



U.S. Department
of Transportation

**Federal Highway
Administration**

West Virginia Division

June 30, 2009

Geary Plaza, Suite 200
700 Washington Street, East
Charleston, West Virginia 25301
Phone (304) 347-5928
Fax (304) 347-5103

Ron Stan

**IN REPLY REFER TO:
Special Provision Approvals**

Stephen T. Rumbaugh, P.E.
Director, Contract Administration Division
West Virginia Division of Highways
Charleston, West Virginia 25305

Dear Mr. Rumbaugh:

We have reviewed the special provisions submitted by your letter of June 12, 2009. Based on this review, the following special provisions are approved for use on all Federal-aid contracts on a project-by-project basis:

102.1 - Prequalification Of Bidders, dated February 27, 2009, (Section 102 - Bidding Requirements and Conditions for Electronic Bidding)

103.2.1 - Contractor's Direct Deposit Requirement, dated April 8, 2009 (Section 103 - Award and Execution of Contract, 103.2 - Award of Contract)

105.5 - Cooperation By Contractor, dated March 26, 2009, (Section 105 - Control of Work)

109.10 - Price Adjustment of Asphalt Cement, dated February 19, 2009, (Section 109 - Measurement and Payment)

201.7 - Disposal, dated April 11, 2009, (Section 201 - Clearing and Grubbing)

207.6.3 - Waste, dated June 1, 2009, (Section 207 - Excavation and Embankment, 207.6 - Disposal of Materials)

405.1 - Description through 405.15-Pay Items, dated February 23, 2009, (Section 405 - Surface Treatments)

601.14-Method of Measurement, dated April 23, 2009, (Section 601 - Structural Concrete)

RECEIVED

JUL 15 2009

CONTRACT ADMINISTRATION



614.7 - Lagging and Backfilling, dated December 28, 2008, (Section 614 - Piling Walls)

625.2.1 – Experience, dated March 11, 2009, (Section 625 - Drilled Caisson Foundations, 625.2 - Tests and Submittals)

633.8 - Basis Of Payment, dated March 29, 2009, (Section 633 - Concrete Gutter, Invert Pipe Gutter or Dumped Rock Gutter)

636.3-Control of Traffic Through Work Areas through 636.23.6, dated March 25, 2009 - Traffic Control Devices, (Section 636 - Maintaining Traffic)

703.6 - Acceptance Plan for Grading of Coarse Aggregate dated, January 17, 2006, (Section 703 - Coarse Aggregate)

710.3 - Preservative Treatment, dated December 29, 2008, (Section 710 - Wood Materials)

Section 711 - Paints, Coatings, Oils, and Inks, dated December 9, 2008

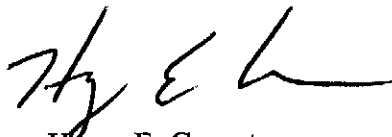
714.19 – Corrugated Polyethylene Pipe, dated March 30, 2009, (Section 714 - Concrete, Clay, Fiber and Plastic Pipe)

715.9.1 - General through 715.9.5.10 - Retroreflector Requirements, dated March 4, 2008, (Section 715 - Miscellaneous Materials, 715.9 - Warning Devices)

715.9.3 - Channelizing Devices And Auxiliary Barriers dated, June 8, 2009, (Section 715 - Miscellaneous Materials, 715.9 - Warning Devices)

716.1.1.2-Granular Material, dated March 11, 2009, (Section 716 - Embankment and Subgrade Material)

Sincerely yours,



Henry E. Compton
Director, Office of Engineering and Operations

Enclosure (file copy only)

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

SECTION 102

BIDDING REQUIREMENTS AND CONDITIONS FOR ELECTRONIC BIDDING

102.1-PREQUALIFICATION OF BIDDERS:

All bidders on projects let to contract by the Division shall be prequalified as provided for by rules or regulations, or both, of the Commissioner. A Certificate of Qualification will be issued by the Commissioner fixing the amount of incomplete work a Contractor may have under contract at any one time and the type of work for which the Contractor is qualified.

To obtain a Certificate of Qualification, the Contractor must file a "Contractor's Prequalification Statement" containing the information as required based on the category of work for which prequalification is being requested.

Application for qualification will be accepted by the Commissioner until 15 calendar days prior to the date set for receiving bids on projects on which the applicant may wish to submit a Proposal. Award of a certificate may be held in abeyance until such time as the Commissioner is able to verify all references and be satisfied as to the applicant's qualifications.

No Contractor will be issued a Certificate of Qualification until the Division has had adequate time to review and verify the adequacy of the information provided in the "Contractor's Prequalification Statement".

Additionally it is the Contractor's responsibility to complete any Electronic Bidding registration from the Division, and acquire all the necessary software, hardware, and networking capabilities for the Electronic Bidding process.

102.2-CONTENTS OF PROPOSAL FORMS:

The proposal forms will show the location and description of the proposed work, the approximate estimates of the various quantities of work to be performed for materials to be furnished, the amount of the proposal guaranty, the number of working days or date on which the work is to be completed, and the date, time and place of opening of proposals. The form will also include any special provisions or requirements not contained in the

Standard Specifications. All papers bound with or attached to the proposal form are considered a part thereof and must not be detached or altered.

The Plans, Specifications, and other documents designated in the proposal form are considered a part of the proposal form whether attached or not attached.

Upon request, the Division will furnish prequalified bidders or their authorized representatives with proposal forms. Proposals issued for informational purposes, available to all interested parties, will be marked "Not Valid for Bidding Purposes" and will not be accepted as a bid from any company.

The Proposal documents, Plans, Specifications, and other documents designated in the proposal form can be viewed and purchased on the WVDOH Bid Express Website for Electronic Bidding purposes to those authorized participants.

102.3-ISSUANCE OF PROPOSAL FORMS:

Proposal forms, on which the name of the bidder is to be typed or written in ink before issuance, will be issued to Prequalified Contractors only or to their authorized representatives, or to Contractors who have filed on a Division standard form an application for prequalification 15 calendar days prior to the date set for receiving bids on projects on which the applicant desires to bid.

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

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

102.4-INTERPRETATION OF APPROXIMATE ESTIMATES:

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

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

The bidder is required to examine carefully the Plans, Specifications, Supplemental Specifications, contract forms, and the site of the work contemplated. The submission of a bid shall be considered prima facie evidence that the bidder has made such examination

and has judged for and satisfied themselves as to the character, quality, and quantity of work to be performed and material required to be furnished under the Contract.

102.6-PREPARATION OF PROPOSAL:

The bidders Proposal must be submitted on the form furnished by the Division or through the Division's Bid Express Website. In lieu of using the Division's Schedule of Items, the bidder may submit a computer generated substitute schedule with the Proposal. The substitute schedule must be in a format approved in writing by the Division prior to use. The bidder must furnish a unit price or a lump sum price as called for in the Proposal, in numerical figures, for each pay item listed, except that in the case of alternates, the bid may be made on only one alternate if so desired. The bidder must also show the products of the respective unit prices and quantities in numerical figures in the column provided for that purpose and the total amount of the Proposal obtained in adding the products of the items. All figures shall be in ink or typed. In case of discrepancy between the unit price and its extensions, the unit price will govern.

The Proposal must be signed in ink by the bidder or a qualified and authorized agent; by one or more bidders or officers of each firm represented in a joint venture; by one or more officers of a corporation duly authorized to act for and on behalf of the corporation; or by all partners or their individually qualified and authorized agents in case of a partnership. When submitting an electronic bid, the contractor shall use a digital signature as provided at law.

The Proposal must contain the name and post office address of an individual bidder, the name and post office address of each individual or firm represented in a joint venture, the name and business address of a corporation and its corporate officials, or the name and post office address of each member of a partnership.

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

102.7-IRREGULAR PROPOSALS:

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

- i. When the Proposal is on a form other than that furnished by the Division or if the form is altered. Use of a Division approved computer generated Schedule of Items shall not be considered an alteration of form or format within the meaning of these Specifications.
- ii. When there are unauthorized additions, conditional or alternate bids, or irregularities of any kind which may tend to make the Proposal incomplete, indefinite, or ambiguous as to its meaning. Also, when Division approved computer generated Schedule of Items show any alteration of format, additions or amendments not called for, errors or omissions in units of measure, or erasures.

- iii. When the bidder adds any provisions reserving the right to accept or reject an award, or to enter into a Contract pursuant to an award. This does not exclude a bid limiting the maximum gross amount of awards acceptable to any one bidder at any one bid letting, providing that any selection of awards will be made by the Division.
- iv. When the Proposal does not contain a unit price for each pay item listed, except in the case of authorized alternate pay items.
- v. Failure to sign, properly execute or return the bid bond on the official form provided by the Division, or, in the case of an electronic bid, on a form approved by the Division.
- vi. Failure to sign, properly execute, or notarize the Proposal.
- vii. Failure to indicate a proposed goal in Section C, Item 3 of the Notice contained in the Proposal, when a Division determined goal is indicated in paragraph 5 of the Special Provision for Disadvantaged Business Enterprise Utilization.
- viii. Failure to properly acknowledge receipt of addendum(s) in accordance with Section I of the notice contained in the proposal.
- ix. Failure to show the West Virginia Contractor's License Number when required in Section H of the notice contained in the proposal.

102.8-PROPOSAL GUARANTY:

No proposal will be considered unless accompanied by a guaranty in the form of a certified or cashier's check, or bid bond, in the amount specified in the Proposal, made payable to the West Virginia Division of Highways. Bid bonds will be accepted only if executed on the official form furnished by the Division, and any Proposal accompanied by a bond executed on a copy, duplicate, or facsimile will be rejected.

Contractors bidding electronically must submit a digitally signed proposal guaranty bond.

102.9-DELIVERY OF PROPOSALS:

Each Proposal not submitted electronically shall be submitted in a special envelope furnished by the Division with the Proposal. In the event of loss of the envelope, a similar one of the same general size and shape may be used. The envelope shall be endorsed on the outside "Proposal for the Improvement of the _____ Road or Bridge Number _____, Project No. _____, County _____, West Virginia." and shall have the name of the bidder thereon. Envelopes shall be addressed to The West Virginia Division of Highways, Charleston, West Virginia, and shall have the name and address of the bidder. Proposals shall be deposited at the proper designated office of the Division prior to the hour set in the Proposal for opening of bids. Proposals received after the time for opening of bids will be returned to the bidder unopened.

Electronic bids must be received by the Bid Express website at the time designated in the proposal to proceed with the letting.

102.10-WITHDRAWAL OF PROPOSALS:

At any time prior to the opening of Proposals, bidders may withdraw Proposals already deposited with the Division or submitted electronically, provided the request is made in writing, by telegraph, or in a manner approved by the electronic bidding service provider. After the time provided for the opening of proposals, a bidder may withdraw its bid during the course of reading of bids prior to the actual reading of bids on the project for which the bid is withdrawn only by providing a written document at the site of the letting in the following form:

“I, the undersigned, of _____, Contractor(s) hereby acknowledge that I have this day withdrawn the sealed bid of _____, Contractor(s) on West Virginia Division of Highways Project No. _____.”

Contractors who are found to be low bidders on a number of projects of which the total exceeds the Contractor's rating may withdraw, with the approval of the Commissioner, bids on such project or projects as will bring the remaining total to within the limit of the rating. At their discretion, the Commissioner may award contracts for the project or projects on which bids have been so withdrawn to the next lowest qualified bidder.

102.11-COMBINATION PROPOSALS:

If the Division so elects, Proposals may be issued for projects in combination or separately, so that bids may be submitted either on the combination or on separate units of the combination. The Division reserves the right to make awards on combination bids or separate bids to the best advantage of the Division. No combination bids other than those specifically set up in proposals by the Division will be considered. Separate Contracts will be written for each individual project included in the combination.

102.12-PUBLIC OPENING OF PROPOSALS:

Proposals will be opened and read publicly at the time and place indicated in the notice to Contractors. Bidders, their authorized agents, and other interested parties are invited to be present.

Electronic Bid Submissions will be received and read publicly.

102.13-DISQUALIFICATION OF BIDDERS:

Either of the following reasons may be considered as being sufficient for the disqualification of a bidder and the rejection of their Proposal or Proposals.

- i. More than one Proposal for the same work from an individual, firm, or corporation under the same or different name.
- ii. Evidence of collusion among bidders. Participants in such collusion will receive no recognition as bidders for any future work of the Division until any such

participant shall have been reinstated as a qualified bidder.

102.14-MATERIAL GUARANTY:

The successful bidder shall furnish a complete statement of the origin, composition and manufacture of all materials to be used in the construction of the work, together with samples when required. Samples may be subjected to the tests provided for in these Specifications to determine their quality and fitness for the work.

102.15-FREE COMPETITIVE BIDDING AFFIDAVIT:

Prior to the approval of Federal-Aid Contracts, a sworn statement in the form of an affidavit shall be executed by, or on behalf of, the person, firm, association, or corporation to whom such contract is to be awarded. This affidavit must be sworn to before a Notary Public who must affix their seal thereto if outside the State of West Virginia.

The affidavit, with accompanying endorsement and acknowledgment sections, is contained in the contract Proposal.

102.16-PRE-CONSTRUCTION DATA:

Prospective bidders may review files at the West Virginia Division of Highways, Capitol Complex, Charleston, West Virginia. These files may contain additional information not included in the contract documents including, but not limited to, old plans, old shop drawings, geotechnical information, environmental documents, permit applications, permits, asbestos reports, hazardous waste reports and other data. Copies may be obtained upon request and payment of printing fees.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

SECTION 103

AWARD AND EXECUTION OF CONTRACT

103.2 – AWARD OF CONTRACT

ADD THE FOLLOWING TO THE SECTION:

103.2.1 – Contractor's Direct Deposit Requirement: The Contractor shall receive all payments electronically via Direct Deposit. Prior to Award of the Contract, the Contractor shall be approved and registered to accept payments through the West Virginia State Auditor's Office electronically. (www.wvsao.gov)

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

SECTION 105

CONTROL OF WORK

105.5 – COOPERATION BY CONTRACTOR

DELETE THE FIRST PARAGRAPH AND REPLACE THE FOLLOWING.

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

No change will be made in the Adjustable Material Cost (C) for variations between these assumptions and actual factors.

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

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

Where A_c equals the approved asphalt content expressed in decimals, i.e. 5.8% asphalt content equals 0.058. When recycled asphalt concrete is used in the mix, A_c is the % virgin or new asphalt added to the mix.

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

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

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

SECTION 109

MEASUREMENT AND PAYMENT

109.10-PRICE ADJUSTMENT OF ASPHALT CEMENT:

ADD AS LAST PARAGRAPH TO THIS SECTION.

TABLE OF MATERIALS TO BE ADJUSTED FOR
PRICE OF ASPHALT AT THE TIME OF PLACEMENT
(English & Metric)

Adjustable Material	Bidding Index (I _b)	Adjustable Material Cost (C), (C ₁) or (C ₂) Dollars Per Unit of Asphalt Mixture or Per Gallon (Liter) or Liquid Asphalt Material
Asphalt Cement under Sections 401 and 402	*	(C ₁)
Asphalt Cement under Section 311	*	(C ₂)

*The bidding Indexes (I_b) and the placement indexes (I_p) may be found posted at the Division's Internet website www.dot.com by selecting the 'Contractors' link under 'Doing Business' and then by choosing the 'Fuel and Asphalt Prices' option from the 'Contractors Resource Center' drop down menu.

The bidding index for asphalt cement will be the price in effect for the month prior to the month in which this contract is let.

**In order to determine the applicable adjustable material cost ("C") factor for bituminous material under sections 405 and 636, multiply the bidding index (I_b) by 0.0027 for English or 0.001 for metric.

The "C" values given per gallon of Liquid Asphalt Material is based on the use of an emulsion which is assumed to contain 65% asphalt cement and a gallon of emulsion weights 8.43 pounds of a liter of emulsion weights 1.00 kg. If a cut-back asphalt is used "C" as given in the above table must be multiplied by 1.54 to arrive at a modified "C" factor for use in the formula.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

**SECTION 201
CLEARING AND GRUBBING**

201.7 – DISPOSAL:

DELETE THE ENTIRE SECTION AND REPLACE WITH THE FOLLOWING:

All wood, trash, debris, stumps, and other foreign matter shall be removed and disposed of by the Contractor. Material may be disposed of at approved waste areas or in accordance with the provisions prescribed. Non-combustible material may be disposed of in embankments in accordance with the applicable provisions.

All burning of vegetative material shall be done in accordance with the applicable laws, ordinances, regulations, and requires an approval from the West Virginia Department of Environmental Protection, Division of Air Quality (DEP) as defined in the Code of State Rules, Title 45, Series 6. If the Contractor plans to burn during Forest Fire Season (March 1-May 31 and October 1-December 31) a permit is also required from the West Virginia Division of Forestry (No permit from the West Virginia Division of Forestry is required for burning between 4:00PM and before nightfall during Forest Fire Season). Copies of these approvals and permits are to be provided to the Engineer.

Open burning shall be extinguished prior to nightfall unless previously approved by DEP, Division of Air Quality. It is the intent of this Specification that the health, safety, comfort, and the property of persons in the vicinity are protected from the effects of such burning. Open burning of Construction/Demolition Waste as defined in Section 207.6.5 will not be allowed. The disposal of Construction/Demolition Waste Materials shall be in accordance with Section 207.6.5.

Clearing and Grubbing materials (vegetative material only) shall be disposed of by chipping or burning using a pit burner/air curtain. Vegetative material may also be used in conjunction with erosion and sediment control features.

If the Contractor chooses the chipping option, vegetative material may be reduced to chips of a maximum size of 2 inch (50 mm). The chips may be disposed of in areas where erosion control is required, as a substitute for straw mulch in accordance with the applicable

provisions of 642 and 652, or between slope lines and right-of-way lines in areas/locations as determined by the Engineer.

When the pit burner/air curtain method of disposing of vegetative material is utilized, the Contractor will have two options. The first being an above ground fire box. If this option is chosen, the Contractor shall follow the manufactures recommendations.

The second option is an in ground trench. If this option is chosen, the Contractor shall construct a minimum trench of 20ft (6m) in length X 10ft (3m) wide X 10ft (3m) deep with vertical walls . The air curtain shall be sufficient that post burn vegetated material will be no larger than 6 inches (150mm) in any direction. The air curtain shall have a flow of air in order to prevent continuous smoke pillars from escaping the trench.

The in ground trench is to be placed outside the roadway prism, unless otherwise approved by the Engineer. If the trenches are not to be eliminated in the subsequent excavation operation, they shall be backfilled. All backfill within the roadway prism shall be accomplished in accordance with the requirements of Section 207. Compaction of backfill outside the roadway prism shall be performed so as to obtain a minimum density equal to that of the surrounding ground.

The prevailing winds during open burning should be away from any roadway, airport, city, or occupied residence likely to be affected by the smoke to the best extent possible. Open burning of vegetative material shall not be allowed during periods of air stagnation advisories or alerts.

The Contractor will be held responsible for any damage caused by fires. The Contractor shall remove and dispose of burned material; replace trees, shrubs, fences or other objects designated or described to remain, but which have been damaged; and seed burned areas beyond construction limits; all in an acceptable manner. Upon completion of the work, nothing shall remain within the right-of-way limits, nor along the land adjacent thereto, which was deposited by the Contractor as the result of any of the operations of construction unless approved by the Engineer.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

SECTION 207

EXCAVATION AND EMBANKMENT

207.6 – DISPOSAL OF MATERIALS:

207.6.3-Waste:

DELETE THE ENTIRE SECTION AND REPLACE WITH THE FOLLOWING:

207.6.3-Waste: The Contractor shall locate and furnish all sites for disposal of any waste and surplus material. They will have the option to waste within the WVDOH right-of-way limits (R/W) or on private property located outside the right-of-way limits. If the Contractor chooses to waste within the R/W, the proposed waste site shall be treated as a roadway embankment in accordance with Section 207.7 and the following procedure is to be followed before any waste will be allowed:

The Contractor shall submit to the Engineer for approval four (4) copies of a site plan for any waste to be placed within the R/W. The plan for the site shall include, but not be limited to:

1. The location and approximate boundaries of the waste site;
2. Topographical features including existing and final ground slopes, drainage structures, etc;
3. Streams, storm water features, roads, access to properties, utilities, etc;
4. An erosion and sediment control plan utilizing the best management practices consistent with all phases of operation of the waste site;
5. Restoration or cover vegetation plan of the site;
6. If the waste site requires the modification of an existing US Army Corps of Engineers permit, the Contractor shall provide the necessary revised permit drawings to show the proposed changes to the DOH in order to modify the existing 404 permit and to obtain a 401 Water Quality Certification if necessary. A minimum of 2 months may be required to get approval.
7. If the Contractor proposes to dispose of any Construction/Demolition Waste Material within the waste site, the criteria as set forth in subsection 207.6.5-Construction/Demolition Waste Material must be followed and a copy of the notification sent to the West Virginia Department of Environmental Protection.

If the Contractor chooses to waste unsuitable material, construction/demolition materials, etc., in the waste site, written approval from the Engineer will be required.

The following will not be allowed for waste sites within the R/W:

1. Steepening of slopes (without a geotechnical analysis);
2. Placement above roadway grade without a geotechnical analysis; or
3. Fill within the 100 year floodplain.

Upon receipt of the Contractor's complete waste site submission, the Engineer shall follow the guide lines as set forth in the latest edition of the Erosion and Sediment Control Manual for review and approval. The Contractor may be required to revise the site plan prior to approval of the Engineer. The Contractor's waste site plan must be approved by DOH and the West Virginia Department of Environmental Protection before any waste material can be placed in the site.

The DOH will bear the cost of all features associated with the waste site except for necessary revisions to drainage structures (ie. lengthening of culverts, etc.).

Upon completion of work, all waste sites shall be neatly trimmed and drained and all debris and spoil disposed of in accordance with the approved plan. No material shall be wasted at places other than those approved, except as provided, nor shall any material be wasted above established grades of any road unless authorized by the Engineer in writing. Slopes shall be trimmed neatly to present a uniform surface, free from hollows or protrusions and loose or overhanging rocks. The Contractor shall take precautions by benching or other methods to prevent slides and slip outs. Waste areas shall be graded by the Contractor then fertilized, seeded and mulched in accordance with the applicable Specifications and pay items within the contract.

For waste sites outside the R/W, the Contractor and/or property owner shall bear all responsibility with regards to stability, permitting, mitigation, traffic control, etc. The Contractor and/or property owner shall comply with existing laws and/or regulations and save the State harmless from any claims for damages which may result from the waste.

For waste sites not to exceed 300 cy (230 m³) and within the R/W, the Contractor shall prepare a plan to include erosion and sedimentation control features to be approved by the District Environmental Coordinator. No plan will be approved if it is within a floodplain. For these waste sites, the Contractor shall comply with existing laws and/or regulations and save the State harmless from any claims for damages which may result from the waste.

The Contractor shall minimize pollution or sedimentation of rivers, streams, lakes, ponds, and other bodies of water while conducting all wasting operations

207.6.5 – Construction/Demolition Waste Material:

DELETE THE ENTIRE SECTION AND REPLACE WITH THE FOLLOWING:

207.6.5 – Construction/Demolition Waste Material: The Code of State Rules for the West Virginia Department of Environmental Protection Title 33 Series 1 Section 2.38 defines "Construction/Demolition Waste" as waste building materials, packaging, and grubbing waste, resulting from construction, remodeling, repair and demolition operations on houses, commercial and industrial buildings, including, but not limited to, wood, plaster, bricks, blocks and concrete, and other masonry materials, but does not include asbestos-containing materials, household

furnishings, burnt debris, material containing lead-based paint, pressure-treated wood, contaminated solid waste, yard waste or waste tires, and other items listed in subdivision 5.4.a of the Title 33, Series 1, in the Code of State Rules.

The Code of State Rules for the West Virginia Department of Environmental Protection Title 33 Series 1 Section 3.16.e.2.C. provides an One-Half Acre Exemption for Division of Highways Projects. The Division of Highways or its contractors working on highway construction that dispose of construction/demolition waste material, which, for the purpose of this paragraph, includes Category I Nonfriable Roofing, are exempt from the permitting requirements of the rule, provided that the disposal area does not exceed one-half acre, does not fill natural wetlands, adheres to best management practices for construction, maintains cover over the material, and the parties are obligated by contract to comply with all disposal provisions specified by the West Virginia Division of Highways Standard Specifications, Roads and Bridges, including supplemental specifications published by the Division of Highways (Standard Specifications). This exemption does not apply to multiple one-half acre sites on the same parcel of land, or to disposal of material not generated by the highway project. Eligibility for this exemption requires the Division of Highways or its contractors provide the Secretary for the West Virginia Department of Environmental Protection with seven (7) days notice prior to disposal and a copy of the landowner agreement. Eligibility also requires proper management of the site by the Division of Highways.

Hazardous Waste disposal shall be conducted in accordance with State and Federal Laws and Regulations. Hazardous Waste shall be taken to an EPA approved Hazardous Waste Disposal facility.

The legitimate beneficial reuse of clean bituminous (asphaltic) concrete, Portland cement concrete and other clean masonry substances for the purpose of fill, riprap, road surfacing or road base material is exempt from the West Virginia Department of Environmental Protection permitting requirements of the rule, provided that any such fill will not be placed in natural wetlands, adheres to the best management practices for construction and maintains cover over the material when used as a structural component of a fill, and provided further that bituminous (asphaltic) concrete may not be used for riprap material.

For the purpose of the above paragraph, "clean" will be defined as uncontaminated bituminous (asphaltic) concrete, Portland cement concrete, or masonry material that does not have protruding metal prior to its reuse. In cases where Portland cement concrete is used as riprap and that concrete contains metal, the Secretary of the West Virginia Department of Environmental Protection will decide on a case-by-case basis whether this reuse is eligible for an exemption under this rule.

Concrete, stone, brick, and other masonry materials which have been broken into pieces not exceeding 2 ft. (600 mm) in any dimension may be permitted in embankments but not within 2 ft. (600 mm) of the subgrade 1 ½ ft. (450 mm) of the top of the side slopes. Material such as wood, steel, and broken concrete matted together by steel reinforcement will not be permitted in any portion of the embankment. All voids shall be completely filled with suitable material and compacted to the density specified in 207.

Portland cement concrete and bituminous (asphaltic) concrete removed from a project may be used as fill in a waste site provided the placement is in accordance with Section

207.7.3.2.3-Rock. All Portland cement concrete and bituminous (asphaltic) concrete in the waste site shall be covered with a minimum of 2 ft. (600 mm) of soil. The fill area of Portland cement concrete and bituminous (asphaltic) concrete shall not be within 300 feet (91m) of a wetland, a perennial stream, or within the 100-year floodplain.

The Contractor shall take all precautions for the stability of slopes in any waste site containing Construction/Demolition waste by benching or other methods to prevent slides and slip outs. It may be necessary to compact the Construction/Demolition waste to ensure stability. Construction/Demolition waste materials shall not be burned. Construction/Demolition waste materials which do not qualify for the Exemptions in the Code of State Rules for the West Virginia Department of Environmental Protection Title 33 Series 1 must be recycled or disposed of in a DEP approved landfill.

The Contractor shall not allow any temporary disposal sites on the right-of-way to remain after construction is completed and must dispose of all Construction/Demolition waste in accordance with this section.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

**SECTION 405
SURFACE TREATMENTS**

405.1-DESCRIPTION:

This work shall consist of the construction of a wearing course, composed of bituminous material and aggregate, in one or more applications upon the completed and accepted base course or existing surface, in accordance with these Specifications and in reasonably close conformity with the lines, grades, thicknesses, and cross sections shown on the Plans or established by the Engineer.

The type of surface treatment will be indicated on the Plans. The contractor may select the emulsion grade from the table below. The District may specify the use of a polymer modified emulsion.

The contractor shall notify the engineer a minimum of two weeks prior to starting any surface treatment operation.

405.2 - MATERIALS:

The materials shall conform to the requirements of the following Subsections of Division 700:

MATERIALS	SUBSECTION	KIND OR GRADATION
¹ Coarse Aggregate	703.1-4	57, 67, 8 or 9
Liquid Asphalt Asphalt Emulsion	705.4	RS-2, MS-2, HFMS-2, or HFRS-2 Grades
Polymer Modified Cationic Emulsified Asphalt	705.12	CRS-2P
² Cationic Emulsified Asphalt	705.11	CMS-2 or CRS-2 Grades

¹In addition to meeting the gradation requirements specified in Table 703.4 the aggregates shall have a maximum of 2.0% passing the #200 (75µm) sieve as determined by AASHTO T-11 and T-27. The aggregates shall be crushed with a minimum of 80% two face fracture.

²May be used with aggregate other than gravel only if the aggregate asphalt combination meets the requirements of ASTM D1664 for the dry aggregate coating test.

405.2.1 - Quality Control Testing: Quality control is the responsibility of the Contractor as specified in 106.1.

The contractor shall design a quality control plan in accordance with applicable section of MP307.00.50, excluding the attached page, detailing the methods by which the quality control program will be conducted. Samples will be obtained at a minimum frequency of one sample per day of aggregate placement.

405.2.2 - Acceptance Testing: Acceptance sampling and testing of aggregates is the responsibility of the Division, except for furnishing the necessary materials. Quality control sampling and testing performed by the Contractor may be used by the Division for Acceptance.

405.2.3 - Acceptance for the Grading of Coarse Aggregate: Acceptance for gradation shall be on the basis of test results on consecutive random samples from a lot. A lot shall be considered the quantity of material represented by an average test value, not to exceed five sublots. Generally at the beginning of the project, the average shall be started on the second sample in accordance with MP 300.00.51. A subplot is the quantity of material represented by a single gradation test. In the case where only one sample is taken, this subplot shall be considered the lot. The material shall be sampled and tested in accordance with the applicable specification. The gradation test results shall be plotted on a control chart in accordance with MP 300.00.51. When the average, or when the most recent three consecutive individual test values fall outside the limits of Table 703.4 the lot of material represented will be considered nonconforming to the extent that the last of its sublots is nonconforming. When this occurs, the last subplot shall have its price adjusted in accordance with Table 405.2.3.2. In the case where the average is nonconforming and the last subplot contained is conforming, then there would be no price adjustment. In no event, however, shall a subplot of material have its price adjusted more than once, and the first adjustment, which is determined, shall apply.

405.2.3.1 - Degree of Nonconformance: When a subplot of material is to have its price adjusted, the percentage point difference between the nonconforming test value and the specification limit shall be determined for each sieve size determined to be nonconforming and this value shall be multiplied by its appropriate multiplication factor as set forth in Table 405.2.3.1 to determine the degree of nonconformance on that sieve.

TABLE 405.2.3.1

NONCONFORMING MULTIPLICATION SIEVE SIZE	FACTOR
4 IN (100mm) to No 16(1.18mm)	1.0
No 40 (4.25µm) to No 50 (300µm)	1.5
No 100 (150µm)	2.0
No 200 (75µm)	3.0

The total measure of nonconformance of an individual subplot is the sum of all nonconformances on the various sieve sizes of that subplot. When the total degree of nonconformance has been established and it is 12.0 or less, the material will be paid for at an adjusted contract price as specified in Table 405.2.3.2. When the degree of nonconformance is greater than 12.0, the nonconforming subplot shall be resolved on an individual basis, requiring a special investigation by the Engineer to determine the appropriate course of action to be followed.

If the degree of nonconformance exceeds 8.0 then the contractor shall cease operations and review and/or revise the quality control plan and/or procedure to become in compliance with these specifications.

405.2.3.2 - Price Adjustment: Aggregates not conforming with the gradation requirements will be paid for at the adjusted contract price based on the degree of nonconformance as specified in Table 405.2.3.2.

TABLE 405.2.3.2

ADJUSTMENT OF CONTRACT PRICE FOR GRADATION NOT WITHIN SPECIFICATIONS	
DEGREE OF NONCONFORMANCE	PERCENT OF CONTRACT PRICE TO BE REDUCED
1.1 to 3.0	2
3.1 to 5.0	4
5.1 to 8.0	7
8.1 to 12.0	11
Greater than 12	*

* The Division will make a special evaluation of the material and determine the appropriate action. Pending resolution of the matter, additional lifts of base or pavement shall not be placed over the nonconforming material.

CONSTRUCTION METHODS

405.3 - WEATHER RESTRICTIONS:

Surface treatment shall be constructed only when the condition of the base, subbase or existing surface is satisfactory to the Engineer, when the temperature of the material being overlaid is 50° F (10° C) or above, and when other weather conditions are satisfactory for construction. The temperature may be waived but only when approved by the Engineer. No surface treatment shall be performed between October 1 and May 1.

Surface treatment operations shall be suspended immediately when rain begins or when the project engineer determines that a rain event is imminent.

405.4 - EQUIPMENT:

Equipment shall include equipment for heating bituminous material, a self powered bituminous material pressure distributor, an aggregate spreader, and compaction equipment. Equipment shall also include scrapers, hand brooms, shovels, and other items as may be necessary to thoroughly clean the base or surface.

Equipment for heating bituminous material shall consist of a retort coil so designed that steam will not be introduced into the material and shall not degrade the emulsion.

The distributor shall be so designed, equipped, maintained and operated that bituminous material at even heat may be applied uniformly on variable widths of surface up to 15 ft. (4.6 m) at readily determined and controlled rates from 0.05 to 2.0 gal. Per sq. yd (0.22 to 9.3 liters m²) with uniform pressure and with an allowable variation from any specified rate not to exceed 0.02 gal. per sq. yd (0.09 liter m²) The distributor shall also have a cab-metering system, that will automatically adjust the flow of the bituminous material as the speed of the truck changes and allow the operator to adjust the rate of application from the cab of the truck.

Distributor equipment shall include a tachometer, pressure gages, and accurate volume measuring devices or a calibrated tank, and a thermometer for measuring temperatures of tank contents. Distributors shall be equipped with a power unit for the pump, and full circulation spray bars adjustable laterally and vertically. A manifold connection shall be provided and hand spraying equipment shall be available to cover areas and patches inaccessible to the distributor.

The spreader for cover grades of coarse aggregates shall be self-propelled. It shall be a mechanical revolving cylinder type or mechanical roller hopper spreader that can be so adjusted to spread accurately the required amounts of materials per square yard. The spreader for other grades of coarse aggregate shall be a self-propelled mechanical stone spreader capable of laying a uniform surface.

Compaction equipment shall be a pneumatic-tired roller conforming to the requirements of Section 401.9.10.

405.5-PREPARING AND REPAIRING EXISTING SURFACE:

This operation shall be performed as prescribed in 401.

405.6 - CLEANING AND SWEEPING:

Immediately before starting construction, the existing surface shall be swept and thoroughly cleaned by the use of tools or machinery as may be required to remove all mud, dirt, dust, and other caked or loose material foreign to the type of surface to be placed. Cleaning shall be done to a minimum width of one foot on each side beyond the width of the surface to be placed excluding the shoulder.

When the new surface is to be placed on an untreated aggregate surface, the sweeping shall continue until embedded larger aggregate is exposed to a depth of approximately ¼ in (6 mm). When the new surface is being compacted and finished, the Contractor shall maintain a neat edge of the surface treatment. Materials collected in the cleaning operation shall be removed and disposed of as directed.

405.7-APPLICATION OF BITUMINOUS MATERIAL:

This operation shall be performed as prescribed in 401, except as modified. The bituminous material shall be applied to the prepared surface at the rate specified in 405.12.

Except when required to maintain traffic, surface treatment operations shall be done upon the full width of the section.

Only Type-C or Type-D surface treatment shall be used on new bases.

405.8-APPLICATION OF AGGREGATE:

Immediately following each application of bituminous material, aggregate at the rate or rates called for in 405.12 shall be spread with the spreader in such a manner that the entire area being treated is uniformly covered. Equipment shall be operated so that bituminous material will be covered with aggregate before equipment passes over the area that was tacked with bituminous material. Additional aggregate shall be spread if necessary, and hand spreading shall be done to cover areas inaccessible to the spreading equipment. When directed by the Engineer, the aggregate shall be dried or moistened as required in order to obtain a near Surface Saturated Dry condition.

405.9-BROOMING AND ROLLING:

Immediately following spreading of each layer of aggregate, the entire surface of the aggregate shall be rolled until the aggregate is keyed into the bitumen. Any area that tends to ravel shall be repaired and rerolled. Rolling shall be parallel to the centerline and shall begin at the edges of the treatment and progress toward the center; on superelevated curves, rolling shall begin at the low edge of the curve and continue the entire width of the treatment, each trip uniformly overlapping the preceding trip.

Rolling shall cease before the aggregate is crushed to any appreciable extent. Rollers shall be the type and weight specified in 405.4. The number of rollers shall be sufficient to obtain compaction to the satisfaction of the Engineer. Water, to prevent adhesion of the bituminous material to the roller wheels, shall not be used in excessive amounts. The use of fuel oil, paraffin oil, and kerosene on rollers or other equipment, for the purpose of preventing material from picking up or sticking, is prohibited.

405.10-JOINTS:

The longitudinal construction joints between adjacent lanes shall be kept clean of material foreign to the type of surface being treated. The joints shall be constructed without overlaps or gaps between the materials.

The transverse joint at the end of successive sections or lanes shall be covered with paper to prevent overlapping of the bituminous material. Following its use, the paper shall be removed and disposed of satisfactorily.

405.11 - PROTECTION OF PAVEMENT AND TRAFFIC CONTROL:

The Contractor shall be responsible for the protection of the surface against damage by their equipment and personnel. Traffic shall not be permitted on any part of the work under construction until the treatment has cured sufficiently to prevent raveling or pickup under traffic. The applicable provisions of 636 shall apply for regulating traffic.

405.12-SEQUENCE OF OPERATIONS AND QUANTITIES OF MATERIALS:

The quantities and kinds of materials to be used and the sequence of applications and operations for the various treatments shall be as follows. The quantities shown are the rates per square yard (meter).

Maximum quantities of bituminous material shall be used only when the old surface is open or porous. For blast furnace slag aggregate, 91 percent of the aggregate quantities shown shall be used and the quantity of bituminous material shall be increased to a maximum of 10 percent.

The rates of aggregate and bituminous material may be adjusted by the engineer. When in the opinion of the engineer adequate coverage is not being obtained.

405.12.1-Type A-Light Seal:

- i. Clean and sweep.
- ii. Apply 0.15 to 0.25 gal. (0.7 to 0.9 liters) of bituminous material.
- iii. Spread immediately 8 to 10 lb. (4.4 to 5.5 kg) of #9 aggregate.
- iv. Roll immediately.

405.12.2-Type B-Single Surface Treatment:

- i. Clean and sweep.
- ii. Apply 0.25 to 0.40 gal. (0.9 to 1.6 liters) of bituminous material.
- iii. Spread immediately 15 to 25 lb. (8.3 to 13.5 kg) of #8 aggregate (#9 aggregate if directed by the Engineer).
- iv. Roll immediately.

405.12.3-Type C-Double Surface Treatment:

- i. Clean and sweep.
- ii. Apply 0.25 to 0.40 gal. (0.9 to 1.6 liters) of bituminous material.
- iii. Spread immediately 25 to 35 lb. (13.5 to 19 kg) of #8 aggregate (#57 or #67 aggregate if directed by the Engineer).
- iv. Roll tightly.
- v. Apply 0.25 to 0.35 gal. (0.9 to 1.5 liters) of bituminous material.
- vi. Spread immediately 10 to 20 lb. (5.5 to 11 kg) of #8 aggregate (#9, #57 or #67 aggregate if directed by the Engineer).
- vii. Alternately roll.

405.12.4-Type D-Triple Surface Treatment:

- i. Clean and sweep.
- ii. Apply 0.30 to 0.50 gal. (1.0 to 1.8 liters) of bituminous material.
- iii. Spread immediately 25 to 45 lb. (13.5 to 20.4 kg) of #8 aggregate (#57 or #67 aggregate if directed by the Engineer).
- iv. Roll tightly.
- v. Apply 0.30 to 0.50 gal. (1.0 to 1.8 liters) of bituminous material.
- vi. Spread immediately 25 to 35 lb. (13.5 to 19 kg) of #8 aggregate (#57 or #67 aggregate if directed by the Engineer).
- vii. Roll tightly.
- viii. Apply 0.25 to 0.35 gal. (0.9 to 1.5 liters) of bituminous material.
- ix. Spread immediately 10 to 20 lb. (5.5 to 11 kg) of #8 aggregate (#9 or #57 aggregate if directed by the Engineer).
- x. Alternately roll.

405.13-METHOD OF MEASUREMENT:

No materials shall be removed from the Project for any purpose until the operation has been completed and the quantities of materials incorporated into the operations have been determined, except when authorized by the Engineer.

The quantities of work done will be measured as follows:

The quantity of "Surface Treatment Aggregate" & "Patching & Leveling Aggregate" shall be measured by the ton (megagram) of material complete in place and accepted.

The number of tons (megagrams) of "Surface Treatment Aggregate" & "Patching & Leveling Aggregate" shall be determined by the total of the weights shown on receipted railroad freight bills with materials are shipped by rail; by actual measured displacement of barges certified by the producer when water shipments are made, providing materials delivered by the methods are not stockpiled or stored; or determined by the Contractor from the total and weigh slips for each vehicle load weighed on an approved standard scale or from digital printout slips from an automatic batching plant, and certified by the Contractor to be correct.

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

All truck scales shall be mounted on solid foundations which will insure their remaining plumb and level. All truck scales shall be inspected and sealed by the West Virginia Division of Labor, Bureau of Weights and Measures, or other appropriate agencies of the State or its political subdivisions. The Division may, at its option, accept inspection and sealing by out of state agencies when the material is weighed outside West Virginia.

A weigh person shall be provided by the producer. The weigh person shall certify that the weight of the material, as determined either by the truck scales or from the digital printout of the weights, is correct.

Each truck shall be weighed empty prior to each load, except at automatic batch plants approved to operate without truck scales.

A digital recorder shall be required on all truck scales. The digital recorder shall produce a printed record of the gross, tare and net weights, and the time, date, truck identification and project number. Provision shall be made for constant zero compensation and further provision shall be made so that the scales may not be manually manipulated during the printing process. The system shall be interlocked so as to allow printing only when the scale has come to rest. In case of a breakdown of the automatic equipment, the Engineer may permit manual operation for a reasonable time, normally not to exceed 48 hours, while the equipment is being repaired.

The weight of all surface moisture in the aggregate will be deducted from the pay quantity.

The quantity of "Bituminous Material" shall be the number of gallons (liters) incorporated into the completed work, which volume will be measured as prescribed in 109.1.

Where a surface treatment is placed upon a base constructed as an item in the same contract, the conditioning and cleaning and sweeping of the base shall be considered as a part of the construction of the base and no additional compensation will be allowed for "Cleaning and Sweeping".

The Quantity of "Surface Treatment" when specified to be paid by the square yard shall be measured by the total length of the area the surface treatment is applied times the average applied width of the treated area.

When items for maintaining traffic are included in the Contract, they will be measured and paid as provided in 636.

405.14-BASIS OF PAYMENT:

The quantities, determined as provided above, will be paid for at the contract unit prices bid for the items listed below, which prices and payments shall be full compensation for furnishing all the materials and doing all the work prescribed in a workmanlike and acceptable manner, including all labor, tools, equipment, supplies, and incidentals necessary to complete the work.

The Quantity of "Surface Treatment" when specified to be paid by the square yard shall include the cleaning and sweeping, aggregate and all labor and equipment required to perform the operation

405.15-PAY ITEMS:

ITEM	DESCRIPTION	UNIT
405001-*	SURFACE TREATMENT AGGREGATE, **	TON (MEGAGRAM)
405002-*	PATCHING AND LEVELING AGGREGATE, **	TON (MEGAGRAM)
405003-*	BITUMINOUS MATERIAL	GALLON (LITER)
405004-*	CLEANING AND SWEEPING	SQUARE YARDS (Square Meters)
405005-*	SURFACE TREATMENT, TYPE "type"	SQUARE YARDS (Square Meters)

* Sequence number

** Type of Aggregate

"type" from section 405.12

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

SECTION 601

STRUCTURAL CONCRETE

601.14-METHOD OF MEASUREMENT:

**DELETE PARAGRAPH ONE AND PARAGRAPH TWO OF THE SECTION AND
REPLACE WITH THE FOLLOWING TWO PARAGRAPHS:**

601.14-METHOD OF MEASUREMENT:

The quantity of work done for Class A, Class B, Class C, Class D, Class H and Class K concrete will be measured in cubic yards (meters), complete in place and accepted, as determined by the dimensions on the Plans or contract documents, and will be the number of cubic yards (meters) established in the Proposal, subject to adjustment as provided for in 104.2 and 109.2.

The quantity of work done for Class H and Class K concrete will be measured in cubic yards (meters), complete in place and accepted, as measured from one end of the bridge to the other, fascia to fascia, and from the top of the forms to the finished elevation of the proposed deck surface. If stay-in-place prefabricated metal forms are used, the measurement between the finished elevation of the proposed deck surface to half the depth of the stay-in-place prefabricated metal forms, will be utilized as the deck thickness to account for the concrete that fills the form flutes. The stay-in-place prefabricated metal form area shall be as defined in the plans.

December 29, 2008

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
SPECIAL PROVISION
FOR
SPECIAL PROVISION 614
PILING WALLS

614.7 - LAGGING AND BACKFILLING:

DELETE THE LAST PARAGRAPH AND REPLACE WITH THE FOLLOWING.

614.7 - LAGGING AND BACKFILLING:

The timber lagging shall conform to Sections 710.3 and 710.4 of the West Virginia Division of Highways Standard Specifications.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

SECTION 625

DRILLED CAISSON FOUNDATIONS

625.2-TESTS AND SUBMITTALS:

625.2.1-Experience:

DELETE THE CONTENTS OF ITEM THREE AND REPLACE WITH THE FOLLOWING:

The Engineer shall review and approve the Contractor's (Subcontractor's) caisson installation qualifications. If in the opinion of the Engineer the Contractor's qualifications are not adequate, the Contractor shall submit to the Engineer a proposed method of obtaining the necessary qualifications.

625.2.3-Installation Plan:

ADD THE FOLLOWING AFTER THE FIRST SENTENCE:

The installation Plan shall be certified (signed and sealed by a Professional Engineer licensed in West Virginia knowledgeable in drilled caisson installation) that the installation plan is complete and conforms to the plans, specifications and site conditions.

DELETE THE LAST PARAGRAPH AND REPLACE WITH THE FOLLOWING:

The Engineer will evaluate the Drilled Caisson Installation Plan for completeness. Within seven (7) calendar days after receipt of the plan, the Engineer will notify the Contractor in writing of any additional information required and/or changes necessary to complete the submission. The Engineers review shall not constitute approval or agreement that the submission meets the plans, specifications or field requirements.

ADD THE FOLLOWING AS ITEM LETTER "r":

- r) The Contractor shall provide a projected schedule of work to the MCS&T Division thirty (30) days in advance of construction of caissons. This projected schedule shall

include start date of caisson construction, date of when each caisson would need to be inspected for cleanliness and when CSL tests are to be performed for each caisson. This projected schedule will be used by the MCS&T Division to project workload and schedule manpower.

625.2.6.1-General Requirements:

DELETE THE LAST PARAGRAPH AND REPLACE WITH THE FOLLOWING:

The CSL tests shall be conducted by the Contractor in conformance with ASTM D6760 and shall be certified (signed and sealed by a Professional Engineer licensed in West Virginia knowledgeable in drilled caisson installation). The CSL tests must be performed by one of the approved testing companies as listed on the MCS&T approved list. The Engineer may approve the use of an alternate company if they show experience and a certification in conducting the CSL test procedure. The cost of this testing shall be incidental to the caisson installation.

The Contractor shall give MCS&T Division five (5) calendar days notice prior to conducting the actual CSL testing. This will allow MCS&T Division to provide a qualified technician to observe the CSL test as it is being performed. MCS&T Division will determine if this observation is required. The observation by MCS&T Division is to satisfy the division's Quality Assurance part of the CSL testing.

625.2.6.3-CSL Logging Procedures:

DELETE THE LAST PARAGRAPH AND REPLACE WITH THE FOLLOWING:

The Contractor shall conduct the CSL tests. Any defects indicated by tests shall be evaluated by the Contractor and further tests may be conducted in regard to the extent of such defects. Any time required by such tests will be considered incidental to the work and will not be cause for extra compensation related to a claim or extension of contract.

625.2.6.4 - CSL Testing Results:

DELETE THE CONTENTS AND REPLACE WITH THE FOLLOWING:

625.2.6.4-CSL Testing Results: The CSL test results will be compiled into a caisson integrity testing report for each caisson. The report will summarize and analyze any defect zones indicated on the logs. A copy of each report will be provided to the Engineer.

625.2.6.5-Evaluation of CSL Test Results:

DELETE THE CONTENTS AND REPLACE WITH THE FOLLOWING:

625.2.6.5-Evaluation of CSL Test Results: The Contractor shall submitted to the Engineer a certified (signed and sealed by a Professional Engineer licensed in West Virginia knowledgeable in drilled caisson installation) caisson integrity testing report contain the CSL test results and an Evaluation of each caisson installation determining whether or not the drilled caisson

as constructed is acceptable. The Engineer shall review the report and if the report determines that the drilled caisson is acceptable, he shall submit to the Contractor in writing within seven (7) calendar days approval to proceed with the work.

The acceptance of each drilled caisson shall be the decision of the Engineer, based on the results of the caisson integrity testing report and other information on the caisson placement. Rejection of a caisson shall require conclusive evidence that a defect exists in the caisson, which will result in inadequate or unsafe performance under service loads. If the Non Destructive Testing records are complex or inconclusive, the Engineer may require the Contractor to verify caisson conditions, in accordance with 625.2.6.6. If a defect is confirmed, the Contractor shall pay for all coring and grouting costs. If no defect is encountered, compensation for all coring and grouting will be in accordance with 104.3 and 109.4 of the Standard Specifications.

In the case that any caisson is determined to be unacceptable, the Contractor shall submit a plan for remedial action to the Engineer for approval. The approval or rejection of the remediation plan may take up to fourteen (14) calendar days. If the remediation plan is rejected the Contractor shall revise the plan and submit it for approval and the approval time is restarted. Any modifications to the foundation caisson and load transfer mechanisms caused by the remedial action will require calculations and working drawings stamped by a Professional Engineer licensed in the State of West Virginia for all foundation elements affected. All labor and materials required to perform remedial caisson action shall be provided at no cost to the Division and with no extension of the contract time.

625.2.6.6-Evaluation by Core Drilling:

DELETE THE CONTENTS AND REPLACE WITH THE FOLLOWING:

625.2.6.6-Evaluation by Core Drilling: A drilled caisson that is found to be unacceptable shall be cored by the Contractor using double tube core barrels. One or more core holes shall be drilled at the location(s) as determined by the Contractor and/or Engineer. An accurate log of the core shall be kept and the core shall be crated and properly marked showing the caisson depth at each interval of core recovery. The core, one copy of the coring log and a revised certified (signed and sealed by a Professional Engineer licensed in West Virginia knowledgeable in drilled caisson installation) caisson integrity testing report indicating the condition of the caisson shall be provided to the Engineer.

The Engineer shall review the report and if the report determines that the drilled caisson is acceptable he shall submit to the Contractor in writing within seven (7) calendar days approval to proceed with the work. If the quality of the caisson is determined to be unacceptable, then the Contractor shall proceed in accordance with 625.2.6.5.

625.3-DIMENSIONAL REQUIREMENTS:

DELETE THE CONTENTS AND REPLACE WITH THE FOLLOWING:

The dimensional requirements for Placement Tolerances and Caisson Diameters shall be met prior to placement of reinforcing steel. The Contractor shall submit his corrective plan for any deviation from the caisson location, alignment and elevation tolerances, and reinforcement dimensional requirements to the Engineer for approval. This approval may take up to fourteen (14)

calendar days. The corrective plan shall be certified (signed by a Professional Engineer licensed in West Virginia knowledgeable in drilled caisson installation). The cost of any corrective action shall be borne by the Contractor.

625.4-MATERIALS:

625.4.3-Casing:

DELETE PARAGRAPHS TWO, THREE, AND FOUR AND REPLACE WITH THE FOLLOWING:

Casing pipe used for permanent applications shall be new material and conform to ASTM A 252/A 252M, Grade 2. Casing pipe when used for temporary applications only, will initially be required to meet the requirements of permanent pipe but when removed can be transferred to the contractors stock and reused on subsequent projects.

Any required casing splices shall be welded in accordance with Section 625.2.3 e) of this specification with no interior splice plates, producing true and straight casing. All welding shall be in accordance with ANSI/AWS D1.1.

Permanent casing is required in all caissons where noted on the plans. All temporary casing shall be removed during placement of concrete unless otherwise noted on the plans. Should the Contractor be unable to remove the temporary casing or if conditions require the temporary casing remain in place, the Contractor shall pressure grout the annular space between the casing and soil. Materials and methods for grouting operation shall be submitted to the Engineer for approval for the grouting operation. There shall be no additional cost to the Division for the grouting operation.

625.5.1-General:

DELETE THE ITEM "I" AND REPLACE WITH THE FOLLOWING:

- i) CSL testing if required, corrective measures for any unacceptable caissons, removal of water from the CSL tubes and filling with an approved grout. All core holes must be filled with an approved gout.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

SECTION 633

**CONCRETE GUTTER, INVERT PIPE GUTTER
OR DUMPED ROCK GUTTER**

633.8 – BASIS OF PAYMENT:

DELETE THE ENTIRE CONTENTS AND REPLACE THE FOLLOWING.

633.8 – BASIS OF PAYMENT:

The quantities, determined as provided above, will be paid for at the contract unit prices bid for the items listed below, which prices and payments shall be full compensation for furnishing all the materials, including reinforcing steel, expansion joint material, joint sealer, waterstops, concrete base for invert pipe gutter when called for on the Plans, and all labor, tools, equipment, supplies and incidentals necessary to complete the work. No separate payment will be made for the excavation.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

SECTION 636

MAINTAINING TRAFFIC

636.3-CONTROL OF TRAFFIC THROUGH WORK AREAS:

CHANGE THE FIRST SENTENCE OF THE SECOND PARAGRAPH TO READ AS FOLLOWS:

All traffic control devices shall be fabricated and installed according to the manual, "Manual On Temporary Traffic Control for Streets and Highways", latest version, published by the Division.

636.9-TRAFFIC CONTROL DEVICES:

CHANGE THE FIRST PARAGRAPH AND REPLACE THE FOLLOWING:

Traffic control devices for work areas include, but may not be limited to, signs, barricades, drums, cones, channelizer cones, delineators, and flashers. They shall be installed in accordance with standards detailed in the manual "Manual On Temporary Traffic Control for Streets and Highways", latest version, published by the Division, or as shown on the plans.

ADD THE FOLLOWING TO THE END OF THIS SUBSECTION:

All traffic control devices shall be in compliance with the requirements of National Cooperative Highway Research Program Report 350 (NCHRP-350). This shall be accomplished through approval by the Federal Highway Administration (FHWA) based on crash testing of the device, or through manufacturer self certification for NCHRP-350 Category 1 devices, as applicable. The certification submitted for Category 1 devices shall be in substantial conformance with the format and content recommended by the FHWA.

Portable temporary traffic control sign systems (sign and stand), Type I, II, and III barricades, and other applicable devices shall be utilized in a manner that is in compliance with the device's FHWA NCHRP-350 approval letter or self certification. Sign stands and barricades shall be utilized only as tested and approved or certified in regards to the sign mounting height, sign substrate material, application of lights, barricade rail material, and any other relevant parameters. Type III barricades are not required to be tested with lights attached if the lights

utilized are 3.3 pounds or less. Sandbags are permitted as ballast for Type II and III barricades. For Type II barricades, the ballast shall be placed no higher than the bottom rail. The ballast may be draped on the bottom rail, or suspended from the top rail, hanging close to the ground. For Type III barricades, the ballast shall be placed at the ends of the skids.

Devices utilized by the Contractor shall be a model listed on the Division's Approved Products List (APL), as applicable. Devices approved and/or certified at Test Level 2, but not Test Level 3, shall not be utilized on roads having a normal posted speed limit greater than forty (40) MPH. Devices approved and/or certified at Test Level 1 only shall not be utilized on roads having a normal posted speed limit greater than twenty-five (25) MPH.

ADD THE FOLLOWING SUBSECTION:

636.13 – CHANNELIZER CONES

If specified in the project plans, Channelizer Cones may be utilized for channelization of traffic in lieu of drums. Note, when used for closures that will be in effect at night, these devices shall be spaced at a maximum of forty (40) feet where a spacing of fifty (50) feet is normally called for in the Traffic Control Manual. In addition, the maximum spacing of these devices in all lane or shoulder tapers, day or night, shall be twenty-five (25) feet. Traffic control setups utilizing Channelizer Cones are to be reviewed at least once every twelve (12) hours during non-work periods by the Contractor responsible for traffic control on the project.

636.23-METHOD OF MEASUREMENT

636.23.6-Traffic Control Devices:

AFTER THE FIFTH PARAGRAPH, REPLACE THE FOLLOWING:

When Cones are specified as the temporary channelizing device in a project, the Contractor may, at their option, utilize Channelizer Cones in lieu of Cones. However, the unit value assigned to the Channelizer Cones in this case shall be equal to the established unit value assigned to Cones.

TRAFFIC CONTROL DEVICES RATE SCHEDULE		
Device #	Description	Value in Units Each Traffic Control Device
1	Signs on portable mounts and barricades (Total sign area 16 sq. ft. (1.5 sq. meters) or greater)	170
2	Signs on portable mounts and barricades (Total sign area less than 16 sq. ft. (1.5 sq.meters))	80
3	Signs on permanent posts (Total sign area 16 sq. ft. (1.5 sq. meters) or greater)	180
4	Signs on permanent posts (Total sign area less than 16 sq. ft. (1.5 sq.meters))	90
5	Barricades-Type I	35
6	Barricades-Type II	60
7	Barricades-Type III	90
8	Drums	60
9	Cones	5
10	Vertical Panel or Ground Mounted Delineators	10
11	Barrier or Guardrail Mounted Delineators (Bid Incidental to Barrier or Guardrail)	0
12	Channelizer Cones	40
13	Oversize signs	300

- Orange sign sheeting to be retroreflective fluorescent orange, Type ASTM-VI (roll-up signs) or Type ASTM-IX (alum substrate signs). All other signs shall be manufactured using Type ASTM-III sheeting.
- Drum and Channelizer Cone sheeting to be six (6) inch, Type ASTM-III.
- Barricade sheeting shall be Type ASTM-III.
- Cone sheeting to be reboundable Type ASTM-III.
- Only those Drums, Sheetings, Ground Mounted Delineators, Barrier or Guardrail Mounted Delineators, and Channelizer Cones which have been field tested and approved by the Division will be permitted. A list of the approved suppliers and their code numbers may be obtained by contacting:

March 25, 2009

**West Virginia Division of Highways
Materials Division
190 Dry Branch Rd.
Charleston, WV 25306**

Payment for furnishing, installing, and maintaining the work area signs indicating fines shall be as part of Item 636011-*. "TRAFFIC CONTROL DEVICES." And all the previous provisions of this Article shall apply.

January 17, 2006

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

**SECTION 703
COARSE AGGREGATE**

703.6 – ACCEPTANCE PLAN FOR GRADING OF COARSE AGGREGATE:

DELETE SECTION 703.6 IN ITS ENTIRETY INCLUDING 703.6.1, 703.6.2,
AND 703.6.3.

December 29, 2008

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
SPECIAL PROVISION
FOR
SPECIAL PROVISION 710
WOOD MATERIALS

710.3 - PRESERVATIVE TREATMENT

710.3.1

DELETE THE CONTENTS AND REPLACE WITH THE FOLLOWING:

710.3.1 - All hardwood for highway construction shall meet the requirements of AWPA Standard C2 for all waterborne preservatives, and shall be pressure treated to refusal. The Chromated Copper Arsenate (CCA) shall no longer be used as a waterborne preservative to treat hardwood.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

**SECTION 711
PAINTS, COATINGS, OILS, AND INKS**

DELETE THE FOLLOWING SUBSECTIONS.

711.7-FIELD OR SHOP PRIMER:

711.8-FIELD PRIMER-SLOW DRYING:

711.10-INTERMEDIATE FIELD COAT:

711.11-PIGMENTED FINISH COAT:

SUBSTITUTE THE FOLLOWING.

711.7 THROUGH 711.11 - BLANK

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

SECTION 714

CONCRETE, CLAY, FIBER AND PLASTIC PIPE

714.19 – CORRUGATED POLYETHYLENE PIPE

DELETE THE THIRD PARAGRAPH AND REPLACE WITH THE FOLLOWING:

:

For nominal pipe sizes of 12 to 60 inches (300 to 1500mm) the pipe shall meet the requirements of AASHTO M 294 type "S" or type "D" only.

March 4, 2008

**WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
SPECIAL PROVISION
FOR**

**SECTION 715
MISCELLANEOUS MATERIALS**

715.9-WARNING DEVICES:

715.9.1 – General:

MODIFY THIS SUBSECTION AS FOLLOWS:

715.9.1-General: Warning devices shall include, but not be limited to, signs, barricades, auxiliary barriers, channelizing devices, hazard warning lights, flares, and reflectors. Unless otherwise indicated such devices shall conform to the standard, "Manual On Temporary Traffic Control for Streets and Highways ", published by the Division. The Contractor shall exhibit evidence that the warning devices furnished meet the requirements detailed.

715.9.5-Warning Lights:

MODIFY THIS SUBSECTION AS FOLLOWS:

715.9.5-Warning Lights: The purpose of this specification is to provide minimum requirements for light-emitting warning lights used for warning purposes in roadway work zones.

715.9.5.1 – Types Of Warning Lights: Types of warning lights include any device which emits light, either in a flashing or steady burn mode, using any power source (electrical, solar, etc.). The lights include, among others, incandescent lamps, light emitting diodes (LED), neon, and halogen lamps. Types of warning lights are categorized as follows:

- Type A: low intensity flashing warning lights
- Type B: high intensity flashing warning lights
- Type C: steady burn warning lights
- Type D: 360-degree steady burn warning lights

715.9.5.2 – General Requirements:

715.9.5.2.1 – Internal and External Illumination: The warning lights shall be internally illuminated by means of a light source behind a lens and, for Type A and C devices, shall be externally illuminated by retroreflective elements built into the lens to enable warning lights to be seen by retro-reflection of the light from the headlights of oncoming vehicles. The type B device may have a retro-reflective ring of prismatic tape or built in elements that meet the requirements of Section 715.9.5.10.

715.9.5.2.2 – Battery Operation and Battery Protection: When the device is to be operated by battery, the battery must be entirely enclosed in a weatherproof case that is constructed of steel or any other material such as high-impact plastics suitable for use along roadway work zones. The case shall be secured by a locking device. The battery may be replaceable or rechargeable using, for example, solar collectors or an AC power source.

715.9.5.2.3 – AC power Operation: When the device is to be operated by a 120-volt, 60Hz power supply, the unit shall be supplied with a separate ground wire and shall be protected with suitable fuses. At no time shall the effective intensity of the light have a value greater than 500 candelas. The connections and equipment used shall be in accordance with the pertinent current standards of the Institute of Electrical and Electronics Engineers, the American Society for Testing Materials, and the National Board of Fire Underwriters. In those areas where there are pertinent local ordinances and requirements, the wiring, material, and installation procedures shall comply with the local requirements.

715.9.5.3 – Flash Requirements:

715.9.5.3.1 - Flash Rate: The light from Type A and Type B devices shall have a flash rate of 65 (+/- 10) flashes per minute for temperatures between -29 deg C to 66 deg C (-20 deg F to 150 deg F) regardless of the power source.

715.9.5.3.2 – ON-time:

- a) Definition: ON-time is defined as the period of the flash where instantaneous intensity is equal to or greater than the effective intensity as specified in Section 715.9.5.4.1.2.
- b) Type A: The light shall have an ON-time of not less than 10 percent of the flash cycle.
- c) Type B: The light shall have an On-time of not less than 8 percent of the flash cycle.
- d) Maximum allowable ON-time for either Type A or Type B lights shall be 50 percent.

715.9.5.4 – Optical Requirements:

715.9.5.4.1 – Photometry:

715.9.5.4.1.1 – Light Distribution: The light distribution for Types A, B and C shall have a minimum lateral width of 9 degrees and a minimum vertical height of 5 degrees from the optical axis of the system. Within these confines, minimum candela requirements, as specified in Sections 715.9.5.4.1.2.1 through 715.9.5.4.1.2.3, shall be met.

The light distribution for Type D shall be 360 degrees in the horizontal plane and shall be a minimum of 5 degrees vertical from the horizontal plane. Within these confines, minimum candela requirements, as specified in Section 715.9.5.4.1.2.4, shall be met.

715.9.5.4.1.2 – Minimum Candela Requirements:

715.9.5.4.1.2.1 – Type A: For Type A the effective luminous intensity shall not drop below 4.0 candelas within the area specified in Section 715.9.5.4.1.1, during the first 336 hours of continuous flashing.

715.9.5.4.1.2.2 – Type B: For Type B the effective luminous intensity shall not drop below 35 candelas within the area specified in Section 715.9.5.4.1.1 during the first 168 hours of continuous flashing. During the hours of darkness, the effective intensity may be reduced by a maximum of 50 percent.

715.9.5.4.1.2.3 – Type C: For Type C the luminous intensity shall not drop below 2.0 candelas within the area specified in Section 715.9.5.4.1.1 during the first 168 hours of continuous burning.

715.9.5.4.1.2.4 – Type D: For Type D the luminous intensity on a horizontal plane shall not drop below 1.0 candelas. At 5 degrees vertical from the horizontal plane, the luminous intensity shall not drop below 0.5 candelas. This performance shall be met throughout the first 168 hours of continuous burning. Type D steady burn warning lights shall be visible on a clear night from a distance of 3,000 feet.

715.9.5.4.2 – Testing Procedures:

715.9.5.4.2.1 – Type A and Type B Effective Intensity: The effective intensity of Type A and Type B lights shall be calculated using the “Guide for Calculating the Effective Intensity of Flashing Signal Lights,” published in the November 1964 edition of Illuminating Engineering magazine, by the Illuminating Engineering Society of North America, or latest revision.

715.9.5.4.2.2 – Type C and Type D Effective Intensity: The intensity of the Type C and Type D lights shall be tested as set forth in the current edition of SAE Standard J575 (Society of Automotive Engineers, Inc., Lighting Equipment and Photometric Tests).

715.9.5.4.2.3 – Retro-reflection: Retro-reflection shall be tested in accordance with the current edition of SAE Standard J594.

715.9.5.4.2.4 – ATSSA Test T-101: Warning devices furnished or approved under this specification shall be tested in accordance with the current edition of ATSSA Test Procedure T-101 (American Traffic Safety Services Association).

715.9.5.4.2.5 – Disabling of Solar Collectors: If the device uses a solar collector, the collector shall be disabled by either covering the collector or disconnecting it for the entire test period.

715.9.5.5 – Lens Requirements: The following section applies to devices that use a lens.

715.9.5.5.1 – Lens Sizes:

715.9.5.5.1.1 – Types A, B, and C: Type A, B and C device lenses shall not be less than 177 mm (7 in) in diameter, including a retro-reflector ring of 12 mm (1.2 in) width around a minimum of 300 degrees of the lens periphery.

715.9.5.5.1.2 – Type D: A Type D device lens shall be 360 degrees circular in the horizontal plane, with a minimum outside diameter of 75 mm (3 in) and a minimum height of 75 mm (3 in), including mounting flanges.

715.9.5.5.2 – Lens Directionalities:

715.9.5.5.2.1 – Types A and C: Type A and Type C device lenses shall be either bi-directional or unidirectional.

715.9.5.5.2.2 – Type B: A Type B device lens shall be unidirectional.

715.9.5.5.2.3 – Type D: A Type D device shall have a 360 degree dome lens.

715.9.5.5.3 – Lens Chromaticity: The chromaticity of the lens colors and retro-reflective colors shall be tested using a light source with a color temperature ranging between 2600 deg K and 2856 deg K. The chromaticity of lenses and the emitted light from both yellow and red warning lights, and of both yellow and red retro-reflectors, shall conform to the chromaticity requirements of Section 8.04 and Figure 1 of the ITE Vehicle Traffic Control Signal Head standard. The wavelength spectra distribution of the light source shall be within the range of 500 nm to 650 nm.

715.9.5.5.4 – Lens Retroreflector Performance: The specific intensity of the retro-reflector, when provided, shall meet the requirements as specified in Section 715.9.5.10.

715.9.5.5.5 – Lens Material: The lens shall be of one-piece construction. The lens shall be manufactured using materials such as plastic capable of meeting the chromaticity requirements of this specification. The lens material shall meet the test requirements set forth in the most recent edition of SAE Standard J576 (Society of Automotive Engineers, Inc., Lighting Equipment and Photometric Test). For the purposes of this specification, the exposure time and conditions of paragraph 3.4.3, SAE Standard J576, shall be for one year (365 calendar days).

715.9.5.6 – Head and Housing Requirements:

715.9.5.6.1 – Swivel Heads: If swivel capabilities as described in this Section are not incorporated in the device used to mount a Type A or Type C light to any channelizing device, barrier, or a sign, the head shall be mounted on the housing in a manner permitting it to be swiveled through a minimum 90 degree arc in a horizontal plane. If swiveling is to be accomplished by rotating the head, the design of the device head and its construction shall be such that rotating the head will not result in damaging any circuitry or wiring. If the lens assembly rotates around the light source, the photometrics shall meet the requirements of Section 715.9.5.9.

715.9.5.6.2 – Housing:

715.9.5.6.2.1 - Definition: Housing is defined as the case containing the battery and may contain the circuitry.

715.9.5.6.2.2 - Material: The housing, when constructed of steel, shall be constructed of No. 18 U.S. Standard Gauge Steel. The housing may be made of any other material such as high-impact plastics suitable for use along roadway work zones.

715.9.5.6.3 – Painting: The housing and the lens frame, if constructed using corrodible metal, shall be properly cleaned, degreased and pretreated to promote adhesion. It shall be given one or more coats of enamel which, when dry, shall completely obscure the metal substrate. The enamel coating shall be of such quality that when the coated case is struck a light blow with a sharp tool, the paint shall not chip or crack, and if scratched with a knife shall not powder.

715.9.5.6.4 – Weatherproofing: The case shall be constructed and closed as to exclude moisture that would affect the specified operation of the light. The case shall have a weep hole to allow the escape of moisture.

715.9.5.6.5 – Sun Shield Visor: All Type B Warning Lights shall incorporate a sun shield visor for the purpose of enhancing visibility during daylight conditions. The visor shall encircle a minimum of 77-1/2 degrees of the face of the lens in each direction from a datum point at the top of the lens face. At the datum point, the lens shall extend a minimum of 4-3/4" out from the face of the lens. At the ends of the visor, as measured in degrees in each direction from the above described datum point, the visor shall extend a minimum of 1-1/2" out from the face of the lens.

715.9.5.7 – Photoelectric Controls: Photoelectric controls, when provided, shall keep the device operating whenever the ambient light level falls below 215 lux.

715.9.5.8 – Testing and Certification, Quality, and Marking:

715.9.5.8.1 – Testing and Certification of New Warning Lights: Warning lights furnished or approved for use under this specification shall be statistically represented by units that have been tested and approved as to conformance to these specifications by an independent accredited testing organization. Certification as to conformance to these specifications shall be provided upon request and will be furnished by the manufacturer as substantiated by testing results from an independent accredited testing laboratory or organization. Warning lights tested and approved as described above shall be retested for compliance and recertification when required or when the supplier makes changes to any aspect of the light-emitting warning devices covered by this specification. For example, whenever any changes are made in the lens, light source, or circuitry.

715.9.5.8.2 – Quality: All electrical components, the quality of the materials used, and the workmanship of all warning lights furnished for use and certified as to the conformance to this specification shall be the same as that of models approved under this specification.

715.9.5.8.2 – Marking: Each device shall be plainly marked as to type (A, B, C or D), the manufacturer’s or customer’s name, model number or name, and label or marking stating it meets the requirements of the Institute of Traffic Engineers “Purchase Specification for Flashing and Steady Burn Warning Lights”. The location of the label or marking may be internal or external to the housing, and may be placed on the outside of the circuit and/or lamp holder assembly.

715.9.5.9 – Summary Information:

	Type A Low Intensity	Type B High Intensity	Type C Steady Burn	Type D Steady Burn
Lens Directional Faces	1 or 2	1	1 or 2	360 degrees
Flash Rate Per Minute	55 to 75	55 to 75	N.A.	N.A.
Minimum On-Time	10%	8%	N.A.	N.A.
Minimum Effective Luminous Intensity*	4.0 Candelas (yellow) ; 1.0 Candelas (Red)	35 candelas** (yellow); 12 candelas** (red)	N.A.	N.A.
Minimum Luminous Intensity*	N.A.	N.A.	2.0 candelas	1.0 to 0.5 candelas
Hours of Required Operation*	dusk to dawn	24 hours / day	dusk to dawn	dusk to dawn

* - These values shall be maintained within the areas as specified in Section 715.9.5.4.1

** - During hours of darkness, the effective intensity may be reduced by a maximum of 50%

715.9.5.10 – Retroreflector Requirements:

Observation Angle	Entrance Angle	Yellow Luminous Intensity (candelas / lux)	Red Luminous Intensity (candelas / lux)
0.2	20 deg left	0.9	0.23
0.2	10 deg left	1.31	0.33
0.2	0 deg (HV)	1.67	0.42
0.2	10 deg right	1.31	0.33
0.2	20 deg right	0.9	0.23

715.9.5.11 – Approved Products Listing: Warning Lights utilized as part of WVDOH Construction projects must be included on the WVDOH Approved Products Listing (APL) for Warning Lights. A list of approved products and their code numbers may be obtained by contacting:

**West Virginia Division of Highways
Material Controls, Soil and Testing Division
190 Dry Branch Road
Charleston, WV 25306**

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

SECTION 715

MISCELLANEOUS MATERIALS

715.9 - WARNING DEVICES:

715.9.3 - Channelizing Devices and Auxiliary Barriers:

ADD THE FOLLOWING SUBSECTION.

715.9.3.1 - Channelizer Cones: The Channelizer Cone utilized shall be manufactured using a lightweight, reboundable plastic material, such as Low Density Polyethylene. The material used to manufacture the Channelizer Cone shall be colored bright orange throughout, and shall include UV stabilizers. The Channelizer Cone shall utilize a detachable low profile rubber base for ballast. Two different categories of bases shall be recognized.

Each Channelizer Cone shall utilize retroreflective sheeting for nighttime visibility. The Channelizer Cone cross-section shall be round where the Retroreflective sheeting is to be applied. The Retroreflective sheeting utilized shall be 2 each 6-inch (150 mm) wide bands of orange Type ASTM-III sheeting, and 2 each 6-inch (150 mm) wide bands of white Type ASTM-III sheeting. The top band of sheeting shall be orange and shall be placed such that the top edge of the band is approximately 43 inches (1050 mm) above the bottom of the Channelizer Cone. The remaining white and orange bands shall be alternated down the Channelizer Cone, with each band separated by approximately 0.5 edge inches (12 mm) (+/-0.5 inch (12 mm)). The diameter of the Channelizer Cone at the top of the edge of the top band of sheeting shall be approximately 4 inches (100 mm). The diameter approximately 5½ inches (137 mm). The Channelizer Cone may be constructed such that the diameter of the of the Channelizer Cone transitions from the top to the bottom uniformly, or the Channelizer Cone may utilize a tiered construction such that the section of the Channelizer Cone that each band of sheeting is attached to is of a different constant diameter, with each tier going down the Channelizer Cone being a larger diameter than the one above it.

Two different categories of bases shall be recognized, as described below.

715.9.3.1.1 - 55 MPH or Less Channelizer Cone Bases: Bases for use only on roadways with a normal (non work zone) posted speed limit of 55 MPH or less shall weigh a minimum of 15 pounds (6.8 kg.). These bases may be a symmetrical or non-symmetrical shape of the manufacturer's choosing, but shall not be round. The square or rectangular effective footprint defined by the outer extremes of the base shall meet the following guidelines:

- If the footprint is square, the overall footprint shall not exceed 20" x 20" (500 mm x 500 mm)
- If the footprint is rectangular, the measurement in one direction shall not exceed 24" (600 mm) in one direction, and 18" (450 mm) in the other direction.

715.9.3.1.2 - 60 MPH or Greater Channelizer Cone Bases: Bases for use on roadways with a normal (non-work zone) posted speed limit of 60 MPH or greater shall weigh a minimum of 20 pounds (9.1 kg.). These bases shall be rectangular in shape in order to provide maximum tipping resistance when the long side of the base is installed parallel to traffic. The long dimension of the base shall be a minimum of 24 inches (600 mm) in length. The short dimension of the base shall be a minimum of 12 inches (300 mm), and a maximum of 20 inches (500 mm) in length. All bases should be manufactured within the parameters described in a manner to provide stability similar to other industry standard Channelizer Cones, and will be subject to review and testing by WVDOH personnel for approval. Note, bases meeting the requirements described above may also be used in work zones with a normal (non-work zone) posted speed of 55 MPH or less.

715.9.3.1.3 – Approved Products: The Channelizer Cone utilized shall be a model off the Division's current Approved Products Listing (APL). A list of qualified devices and their manufacturers may be obtained by contacting the Materials Division at the following address:

**West Virginia Division of Highways
Material Controls, Soils, and Testing
190 Dry Branch Road
Charleston, West Virginia 25306**

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

SECTION 716

EMBANKMENT AND SUBGRADE MATERIAL

716.1.1.2-Granular Material:

DELETE THE THIRD SENTENCE AND INSERT THE FOLLOWING:

Granular material shall not have more than 25 percent by weight of grains or particles passing the No. 200 (75 μ m) sieve (determined by AASHTO T-27) and the Plasticity Index shall not be more than 6 (determined by AASHTO T-90).