal Aid Provisions	51
107.07-Bridges over Navigable Waters	52
107.08-Protection of Streams, Lakes and Reservoirs	52
107.09-Sanitary Provisions.....	54
107.10-Public Convenience and Safety	54
107.11-Use of Explosives	54
107.12-Forest Protection	54
107.13-Promptness of Performance	55
107.14-Legal Responsibilities of the Contractor	55
107.15-Contractor's Responsibility for Work	56
107.16-Liability Insurance	56
107.17-Rights-of-Way	56
107.18-Personal Liability of Public Officials	56
107.19-Claims Against the Department	57
107.20-No Waiver of Legal Rights.....	57
107.21-Air Pollution Responsibilities	57
107.22-Hazardous and/or Toxic Waste	57
107.23-Certified Payrolls	58
107.24-Quarantine Restrictions.....	58

SECTION 107-LEGAL RELATIONS AND RESPONSIBILITY

107.01-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. He shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees, and he and his Surety shall protect and indemnify the State and its representatives against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by himself or his employees.

Should the Contractor's activities relating to the Work be in violation of any of the above laws or regulations and therefore cause fines and/or penalties to be assessed against the Department, said fines and/or penalties will be deducted from monies due the Contractor.

107.02-Load Restrictions on Projects Under Construction. 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. The Contractor shall be responsible for all damages done by his hauling equipment.

In such cases where it is necessary to haul material over a structure, other than structures with posted load limitations, the Contractor shall be required to limit the gross loads to the weights listed below. The loads posted for structures with weight limitations shall not be exceeded unless adequate shoring is provided and written permission is granted by the Department's Division of Structures.

Maximum axle load	32,000 lbs.
	(14,515 kgs)
Maximum load per axle on tandem axles	24,000 lbs
	(10,886 kgs.)
Maximum total load	90,000 lbs.
	(40,824 kgs)

He will be further required to place approved temporary guides on the bridge floor, as directed by the Engineer, in order to position the wheel loads as nearly as possible directly over the bridge girders. He shall keep the bridge floor clean so as to reduce impact forces. The maximum speed permitted will be 15 miles(25 kilometers) per hour.

Upon completion of hauling over the bridge, the Contractor will be required to clean the bridge floor, curbs and rail in a manner acceptable to the Engineer.

107.03-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, except those permits, licenses, etc. which are required to be obtained by the Department.

107.04-Patented Devices, Materials, and Processes. If any design, device, material, or process covered by letters of patent or copyright, are used in the construction of the Work, the Contractor shall provide for their use by suitable legal agreement with the patentee or owner. The Contractor and the Surety shall indemnify and save harmless the State, any political subdivision within the State, or any affected third party from any and all claims for infringement by reason of the use of any such patented design, device, material, process, trademark or copyright. The Contractor and the Surety shall indemnify the State for costs, expenses, and damages that it may be obligated to pay by reason of an infringement, during the prosecution or after the completion of the Work.

107.05-Restoration of Surfaces Opened by Permit. The right to construct or reconstruct any utility service in the highway, road, or street which is under construction or reconstruction as part of the project, or to grant permits for same, is expressly reserved to the Department for the proper authorities of the municipality or other governing units in which utility work is done. During the life of the Contract, the Contractor shall allow parties bearing such permits, and only such parties, to make openings in the highway. Permits, in general, will require the utility companies to restore the Work to the condition that prevailed prior to the utility adjustment; however, when restoration is not made by the utility and when ordered by the Engineer, the Contractor shall make all necessary repairs due to such openings in a fully acceptable manner. The costs of this work will be paid for at the Contract unit price, or as Extra Work as provided for under **Subsection 104.03**. The Contractor shall not be entitled to any damage either for the digging up of the street or for any delay occasioned thereby.

107.06-Federal Aid Provisions.

- (a) When the United States Government pays all or any part of the cost of a project, the Federal laws and the rules and regulations made pursuant to such laws shall be observed by the Contractor, and the Work shall be subject to the inspection of the appropriate Federal Agency. Such inspection will not make the Federal Government a party to this Contract, and will in no way interfere with the rights of either party hereunder.
- (b) All excavated materials from outside the Rights-of-Way shall be obtained in compliance with **Section 106** of the **National Historic Preservation Act (16 U.S.C. S470(f))**. The Contractor shall furnish the Engineer archaeological clearance certified by the State Historic Preservation Officer on all noncommercial material

sources requiring excavation, except when the source is a previously certified area shown on the Plans. This certification must be furnished before any excavation work is started.

Regardless of prior certification, if prehistoric remains or human burials are encountered at any time during the Contractor's operation, such operation shall be suspended and the Engineer and the State Historic Preservation Officer notified immediately.

107.07-Bridges over Navigable Waters. All work on navigable waters shall be so conducted that free navigation of the waterways will not be interfered with and that the existing navigable depths will not be impaired except as allowed by permit issued by the U. S. Army Corps of Engineers, or U. S. Coast Guard.

The Contractor shall comply with all provisions and requirements set forth in this permit. All required correspondence with the Coast Guard, or such agency as may have jurisdiction, shall be routed through the office of the Construction Engineer.

The Contractor shall comply fully and faithfully with, the various requirements established by the Corps of Engineers, the U. S. Coast Guard, and other agencies which may have jurisdiction relative to construction work in and over a navigable stream which are applicable to this contract and which may not be covered by existing permits. Such matters include, but are not necessarily limited to dredging, location and safeguards for cofferdams and temporary falsework, anchorage of barges and construction equipment, temporary restriction of channel width, lighting during construction, and removal of all temporary construction.

107.08-Protection of Streams, Lakes and Reservoirs. The Contractor shall exercise every reasonable precaution throughout the life of the project to prevent silting of rivers, streams and impoundments (lakes, reservoirs, etc.). Construction of drainage facilities as well as performance of other contract work which will contribute to the control of siltation shall be carried out in conjunction with earthwork operations or as soon thereafter as is practicable.

Prior to suspension of construction operations for any appreciable length of time, the Contractor shall shape the top of earthwork in such a manner as to permit the runoff of water and shall construct temporary earth berms along the top edges of embankments to intercept runoff water. In the immediate vicinity of rivers, streams or impoundments, temporary erosion and sediment control measures such as berms, dikes, slope drains (constructed of concrete, metal, or wood; or stabilized by paving or covering with waterproof materials), or sedimentation basins deemed necessary by the Engineer shall be provided and maintained by the Contractor until the permanent drainage facilities and erosion control features are completed and operative.

The Department will acquire any necessary permits, related to "waters of the United States" as defined in **33 CFR Part 323** or "waters of the State", for construction indicated on the plans. These permits will govern the Contractor's method of operations. The Contractor will be responsible for obtaining necessary permits related to operations not covered by the

Plans, including use of material excavation and disposal sites. It shall be the Contractor's responsibility to determine if additional permits are required. Any permit required by the Contractor's method of construction shall be his responsibility except that the Department may assist in the acquisition of additional permits when deemed feasible and upon written request by the Contractor.

Unless otherwise approved in writing by the Engineer, construction operations in rivers, streams and impoundments shall be restricted to those areas where channel changes are to be constructed and to those areas which must be entered for the construction of temporary or permanent structures. There shall be no in-stream work where a channel change is required until after the new channel has been completed and the water diverted to the new channel. Rivers, streams and impoundments shall be cleared as soon as practicable of all falsework, temporary piling, debris, or other obstructions placed therein or caused by the construction operations.

Fording of live streams with construction equipment will not be permitted if such fording causes muddying of the stream in which case temporary bridges or other structures will be required.

The location of all local material pits (including borrow pits), other than commercially operated sources, and all waste areas shall be subject to the approval of the Engineer. Construction operations in these areas shall be so scheduled and conducted by the Contractor that during and after completion of the work, siltation of rivers, streams and impoundments will be avoided or minimized.

The Contractor shall exercise every reasonable precaution throughout the life of the project to prevent the discharge of any substance into the waters of the State or to place or cause any substance to be placed where they, by themselves or in combination with others, cause harm, potential harm or detriment or damages by alteration of the physical, chemical, biological, bacteriological or radiological properties of such waters including but not limited to changes in temperature, taste, color, turbidity, or odor as will result or likely result in harm, potential harm or detriment to the public health, safety, or welfare, or the foregoing to the health of animals, birds, fish or aquatic life or render or will likely render such waters potentially less useful for domestic, municipal, individual, agricultural, recreational, or other reasonable uses, or leave or will leave such waters in such condition as to violate any standards of water quality. Pollutants such as chemicals, fuels, lubricants, bitumens, raw sewage and other harmful materials shall not be discharged into or alongside of rivers, streams, and impoundments or into natural or manmade channels leading thereto. In the event that a discharge as described above occurs, the work shall cease and the Contractor shall notify the Tennessee Department of Environment and Conservation, Water Pollution Control in addition to taking immediate actions to contain and remediate the discharge. All costs for containment and remediation will be borne by the Contractor.

If the work involves painting or texturing of bridges over the waters of the State, prior to the start of such work, the Contractor shall submit to the Engineer for approval a proposed remedial plan to contain and remove any accidental discharge into the water. On the receipt of this proposed plan, the Department will assign an Inspector to insure adherence to all Contract

provisions and the Inspector will have full authority to suspend any work that is not in compliance with the specifications.

The Contractor shall conduct and schedule his operations so as to avoid interference with the movement of migratory fish.

Unless otherwise provided for in the Contract, the work described herein will not be paid for directly but will be considered as a subsidiary obligation of the Contractor covered under the various contract items of work.

107.09-Sanitary Provisions. The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of his employees as may be necessary to comply with the requirements of the State and local Boards of Health, or of other bodies or tribunals having jurisdiction.

107.10-Public Convenience and Safety. The Contractor shall conduct his work at all times so as to assure the least possible obstruction to traffic. The safety and convenience of the general public and the residents along the highway and the protection of persons and property shall be provided for by the Contractor as specified under **Subsections 104.04, 104.05, 104.06, and 104.08.**

107.11-Use of Explosives. When the use of explosives is necessary for the prosecution of the work, the Contractor shall exercise the utmost care not to endanger life or property, including new work. The Contractor shall be responsible for all damage resulting from the use of explosives.

All explosives shall be stored in a secure manner in compliance with all laws and ordinances, and all such storage places shall be clearly marked.

The Contractor shall notify each property owner and public utility company having structures or facilities in proximity to the site of the work of his intention to use explosives. Such notice shall be given sufficiently in advance to enable them to take such steps as they may deem necessary to protect their property from injury.

107.12-Forest Protection. In carrying out work within or adjacent to State or National Forests, or other wooded areas, the Contractor shall comply with all regulations of the State Fire Marshal, Division of Fire Prevention, Department of Insurance and Banking of the State, or other authority having jurisdiction, governing the protection of forests and the carrying out of work within forests, and he shall observe all sanitary laws and regulations with respect to the performance of work in forest areas. He 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 tanks, and other structures in accordance with the requirements of the Forest Supervisor.

The Contractor shall take all reasonable precautions to prevent and suppress forest fires and shall require his 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.

107.13-Promptness of Performance. These Specifications, and orders issued by the Engineer, describe acts, which in many cases, if not performed by the Contractor, may result in danger to life or property, loss to the Department, or delay to the Work. If in any instance, the Contractor fails to perform any required act with appropriate or required promptness, the Department reserves the right for the Engineer on 48 hours written notice, to have the necessary act performed by others. In such case, the Department will deduct the costs involved from monies due or to become due the Contractor; otherwise the Engineer may proceed as provided for under **Subsection 108.08**.

107.14-Legal Responsibilities of the Contractor. In addition to the specific legal responsibilities set forth in **Subsections 107.01** through **107.12**, the Contractor is charged with other broad legal responsibilities under these Specifications. These responsibilities include but are not limited to various areas as follows:

- (a) To perform the Work in accordance with all of the terms of the Contract (**Subsection 104.01**), including Construction Changes (**Subsection 104.02**), the supply and use of materials of the required quality (**Subsection 106.01**), the maintenance, during construction and until final acceptance, of all completed portions of the Work (**Subsection 104.06**), and the final cleanup (**Subsection 104.11**).
- (b) To maintain traffic (**Subsection 104.04**), including the use of all proper and necessary protective devices and procedures (**Subsection 104.05**).
- (c) To conduct all operations so as to protect the members of the general public, residents near the project, workmen engaged in or on the Work, and representatives of the State, the Federal Government and railroads, while they are engaged in duties connected with the Work. This responsibility also extends to the protection of public and private property under all circumstances.
- (d) To hold harmless and defend against all claims of whatsoever nature arising out of the Work, the State, any political subdivision thereof, and all employees of the State, the Federal Government, and any railroad involved. This responsibility generally extends to innocent third parties.
- (e) To pay just claims for materials, supplies, equipment, tools, labor, and all other items, against him or any Subcontractor, in connection with the Work.

It is the intent of these Specifications that the Contractor shall familiarize himself fully with these responsibilities and with the many others which are clearly inferred from the Contract but are not enumerated here; and that he makes certain that all things required to be performed are

performed in such manner as to fulfill the responsibilities involved and that all appropriate and required precautions be taken at all times.

107.15-Contractor's Responsibility for Work. Until final written acceptance of the project by the Engineer, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part thereof by the action of the elements or from any other cause, whether arising from the execution or the non-execution of the Work. The Contractor shall rebuild, repair, restore and make good all injuries or damages to any portion of the Work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except damage to the Work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God, of the public enemy or governmental authorities.

Damage to acceptably installed items of construction, caused by the traveling public on sections of a project open to traffic shall be replaced by the Contractor at the applicable Contract unit price. An acceptably installed item shall be complete in place meeting the required specifications. For the purpose of this section, the acceptably installed items of construction shall be limited to the following permanently installed items used for safety and traffic control. The safety and traffic control items shall be traffic signal systems, signs, lighting, guardrail, impact attenuators, median barriers, parapet rails or permanent pavement markings. If the damage to the above items necessitates only minor repairs, the work shall be performed in accordance with **Subsection 109.04** or as directed by the Engineer.

107.16-Liability Insurance. In addition to any other forms of bonds or guaranties or insurance required under the Contract, when any part of the Work is to be constructed on railroad-owned property, the Contractor shall procure and maintain liability insurance coverage of the kinds and amounts, and in the manner stipulated in the Special Provisions of the Contract. If a special provision is not stipulated in the Contract, the Contractor shall coordinate with the Railroad to determine the disposition of railroad protective insurance and any associated flagging. The costs involved in furnishing the insurance specified will not be paid for directly but shall be included in the unit price bid for other items of construction.

107.17-Rights-of-Way. The Department will be responsible for the securing of all necessary Rights-of-Way in advance of construction, except that the Contractor waives any and all claims for interference, delay, or damage if he accepts a limited work order or unconditional work order to proceed with the construction knowing that the Rights-of-Way have been only partially secured or that said Rights-of-Way are still encumbered.

107.18-Personal Liability of Public Officials. In carrying out any of the provisions of these Specifications, or in exercising any power of 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 State.

107.19-Claims Against the Department. No claims against the Department will be considered except those filed in exact accordance with **Subsection 105.16.**

107.20-No Waiver of Legal Rights. The Department 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 Department shall not be precluded or estopped, notwithstanding any such measurement, estimate, or certificate and payment in accordance therewith, from recovering from the Contractor or his Sureties, or both, such damage as it may sustain by reason of his failure to comply with the terms of the Contract. Neither the acceptance by Department, or any representative of the Department, 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 Department, shall operate as a waiver of any portion of the Contract or of any power herein 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.

107.21-Air Pollution Responsibilities. The Contractor shall comply with all air pollution control rules, regulations, ordinances, and statutes which apply to any work performed pursuant to the Contract, including any air pollution control rules, regulations, ordinances and statutes, specified in the Tennessee Department of Environment and Conservation's "Air Pollution Control Regulations" or any municipal regulations pertaining to air pollution.

107.22-Hazardous and/or Toxic Waste. When the Contractor's operations encounter or expose any abnormal condition which may indicate the presence of hazardous or toxic waste, such operations shall be discontinued in the vicinity of the abnormal condition and the Engineer shall be notified immediately. The presence of barrels; discolored earth; metal, wood, etc.; visible fumes; abnormal odors; excessively hot earth; smoke; or other conditions which appear abnormal may be indicators of hazardous or toxic wastes and shall be treated with extraordinary caution. The Contractor's operations shall not resume until so directed by the Engineer.

Disposition of any hazardous or toxic waste encountered during construction shall be made in accordance with the requirements and regulations of the applicable Federal, State and/or local laws.

Where the Contractor performs work necessary to dispose of hazardous or toxic waste, payment will be made at the unit prices for pay items included in the contract which are applicable to such work; or where the

contract does not include such pay items, payment will be made as provided in **Subsection 104.03** for extra work.

107.23-Certified Payrolls. As specified elsewhere in the Contract, the Contractor and subcontractors shall submit certified payrolls to the Engineer each week in which any work is performed. During construction, if the work of the Contractor or subcontractor will be interrupted for a week or more, the following statement shall be placed on the signature sheet of the payroll for the last week in which work was performed: “No additional work will be performed until further notice.”

In the event a work stoppage of a week or more occurs which is not anticipated, the Engineer shall be furnished the following statement on the signature sheet of the payroll form for the week immediately after the week in which work was interrupted: “No work performed, and no work will be performed until further notice.”

When work has ceased in either case as stipulated above, the Contractor or subcontractor shall note the following statement on the payroll for the week on which work is resumed: “Last previous work was performed the week ending_____.”

107.24 -Quarantine Restrictions - Pest Control. Agricultural pests such as Soybean Cyst Nematode, Fire Ant and Japanese Beetle have infested certain areas in several Southeastern states including Tennessee. The Plant Pest Control Division of the U.S. Department of Agriculture and the Tennessee Department of Agriculture restrict the movement of certain items from infested areas to prevent the spread of these pests to non-infested areas.

Hay, straw or other baled plant material coming from Imported Fire Ant (IFA) Quarantine areas in Tennessee or from states other than Tennessee must be accompanied by a permit from that state’s Department of Agriculture or other appropriate regulatory agencies. The permit shall state that material has been inspected and found to be free of IFA.

Soil and construction equipment operating in regulated areas will be subject to plant quarantine regulations. In general, these regulations provide for the cleaning of equipment before it is moved from regulated areas. Complete information may be secured from State or Federal plant pest control inspectors. It will be the responsibility of the contractor to comply with all rules and regulations established by the Agricultural Department. This information may be obtained from:

Tennessee Department of Agriculture
Ellington Agricultural Center
Hogan Road - P.O. Box 40627
Nashville, Tennessee 37204
Phone: (615) 837-5338
e-mail:whaun@mail.state.tn.us

Contractors working in quarantine areas should contact the above agency at an early date in order not to delay the inspection and movement of equipment from an infested area.

SECTION 108-PROSECUTION AND PROGRESS

108.01-Subletting of Contract..... 60
108.02-Beginning of Construction..... 60
108.03-Prosecution of Construction..... 60
108.04-Character of Workmen; Methods and Equipment..... 61
108.05-Temporary Suspension of Construction..... 62
108.06-Determination of Time for Completion..... 62
108.07-Failure to Complete the Work on Time..... 63
108.08-Termination of the Contract..... 65

SECTION 108-PROSECUTION AND PROGRESS

108.01-Subletting of Contract. The Contractor shall not sublet, not allow second tier sublet, sell, transfer, assign, or otherwise dispose of the Contract or Contracts or any portion thereof or of his right, title, or interest therein, without written consent of the Engineer. In case such consent is given, the Contractor will be permitted to sublet or second tier sublet a portion thereof but shall perform with his own organization, work amounting to not less than 30% of the total original contract cost, except that any items designated in the contract documents as "Specialty Items" may be performed by subcontract or second tier sublet and the cost of any such Specialty Items so performed by subcontract and second tier subcontracting may be deducted from the total original cost before computing the amount of work required to be performed by the Contractor with his own organization.

When any portion of the Contract is to be sublet, the Contractor shall furnish to the Engineer, on the proper form and with the required number of copies, all statements of proposed subcontracts. Each proposed subcontract or tiered subcontract, must be approved by the Department before that particular subcontract is put into effect. The proper forms will be furnished to the Contractor by the Department upon request.

As a part of this proposal the Contractor agrees as follows:

- No person will work on this project under the terms of this contract except my legal employees and legal employees of my official Subcontractors.
- My books and records will be available for inspection by State or Federal auditors at any time to confirm the above requirement.

The provisions of the preceding 2 paragraphs will be incorporated into all subcontracts.

Violation of the terms of this section may subject the Contractor or Subcontractor to suspension from eligibility to bid on construction projects, at the discretion of the Commissioner.

No subcontracts, or transfer of Contract, shall in any case release the Contractor of his liability under the Contract and bonds.

108.02-Beginning of Construction. The Contractor shall not begin the Work prior to receipt of the "Work Order." The "Work Order" will stipulate the date on which it is expected the Contractor will begin the construction and from which date contract time will be charged.

108.03-Prosecution of Construction. The construction shall be conducted in such a manner as to assure its completion within the time set forth in the Proposal. Manpower and equipment as provided for in the plan of operations described in **Subsection 105.06**, plus adequate materials, shall be applied and provided so that construction of the various items or groups of items shall be carried out and completed in accordance with the schedule included in the plan. If for any reason, construction gets out of step with

the plan of operations or CPM if required, the Contractor shall offer for approval new scheduling that will assure timely completion. Otherwise, the Engineer may order revision as he deems necessary.

Progress of the Contract will be determined by either the time versus money or an anticipated schedule by the Contractor, if submitted. The anticipated schedule that the Contractor may submit at the start of a Contract normally may not deviate more than 15% from a straight-line curve beginning when the contractor commences work. If for any reason, the construction progress is 15% or more behind schedule the Contractor may be required to submit in writing and/or in person the reason for the unsatisfactory progress. If 2 or more Contracts are 15% or more behind the Contractor will be required to submit in writing and/or in person the reason for the unsatisfactory progress. If the Contractor cannot satisfactorily justify the unsatisfactory progress the Department may remove the Contractor from the Department's list of qualified bidders as specified in **Subsection 102.01(c)**. In addition to the Contractor above, any affiliated and/or subsidiary companies, companies in which the Contractor holds a significant interest and companies in which officers and/or stockholders hold a significant interest will be removed from the Department's list of qualified bidders. Appropriate written notice will be given to the Contractor.

A Contractor disqualified from bidding will not be reinstated until such time as the Department considers the progress satisfactory or until the Contract (s) is completed and accepted whichever occurs first. The above sanction remains in effect until rescinded by the Department

Prosecution of the Work shall not be discontinued at any time without the written consent of the Engineer. If it is discontinued, the Contractor shall give 24 hours notice to the Engineer before resuming operations. Unless provided for in the Contract, night work may be conducted only with written permission.

108.04-Character of Workmen; Methods and Equipment. The Contractor shall employ, at all times, satisfactory labor and equipment for prosecuting the several classes of work to full completion in the manner and time specified. Any person employed by the Contractor or by any Subcontractor, who in the opinion of the Engineer, does not perform his work in a proper and skillful manner, or who is disrespectful, intemperate, disorderly, or otherwise objectionable, shall be discharged forthwith at the written request of the Engineer; such person shall not be employed again on the Work.

All equipment which is proposed to be used on the Work shall be of sufficient size, and in such mechanical condition as to produce a satisfactory quality of work at such rate that the time schedule in the plan of operations may be maintained. During the course of construction, each and every piece of equipment shall be maintained, repaired, and adjusted, as is necessary to keep it in full satisfactory condition. Equipment that becomes less than satisfactory may be ordered removed from the Work. No equipment may be used on the Work that will do injury to any portion of the Work, or to other property, either public or private.

When the methods and equipment to be used by the Contractor in accomplishing the construction are not prescribed in the Contract, the Contractor is free to use any methods or equipment that he demonstrates to the satisfaction of the Engineer will accomplish the work in conformity with all of the requirements of the Contract.

When construction methods and equipment are specified, such methods and equipment shall be used unless others are authorized by the Engineer as provided for under **Subsection 105.17**. No change will be made in the basis of payment for the Contract items involved or in Contract time as a result of substitution of methods or equipment under these circumstances.

108.05-Temporary Suspension of Construction. If it should become necessary to stop construction for an indefinite period, the Contractor shall store all materials in such manner that they will not obstruct or impede the traveling public nor become damaged in any way. He shall take every precaution to prevent damage or deterioration of the construction performed; to provide suitable drainage of the road by opening ditches, shoulder drains, and other similar measures; and erect temporary structures where necessary.

108.06-Determination of Time for Completion. The Contractor shall complete the Work in full accordance with **Subsections 104.01** and **105.03** within the number of working days or calendar days or by the completion date stipulated in the Proposal. If a number of working days govern in connection with a specific Contract, the Engineer will apprise the Contractor, monthly, of the number of accumulated working days charged against him. Protest by the Contractor, in such connection, shall be filed within five working days of receipt of the information. The Engineer will review such protest and the supporting information and will render decision either affirming or correcting the accumulated number of working days previously reported.

When the contract time is on a calendar day basis, it shall consist of the number of calendar days stated in the Contract counting from the effective date of the Engineer's order to commence work, including all Sundays, holidays and non-work days. All calendar days elapsing between the effective dates of any orders of the Engineer to suspend work and to resume work for suspensions not the fault of the Contractor shall be excluded.

When the Contract completion date is a fixed calendar date, all work on the project shall be completed on or before that date.

The number of days for performance allowed in the Contract as awarded is based on the original quantities as defined in **Subsection 102.03**. If satisfactory fulfillment of the Contract requires performance of work in greater quantities than those set forth in the proposal, the contract time allowed for performance shall be increased on a basis commensurate with the amount and difficulty of the added work. If the Engineer determines that an increase in the contract working time proportionate to the value of the increase in quantities is commensurate with the amount and difficulty of the added work and a written request to extend time as provided below has not been made, he may proportionately increase the contract working time. If the contract requires a mandatory Critical Path

Method (CPM), the Engineer may not proportionately increase the working time. The Engineer will determine if the added work or increased quantities impact the submitted critical path workflow and will adjust the working time accordingly.

If the Contractor finds it impossible for reasons beyond his control to complete the Work within the contract time as specified or as extended in accordance with the provisions of this Subsection, he may, at any time prior to the expiration of the contract time specified or as extended, make a written request to the Engineer for an extension of time setting forth therein the reasons which he believes will justify the granting of his request. The Contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the Engineer finds that the Work was delayed because of conditions beyond the control and without the fault of the Contractor, he may extend the time for completion by a properly executed Supplemental Agreement in such amount as the conditions justify. The extended time for completion shall then be in full force and effect the same as though it were the original time for completion.

Final acceptance will be made by the Engineer as prescribed in **Subsection 105.15** and in accordance with the following:

State Funded Projects:

Upon presumptive completion of the project and due notice from the Contractor, the Engineer will make an inspection. If all items of work are completed to his satisfaction, the Engineer will accept the project and stop time charges as of the date of the inspection. However, if the inspection reveals that some items of work remain to be completed, the Engineer will direct the Contractor to complete these items and continue charging time until all work has been satisfactorily completed, regardless of the number of inspections required prior to project acceptance.

Federal-Aid Projects:

The procedure for Federal-aid projects will be the same as noted above for wholly State funded projects except that time charges will be suspended during the time interval between presumptive acceptance by the Engineer and the date of inspection by the Federal Highway Administration (FHWA). Should the FHWA Engineer find any work unsatisfactory, time charges will be resumed the day after the inspection during which such determination is made until correction of such work.

In the event further inspections by FHWA are required, the procedure described herein will be repeated until final acceptance of the project.

108.07-Failure to Complete the Work on Time. For each working day or calendar day over and above the number stipulated for completion of the Work, or for each calendar day after the stipulated completion date, whichever is set forth in the Proposal for the Contract involved, on which any portion of the Work-remains incomplete, a sum of money shall be

108

deducted by the Engineer from monies due the Contractor, not as a penalty but as liquidated damages. In such case set forth above, the number of days of time overrun will be corrected for time extensions granted under **Subsection 108.06**. The amounts to be deducted shall be as set forth below.

<u>Original Contract Amount</u>		<u>Daily Charge</u>	
<u>From</u> <u>More Than</u>	<u>To And</u> <u>Including</u>	<u>CalendarDay</u> <u>Or Fixed Date</u>	<u>Working</u> <u>Day</u>
\$ 0	\$ 100,000	\$ 80	\$ 295
100,000	500,000	225	575
500,000	1,000,000	350	825
1,000,000	2,000,000	460	1,095
2,000,000	5,000,000	810	1,690
5,000,000	10,000,000	950	2,260
10,000,000	--	1,400	3,150

Permitting the Contractor to continue and finish the Work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the Department of any of its rights under the Contract.

108.08-Termination of the Contract.

(a) Default.

The Department reserves the right to terminate any Contract, of which these Specifications are a part, if the Contractor:

1. Fails to begin construction in accordance with the terms of the Work Order.
2. Fails to furnish proper materials, or to utilize proper construction methods and equipment.
3. Fails to remove and replace portions of the Work which are found to be unsatisfactory.
4. Discontinues prosecution of the Work without the consent of the Engineer, or if he fails to resume operations at any time that he is ordered to do so.
5. Fails to maintain traffic in a safe and efficient manner, or to maintain completed portions of the Work effectively.
6. Fails to maintain a rate at which construction progress, in the opinion of the Engineer, is sufficient to assure completion of the Work within the specified time.
7. Fails, in any degree, to maintain the same financial responsibility on the basis of which he was pre-qualified for submitting Proposal of the Work and of which award of this Contract was made to him.
8. Fails or refuses to follow the proper orders of the Engineer.

Under any such circumstance, the Engineer will serve written notice on the Contractor and his Surety of intent to terminate the Contract for reasons that will be set forth therein. If within 15 days of delivery of such notice, the Contractor and his Surety, or the Surety has not taken sufficient steps to satisfy the Engineer of

the correction of the circumstance at fault, the Department may, in its absolute discretion, order the Contract terminated.

The Department may then appropriate or use any or all materials and equipment on the ground as may be suitable and acceptable and may enter into an agreement for the completion of said Contract according to the terms and provisions thereof or use such other methods as in the opinion of the Engineer will be required for the completion of said Contract in an acceptable manner.

All costs and charges incurred by the Department, together with the cost of completing the Work under Contract, will be deducted from any monies due or which may become due said Contractor. If such expense exceeds the sum which would have been payable under the Contract, then the Contractor and the Surety shall be liable and shall pay to the Department the amount of such excess.

(b) Without Fault.

The Department may, by written notice, with the approval of the Federal Highway Administration where applicable, terminate the Contract or a portion thereof after determining that for reasons beyond the control of the Contractor, the work contracted for cannot be completed. Such reasons for termination may include, but need not necessarily be limited to 1 of the following:

1. An Executive Order of the President of the United States with respect to the prosecution of war or in the interest of national defense.
2. The Engineer and Contractor each make a determination, that, due to a shortage of critical materials required to complete the work which is caused by allocation of these materials to work of a higher priority by the Federal Government or any agency thereof it will be impossible to obtain these materials within a practical time limit and that it would be in the public interest to discontinue construction.
3. An injunction is imposed by a court of competent jurisdiction which stops the Contractor from proceeding with the work and causes a delay of such duration that it is in the public interest to terminate the Contract and the Contractor was not at fault in creating the condition which led to the court's injunction. The decision of the Engineer as to what is in the Public Interest and as to the Contractor's fault, for the purpose of termination, shall be final.

When under any of the above conditions, the Contract or any portion thereof is terminated before completion of all items of work in the contract, payment will be made for the actual number of units of items of work completed at the contract unit prices and as mutually agreed for items or work partially completed. No claim for loss of anticipated profits shall be considered.

Reimbursement for organization of the Work (when not otherwise included in the contract) and moving equipment to and from the job will be considered where the volume of work completed is too small to compensate the Contractor for these expenses under the contract unit prices, the intent being that an equitable settlement will be made with the Contractor.

Acceptable materials, obtained by the Contractor for the Work, that have been inspected, tested, and accepted by the Engineer, and that are not incorporated in the Work, may, at the option of the Engineer, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the Engineer.

Termination of a Contract or a portion thereof shall not relieve the Contractor of his responsibilities for the completed Work, nor shall it relieve his surety of its obligation for and concerning any just claims arising out of the Work performed.

SECTION 109-MEASUREMENT AND PAYMENT

109.01-Measurement of Quantities..... 69
109.02-Scope of Payment..... 71
109.03-Compensation for Altered Quantities..... 72
109.04-Methods of Payment for Extra Work..... 72
109.05-Eliminated or Altered Items..... 74
109.06-Partial Payment..... 74
109.07-Final Payment..... 76

SECTION 109-MEASUREMENT AND PAYMENT

109.01-Measurement of Quantities. All work completed under the Contract will be measured by the Engineer according to United States standard measure or the International System of Units (SI, the Modernized Metric System) as indicated by the Plans.

Units of measurement and dimensions will be shown in these specifications in both United States standard measure and S.I.(metric). The Tennessee Department of Transportation will be utilizing the hard conversion to metric units in lieu of a soft conversion. A hard conversion is a statement of a previous dimension in a convenient, rounded metric unit. For example, a hard conversion for 3 feet would be 1 meter. A soft conversion is an exact re-stating of a conventional U.S. measurement in metric terms. The previously stated dimension of 3 feet would be soft converted to 0.9144 meter. The unit of measure designated by the Contract, be it U.S. standard or metric, will be the governing dimension for inspection, staking, testing, quantities, etc.

A Station when used as a definition or term of measurement will be 100 feet(1,000 meters).

The term "ton" will mean the short ton consisting of 2,000 pounds avoirdupois. The metric ton shall consist of 1,000 kilograms.

The determination of quantities for specific items will be made as set forth in the Subsections entitled "Method of Measurement" under the applicable Sections hereof.

Unless otherwise specified, longitudinal measurements for surface area computations will be made along the actual surfaces and not horizontally, and no deductions will be made for individual fixtures having an area of 9 s.f.(1 m²) or less. Unless otherwise specified, transverse measurements for surface 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 by direction of the Engineer.

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 foundation upon which such structures are placed, unless otherwise shown on the Plans.

In computing volumes of excavation, the average end area method or other acceptable methods will be used.

Unless otherwise specified, certified weights may be accepted for materials measured or proportioned by weight that are shipped by rail or truck transport, provided that only the actual weight of the material used is paid for.

Bituminous materials will be measured by the gallon or ton(liter or metric ton). Volumes will be measured at 6° F(15° C) or will be corrected to the volume at 60° F(15° C) using ASTM D 1250 for asphalts or ASTM D 633 for tars. Net certified scale weights or weights based on certified volumes in the case of rail or truck transport shipments, unless otherwise specified, will be used as a basis of measurement, subject to correction when bituminous material has been lost, wasted, or otherwise not incorporated in the Work.

Cement will be measured by the ton(metric ton).

In all cases where measurement of materials is based on certified weights, the Contractor will be required to furnish the Engineer certified weigh bills showing the net tons (metric tons) of materials received in each shipment. In no case will the Engineer pay for materials in excess of the amounts represented by the certified weigh bills.

The Contractor or materials supplier shall employ a Certified Public Weigher as defined in the Certified Public Weigher Law of 1981, **Tennessee Code Annotated, Section 47-26-801**, et seq., as amended.. All applicable materials shall be measured in accordance with the Certified Public Weigher Law and Department policy on scales approved by the Engineer. Weight (haul) tickets shall be provided by the Contractor in accordance with Department policy and as directed by the Engineer.

Platform truck scales shall be a standard brand of scales with a sufficient rated capacity to weigh the maximum gross load to which they will be subjected. In no instance shall truck scales be used to measure weights in excess of the manufacturer's rated capacity. The manufacturer's rated capacity shall be clearly posted on the scale manufacturer's plate and in the shelter provided for the weighman.

At the time of installation or modification of existing scales, the scales shall be tested and found to be within the allowable tolerances before accepted for use. Any alteration (Electrical readout, etc.) or change in the rated capacity shall be performed by a qualified scale technician. Such changes or alterations shall be documented by the scale technician and a copy of the documentation shall be furnished to the Department.

The recording mechanism of the scale shall be housed in a suitable shelter which shall be furnished with adequate light, heat, chairs, tables and storage drawers as needed for the convenience of the weighman. In addition, the scale platform and scale pit shall be kept free of any debris that could effect the accuracy of the scales.

Digital readout and scale printers may be provided as the primary weight indicator or may be provided as accessory equipment. All scale control and recording equipment shall be subjected to inspection and approval by the Department.

The scale shall be accurate within a tolerance of 0.5% and the value of the minimum graduation shall not be greater than 100 lbs(50 kgs). At each end of the platform scale there shall be a straight approach in the same plane as the platform. The approaches shall be of sufficient length and width to insure the level positioning of vehicles longer than the scale platform during weight determinations. A truck and trailer shall be weighed with no brakes set on any wheel. The scale platform should be located so that the drainage of surface water will be away from it and to allow for an adequate foundation of concrete or other approved materials. The foundation shall be constructed of sufficient strength and durability to withstand repeated capacity loading without affecting the accuracy of the scales.

The scales shall be checked as often as necessary to insure their continued accuracy. Whenever the scales cannot be checked within the time frame as set by Department policy, the Engineer may give tentative

approval, based on check truckloads weighed on other scales that are approved by the Department or other State agency.

Trucks used to haul material being paid for by weight shall be weighed empty at such times as the Engineer directs, and each truck shall bear a plainly legible identification mark.

Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein 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.

When requested by the Contractor and approved by the Engineer, in writing, material specified to be measured by the cubic yard(m^3) may be weighed and such weights will be converted to cubic yards(m^3) for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the Engineer and shall be agreed to by the Contractor in writing before such method of measurement of pay quantities is used.

Due to possible variations in the specific gravity of aggregates, the tonnage(metric tonnage) used may vary from the Proposal quantities and no adjustment in contract unit price will be made because of such variations.

Timber will be measured by the 1,000 foot board measure(M.F.B.M.)(m^3) actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece. Timber piling will be measured by the linear foot(meter).

The term "lump sum" when used as unit 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.

In the event that a controversy develops between the Contractor and the Department concerning the measured quantity of any pay item, the Department will remeasure the item, if possible, provided the Contractor enters a supplemental agreement to bear the expense of the remeasurement should the remeasurement show no substantial change in the pay item quantity. The definition of "substantial change" will be stated in the supplemental agreement and will depend on the item being checked and the nature of the particular project.

109.02-Scope of Payment. The Contractor shall receive and accept compensation provided for in the Contract as full payment for completion of the Work as specified, indicated or directed, and in full accordance with all provisions, stipulations, requirements, and conditions of the Contract; for completing all incidentals thereto; for furnishing all materials, equipment, tools, labor, and incidentals required to complete the Work; and for all risk, loss, damage, or expense of whatever character arising out of the nature or the performance of the Work, all subject to the provisions of **Subsection 107.20.**

If the "Basis of Payment" clause in the Specifications relating to any unit price in the bid schedule requires that the price of any Contract item

cover and be considered compensation for certain work or material essential to the item, this same work or material will not also be measured or paid for under any other pay item which may appear elsewhere in the Specifications.

When 2 or more projects are included in the same Contract, the Contractor will be required to furnish any construction item listed in the Contract to any or all of the projects at the Contract unit price.

109.03-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 prices for the accepted quantities of work done. No allowance will be made on any claim of the Contractor for extra compensation except as provided for in **Subsection 104.02.**

109.04-Methods of Payment for Extra Work. The methods of performing Extra Work will be as provided for under **Subsection 104.03.** When a Supplemental Agreement is executed covering the Extra Work, payment therefor will be made in accordance with all the terms of the agreement.

When, as provided under **Subsection 104.03,** the Contractor is ordered to perform the Work by Force Account, it shall be paid for in the manner hereinafter described, and this payment shall be full compensation for all overhead expense not hereinafter provided for, incurred in the prosecution of the construction performed on this basis.

(a) Labor.

For all labor and foremen in direct charge of the specific operations, the Contractor shall receive the rate of wage (or scale) agreed upon in writing before beginning work for each and every hour that said labor and foremen are actually engaged in such work. An amount equal to 20% of the above item will also be paid to the Contractor. The workmen designated for the force account work shall perform duties as required by their classification.

The Contractor shall receive the actual costs paid to, or in behalf of workmen by reason of subsistence and travel allowances, health and welfare benefits, pension fund benefits and other benefits, when such amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on the Work.

(b) Bond, insurance, and tax.

For property damage, liability, and workmen's compensation insurance premiums, unemployment insurance contributions and social security taxes on the force account work, the Contractor shall receive the actual cost. The Contractor shall furnish satisfactory evidence of the rate or rates paid for such bond, insurance, and tax.

(c) Materials.

For materials accepted by the Engineer and used, the Contractor shall receive the actual cost of such materials delivered on the Work, including transportation charges paid by him (exclusive of machinery rentals as hereinafter set forth), to which cost, 15% will be added.

(d) Equipment.

For any machinery or special equipment (other than small tools) including fuel, lubricants, and repairs, plus transportation costs, the use of which has been authorized by the Engineer, the Contractor shall receive the rental rates agreed upon in writing, not to exceed the current monthly rates as set out in the "Rental Rate Blue Book for Construction Equipment" published by Dataquest, Incorporated, excluding any rental rate increments due to the use of contingency factors or replacement cost escalation factors, before such work is begun.

The rental rates will be paid for the actual time that the equipment is in operation. For periods of equipment use less than the standard 176 hours per month, the rental rate shall be the hourly rate obtained by dividing the monthly rate by 176. The weekly, daily or hourly premium equipment rates shown in the Blue Book shall not be used.

Equipment used for Force Account work shall be of the size, type and number necessary to perform the required work in an economic and expeditious manner.

(e) Miscellaneous.

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

(f) Compensation.

The Contractor's representative and the Engineer shall compare records of the cost of work done as ordered on a force account basis at the end of each day's work.

(g) Statements.

No payment will be made for work performed on a force account basis until the Contractor has furnished the Engineer with duplicate certified itemized statements of the cost of such force account work detailed as follows:

1. Name, classification, date, daily hours, total hours, rate, and extension for each laborer and foreman.
2. Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.
3. Quantities of materials, prices, and extensions.
4. Transportation of materials.

5. Cost of property damage, liability and workmen's compensation insurance premiums, unemployment insurance contributions and social security tax.

Statements shall be accompanied and supported by receipted invoices for all materials used, including transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices, the Contractor shall furnish an affidavit certifying that such materials were taken from his stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

109.05-Eliminated or Altered Items. The Department reserves the right, as provided in **Subsection 104.02**, to omit or alter any portions of the Contract relating to the construction of any item or items therein by the payment to the Contractor of a fair and equitable amount covering all items of cost incurred prior to the date of cancellation, alteration, or suspension of the Work as ordered by the Department.

Acceptable material ordered by the Contractor or delivered on the Work prior to the date of cancellation, alteration, or suspension of the Work Order of the Department shall be purchased from the Contractor by the Department at actual cost plus delivery cost, including freight, unloading, hauling, etc. unless otherwise provided herein, and shall thereupon become the property of the Department, and no allowance will be made for anticipated profits. These provisions shall likewise apply to omission or alteration of any extra and force account work for which an agreement has been executed.

Materials used in construction items that are subject to variation in quantity, that are ordered by the Contractor without consultation with, and approval of, the Engineer prior to the ordering of the material, will not be considered for purchase by the Department. In addition, materials ordered by the Contractor prior to the preconstruction meeting, without written approval by the Engineer, will not be considered for purchase by the Department.

109.06-Partial Payment. Once each month, the Engineer will prepare a written estimate of the value of the portion of the Work performed to date, including the quantities of material complete in place in full accordance with the Contract. Such estimate is approximate only and may not necessarily be based on detailed measurement. Value will be computed on the basis of contract item unit prices, or of percentage of completion of lump sum items.

When requested in writing by the Contractor and approved by the Engineer, partial payment may be allowed on certain non-perishable items such as, but not limited to, aggregates, reinforcing steel, bridge piling, fabricated structural steel or components thereof, prefabricated bridge components, traffic signal equipment, electrical equipment, fencing materials, sign materials and others as may be authorized by the Engineer within the following limitations:

1. The material is stockpiled in an approved manner on or near the project site. Partial payment may also be made for materials not in the vicinity of construction if it is determined that because of required fabrication at an off-site location the materials cannot be stockpiled in such vicinity. The material shall be stockpiled so as to be easily identified as to quantity and assigned project. The Contractor shall furnish the Engineer with a written statement assuring the State the stockpiled material will be used on the specific project on which the partial payment is made. An invoice or an accumulation of invoices shall total \$5,000.00 for eligible pay items before consideration for partial payment. A certified paid invoice or a receipt for delivery of materials shall be submitted before partial payment will be considered. If a receipt for delivery of materials is submitted, a paid invoice shall be submitted for the stockpiled material no later than 30 calendar days following the date of the progress payment for which the stockpiled material was paid. If such invoices are not supplied within this time frame, the stockpiled material payment will be deducted from the following progress payment.
2. The material conforms to the requirements of the Plans and Specifications.
3. The Contractor shall assume full responsibility for the stockpiled materials from the elements and against loss or damage by any cause. In the event any of these stockpiled materials become lost, stolen, impaired or damaged after partial payment has been made, the monetary value of the lost, stolen, impaired or damaged material as may have been paid for in a current estimate will be deducted from the next estimate, and no further payment will be made until such material has been satisfactorily replaced in accordance with specification requirements.
4. Partial payment, unless otherwise provided under a specific item of work, shall not exceed 95% of the invoice price or 85% of the total Contract bid price for the item of which the material is a part, whichever is less.
5. The total quantity of stockpiled material for which partial payment is made shall not exceed the estimated plans quantity or that quantity established by the Engineer as being required to complete the project. If project conditions result in less quantity of materials being required to complete the project than that on which stockpile payment has been made, the Contractor shall dispose of the excess materials at no cost to the State.
6. Use of materials on a project other than the 1 for which stockpile payment has been made, without written authority by the Engineer will result in the forfeiture of payment for any quantity of stockpiled material for the duration of the project.
7. The Contractor furnishes the Engineer written consent of his Surety before payments are made.
8. Partial payment will be made only on items that will be incorporated permanently in the Work.

9. Invoices may include sales tax and delivery costs.

From the total of the estimate, determined as above, will be deducted an amount equivalent to 3-1/2% of the whole, to be retained by the Department until after completion of the entire Work in full conformity with all of the provisions of the Contract. The balance, or a sum equivalent, to 96-1/2% of the whole, from which is deducted all prior payments, shall be certified by the Engineer for partial payment; no monthly estimate or partial payment will be made when the total value of the work done since the last previous monthly estimate amounts to less than \$ 1,000.

After the first partial payment, the Department reserves the right to withhold any subsequent partial payments until it has been completely satisfied by the Contractor that his labor, material, and equipment costs and any claims for other reasons are paid on a current basis. Should any defective construction or material be discovered, or should a reasonable doubt arise as to the satisfactory quality of any part of the construction completed prior to final acceptance and payment, there will be deducted from the first estimate rendered after the discovery of such defective or questioned construction, and if necessary, from subsequent estimates, an amount sufficient to insure the replacement of such work by the Contractor or by others as may prove necessary.

109.07-Final Payment. Full settlement may be made with the Contractor after the following have occurred:

1. When a project has been accepted pursuant to **Subsection 105.15**, the Department will provide 30 days notice in accordance with **T.C.A., Section 54-5-122**, in some newspaper published in the county where work is done, if there be a newspaper published there, and if not, in a newspaper in an adjoining county, that settlement is about to be made and notifying all claimants to file notice of their claims with the Department, and the period for filing shall not be less than 30 days after the last published notice. No notice of claim shall be valid unless it is verified by oath and filed after the publication of the first notice; and
2. The Contractor shall furnish evidence to satisfy the Department that all the material used by him, his Subcontractors or his agents has been fully paid for and all laborers and other employees working for him, his Subcontractors, or his agents have been fully paid.
3. If no claims are filed at the expiration of the above noted 30 days, then final payment may be made to the Contractor. If claims are filed with the Department, final settlement will be withheld for a period of 60 days from the date of the last advertising to allow claimants to sue and prove their claims, but in all cases where suits are not brought within the said period of 60 days, final payment may be made to the Contractor at the expiration of this period. The Department will withhold a sufficient sum from the monies due to pay all claims, including advertising, and in the event suit is brought against the Contractor within the said sixty days from the

date of the last advertising, by any claimant, the Department will pay the amount of said claim into court.

The Contractor will not be required to maintain the project or perform any further construction thereon after formal acceptance, which must be in writing by the Engineer, except as otherwise provided.