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5 -



SM No. CNH0010010451

PROPOSAL AND CONTRACT DOCUMENTS

FOR THE CONSTRUCTION OF
(STATE DELEGATED)

5
Interchange Improvements at I-10 and Gautier/Vancleave Road, known as
Federal Aid Project No. NH-0010-01(045) / 104273301 in Jackson County.
Project Completion: January 10, 2014

NOTICE

**BIDDERS MUST PURCHASE A BOUND PROPOSAL
FROM MDOT CONTRACT ADMINISTRATION DIVISION
TO BID THIS PROJECT.**

Electronic addendum updates will be posted on www.gomdot.com

**SECTION 900
OF THE CURRENT
2004 STANDARD SPECIFICATIONS
FOR ROAD AND BRIDGE CONSTRUCTION
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
JACKSON, MISSISSIPPI**

**BIDDER CHECK LIST
(FOR INFORMATION ONLY)**

- | _____ All unit prices have been entered **into Expedite Bid** in accordance with Subsection 102.06 of the Mississippi Standard Specifications for Road and Bridge Construction.
- | _____ **Expedite bid** sheets have been stapled and inserted into the proposal package.
- _____ First sheet of SECTION 905--PROPOSAL has been completed.
- _____ Second sheet of SECTION 905--PROPOSAL has been completed and signed.
- _____ Addenda, if any, have been acknowledged. Second sheet of Section 905 listing the addendum number has been substituted for the original second sheet of Section 905. Substituted second sheet of Section 905 has been properly completed, signed, and added to the proposal.
- _____ DBE/WBE percentage, when required by contract, has been entered on last sheet of the bid sheets of SECTION 905 - PROPOSAL.
- _____ Form OCR-485, when required by contract, has been completed and signed.
- | _____ The last sheet of the **Expedite** bid sheets of SECTION 905--PROPOSAL has been signed.
- _____ Combination Bid Proposal of SECTION 905--PROPOSAL has been completed for each project which is to be considered in combination (See Subsection 102.11).
- _____ Equal Opportunity Clause Certification, when included in contract, has been completed and signed.
- _____ The Certification regarding Non-Collusion, Debarment and Suspension, etc. has been executed in duplicate.
- _____ A certified check, cashier's check or bid bond payable to the State of Mississippi in the principal amount of 5% of the bid has been included with project number identified on same. A bid bond has been signed by the bidder and has also been signed or countersigned by a Mississippi Agent or Qualified Nonresident Agent for the Surety with Power of Attorney attached.
- _____ ON FEDERAL FUNDED PROJECTS, the Notice To Bidders regarding DUNS Requirements has been completed and included in the contract documents.
- _____ Non-resident Bidders: ON STATE FUNDED PROJECTS ONLY, a copy of the current laws regarding any preference for local Contractors from State wherein domiciled has been included. See Subsection 103.01, Mississippi Standard Specifications for Road and Bridge Construction, and Section 31-7-47, MCA, 1972 regarding this matter.
- | Return the **MDOT flash drive with completed EBS file**, proposal and contract documents in its entirety in a sealed envelope. DO NOT remove any part of the contract documents; exception - an addendum requires substitution of second sheet of Section 905. A stripped proposal is considered as an irregular bid and will be rejected.

Failure to complete any or all of the applicable requirements will be cause for the proposal to be considered irregular.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

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- 907-703-10: Aggregates, W/ Supplement
- 907-707-4: Rubber Type Gaskets
- 907-711-4: Synthetic Structural Fiber Reinforcement
- 907-713-2: Admixtures for Concrete, W/ Supplement
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SECTION 905 - PROPOSAL,
PROPOSAL BID ITEMS,
COMBINATION BID PROPOSAL,
CERTIFICATION OF PERFORMANCE - PRIOR FEDERAL-AID CONTRACTS,
CERTIFICATION REGARDING NON-COLLUSION, DEBARMENT AND SUSPENSION,
SECTION 902 - CONTRACT FORM, AND SECTION 903 - CONTRACT BOND FORMS,
OCR-485.

(REVISIONS TO THE ABOVE WILL BE INDICATED ON THE SECOND SHEET
OF SECTION 905 AS ADDENDA)

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 901 - ADVERTISEMENT

Sealed bids will be received by the Mississippi Transportation Commission in the Office of the Contract Administration Engineer, Room 1013, Mississippi Department of Transportation Administration Building, 401 North West Street, Jackson, Mississippi, until 10:00 o'clock A.M., Tuesday, February 26, 2013, and shortly thereafter publicly opened on the Sixth Floor for:

Interchange Improvements at I-10 and Gautier/Vancleave Road, known as Federal Aid Project No. NH-0010-01(045) / 104273301 in Jackson County.

The attention of bidders is directed to the Contract Provisions governing selection and employment of labor. Minimum wage rates have been predetermined by the Secretary of Labor and are subject to Public Law 87-581, Work Hours Act of 1962, as set forth in the Contract Provisions.

The Mississippi Department of Transportation hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, sex, age, disability, religion or national origin in consideration for an award.

The award of this contract will be contingent upon the Contractor satisfying the DBE requirements.

Bid proposals must be purchased online at <https://shopmdot.ms.gov>. Specimen proposals may be viewed and downloaded online at no cost at <http://mdot.ms.gov> or purchased online. Proposals are available at a cost of Ten Dollars (\$10.00) per proposal plus a small convenience fee. Cash or checks will not be accepted as payment.

Plans may be acquired on a cost per sheet basis from MDOT Plans Print Shop, MDOT Shop Complex, Building C, Room 114, 2567 North West Street, Jackson, Mississippi 39216, Telephone (601) 359-7460 or e-mail at plans@mdot.state.ms.us or FAX (601) 359-7461. Plans will be shipped upon receipt of payment.

Bid bond, signed or countersigned by a Mississippi Agent or Qualified Nonresident Agent, with Power of Attorney attached, a Cashier's check or Certified Check for five (5%) percent of bid, payable to STATE OF MISSISSIPPI, must accompany each proposal.

The attention of bidders is directed to the provisions of Subsection 102.07 pertaining to irregular proposals and rejection of bids.

MELINDA L. MCGRATH
EXECUTIVE DIRECTOR

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1

CODE: (IS)

DATE: 05/03/2004

SUBJECT: Governing Specifications

The current (2004) Edition of the Standard Specifications for Road and Bridge Construction adopted by the Mississippi Transportation Commission is made a part hereof fully and completely as if it were attached hereto, except where superseded by special provisions, or amended by revisions of the Specifications contained herein. Copies of the specification book may be purchased from the MDOT Construction Division.

A reference in any contract document to controlling requirements in another portion of the contract documents shall be understood to apply equally to any revision or amendment thereof included in the contract.

In the event the plans or proposal contain references to the 1990 Edition of the Standard Specifications for Road and Bridge Construction, it is to be understood that such references shall mean the comparable provisions of the 2004 Edition of the Standard Specifications.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 151

CODE: (IS)

DATE: 06/18/2004

SUBJECT: Gopher Tortoises

Bidders are hereby advised that the Contractor will be required to make special considerations regarding gopher tortoises on this project. In addition to the normal required documentation associated with borrow pits, the Contractor shall, for each site used to obtain or dispose of materials associated with this project, provide the Engineer with a letter from a qualified biologist certifying that the site was inspected prior to any clearing of vegetation or disposal of project materials and that the site is not inhabited by gopher tortoises, or appropriate avoidance measures have been installed. No individual lacking the proper State or Federal license shall touch or otherwise harass a gopher tortoise.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SECTION 904 - NOTICE TO BIDDERS NO. 640

CODE: (IS)

| DATE: 09/26/2005

SUBJECT: Fiber Reinforced Concrete

Bidders are hereby advised that synthetic structural fibers meeting the requirements of Subsection 907-711.04 may be used in lieu of wire mesh in some items of construction. Substitution of fibers for wire mesh will be allowed in the construction of paved ditches, paved flumes, paved inlet apron, driveways, guard rail anchors and pile encasements. Substitution in any other items of work must be approved by the State Construction Engineer prior to use.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 883

CODE: (IS)

DATE: 04/28/2006

SUBJECT: Payroll Requirements

Bidders are hereby advised that the Contractor and Subcontractor(s) are required to submit payroll information to the Project Engineers on a weekly basis.

On Federal-Aid Projects, CAD-880, CAD-881 and certified payroll submissions are required each week the Contractor or a Subcontractor performs work on the project. This is addressed in Section V, page 6 of Form FHWA-1273.

On State-Funded Projects, CAD-880 is required each week the Contractor or a Subcontractor performs work on the project.

When no work is performed on either Federal-Aid and State-Funded Projects, the Contractor should only submit CAD-880 showing no work activities.

The Contractor shall make all efforts necessary to submit this information to the Project Engineer in a timely manner. The Engineer will have the authority to suspend the work wholly or in part and to withhold payments because of the Contractor's failure to submit the required information. Submission of forms and payrolls shall be current through the first full week of the month for the estimate period in order for the Project Engineer to process an estimate.

Bidders are advised to review the requirements regarding payroll submissions in Section 110 of the Standard Specifications.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1322

CODE: (SP)

DATE: 1/22/2007

SUBJECT: Non-Use of Precast Drainage Units

Bidders are hereby advised that the use of precast inlets and junction boxes will **NOT** be allowed on this project. Subsection 601.02.3 states that " the Contractor may request approval from the Engineer to furnish and install precast units in lieu of cast-in-place units". Should the Contractor make this request, the request will be denied.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1405

CODE: (IS)

DATE: 03/15/2007

SUBJECT: ERRATA AND MODIFICATIONS TO THE 2004 STANDARD SPECIFICATIONS

<u>Page</u>	<u>Subsection</u>	<u>Change</u>
101	201.01	In the second sentence of the first paragraph, change “salvable” to “salvageable”.
107	202.04	In the fourth sentence of the fourth paragraph, change “yard” to “feet”.
107	202.05	In the list of units measurements for 202-B, add “square foot”.
132	211.03.4	In the second sentence of the second paragraph, change “planted” to “plated”.
192	306.02.4	In the first line of the first paragraph, delete the word “be”.
200	307.03.7	In the fourth sentence of the second paragraph, change “lime-fly ash” to “treated”.
236	401.01	Change the header from “Section 403” to “Section 401”.
242	401.02.3.2	In the first sentence of the third full paragraph, add “1/8” in the blank before the inch mark.
250	401.02.6.3	In the second sentence of the first paragraph on page 250, change “rutting over ”” to “rutting over 1/8" ”.
253	401.02.6.4.2	In the paragraph preceding the table, change “91.0” to “89.0”.
259	401.03.1.4	In the first paragraph, change “92.0 percent” to “the specified percentage (92.0 or 93.0)”.
269	403.03.2	In the table at the top of page 269, change the PI requirement from “= ” to “≤ ”.

- 278 404.04 In the second sentence, change the subsection from “401.04” to “403.04”.
- 283 409.02.2 Change “PG 64-22” to “PG 67-22”.
- 294 413.02 In the first sentence of the second paragraph, change “707.02.1.3” to “Subsection 707.02.1.3”.
- 340 511.04 In the second sentence of the second paragraph, change “412” to “512”.
- 349 601.03.3 In the first sentence, change “804.03.2” to “804.03.5”.
- 355 603.02 Change the subsection reference for Joint mortar from “707.03” to “714.11”.
- 369 604.04 In the first sentence, change “601.04” to “Subsection 601.04”.
- 427 619.04 Delete the second paragraph.
- 442 625.04 In the third paragraph, change “626.04” to “Subsection 626.04”.
- 444 626.03.1.2 Delete the third sentence of the first paragraph.
- 464 631.02 Change the subsection reference for Water from “714.01.0” to “714.01.1”.
- 570 682.03 Change the subsection number from “682-03” to “682.03”.
- 575 683.10.4 Change the subsection number from “683.10.4” to “683.04”.
- 575 683.10.5 Change the subsection number from “683.10.5” to “683.05”.
- 596 701.02 In the table under the column titled “Cementations material required”, change Class F, FA” to “Class F FA,”.
- 603 702.11 In the first sentence, change “702.12” to “Subsection 702.12”.
- 612 703.04.2 In the fifth paragraph, delete “Subsection 703.11 and”.
- 616 703.07.2 In the Percentage By Weight Passing Square Mesh Sieves table, change the No. 10 requirement for Class 7 material from “30 - 10” to “30 - 100”.

- 618 703.13.1 In the first sentence of the first paragraph, change “703.09” to “703.06”.
- 618 703.13.2 In the first sentence, change “703.09” to “703.06”.
- 671 712.06.2.2 In the first sentence, change “712.05.1” to “Subsection 712.05.1”.
- 689 714.11.2 In the first sentence, change “412” to “512”.
- 709 715.09.5 In the first sentence of the first paragraph, change “guage” to “gauge”.
- 717 717.02.3.4 In the top line of the tension table, change “1 1/2” to “1 1/8” and change “1 1/8” to “1 1/2”.
- 741 720.05.2.2 In the last sentence of this subsection, change “720.05.2.1” to “Subsection 720.05.2.1”.
- 827 803.03.2.3.7.5.2 In the first sentence of the second paragraph, change “803.03.5.4” to “803.03.2.3.4”.
- 833 803.03.2.6 In the first sentence, change “803.03.7” to “803.03.2.5”.
- 854 804.02.11 In the last sentence of the first paragraph, change “automatically” to “automatic”.
- 859 804.02.13.1.3 In the last sentence, change Subsection “804.02.12.1” to “804.02.12”.
- 879 804.03.19.3.2 In the first sentence of the third paragraph, change “listed on of Approved” to “listed on the Approved”.
- 879 804.03.19.3.2 In the last sentence of the last paragraph, change “804.03.19.3.1” to “Subsection 804.03.19.3.1”.
- 962 814.02.3 In the first sentence, change “710.03” to “Subsection 710.03”.
- 976 820.03.2.1 In the first sentence, change “803.02.6” to “803.03.1.7”.
- 976 820.03.2.2 In the first sentence, change “803.03.9.6” to “803.03.1.9.2”.
- 985 Index Change the subsection reference for Petroleum Asphalt Cement from “702.5” to “702.05”.

985	Index	Change the subsection reference for the Definition of Asphaltic Cement or Petroleum Asphalt from “700.2” to “700.02”.
985	Index	Change the subsection reference for Automatic Batchers from “501.03.2.4” to “804.02.10.4”.
986	Index	Delete “501.03.2” as a subsection reference for Batching Plant & Equipment.
988	Index	Change the subsection reference for the Central Mixed Concrete from “501.03.3.2” to “804.02.11”.
988	Index	Change the subsection reference for the Concrete Batching Plant & Equipment from “501.03.2” to “804.02.11”.
999	Index	Delete “501.03.3.3” as a subsection reference for Truck Mixers.
1001	Index	Change the subsection reference for Edge Drain Pipes from “605.3.5” to “605.03.5”.
1002	Index	Change the subsection reference for Metal Posts from “713.05.2” to “712.05.2”.
1007	Index	Change the subsection reference for Coarse Aggregate of Cement Concrete Table from “703.3” to “703.03”.
1007	Index	Change the subsection reference for Composite Gradation for Mechanically Stabilized Courses Table from “703.8” to “703.08”.
1009	Index	Delete “501.03.3.3” as a subsection reference for Truck Mixers and Truck Agitators.
1010	Index	Delete reference to “Working Day, Definition of”.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SECTION 904 - NOTICE TO BIDDERS NO. 1928

CODE: (IS)

| DATE: 04/14/2008

SUBJECT: Federal Bridge Formula

Bidders are hereby advised that Federal Highway Administration Publication No. FHWA-MC-94-007, **BRIDGE FORMULA WEIGHTS**, dated January 1994, is made a part of this contract when applicable.

Prior to the preconstruction conference, the Contractor shall advise the Engineer, in writing, what materials, if any, will be delivered to the jobsite via Interstate route(s).

Copies of the **BRIDGE FORMULA WEIGHTS** publication may be obtained by contacting:

Federal Highway Administration
400 7th Street, SW
Washington, DC 20590
(202) 366-2212

or

| http://ops.fhwa.dot.gov/freight/sw/brdgcalc/calc_page.htm

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SECTION 904 - NOTICE TO BIDDERS NO. 2382

CODE: (IS)

| DATE: 02/12/2009

| SUBJECT: Status of Right-of-Way

Although it is desirable to have acquired all rights-of-way and completed all utility adjustments and work to be performed by others prior to receiving bids, sometimes it is not considered to be in the public interest to wait until each and every such clearance has been obtained. The bidder is hereby advised of possible unacquired rights-of-way, relocatees and utilities which have not been completed.

| The status of right-of-way acquisition, utility adjustments, encroachments, potentially contaminated sites and asbestos containation are set forth in the following attachments.

In the event right of entry is not available to ALL parcels of right-of-way and/or all work that is to be accomplished by others on the date set forth in the contract for the Notice to Proceed is not complete, the Department will issue a restricted Notice to Proceed.

STATUS OF RIGHT-OF-WAY

NH-0010-01(045)

104273-301000

Jackson County

September 11, 2012

All rights of way and legal rights of entry have been acquired **except:**

NONE.

ASBESTOS CONTAMINATION STATUS OF BUILDINGS
TO BE REMOVED BY THE CONTRACTOR

NH-0010-01(045)
104273-301000
Jackson County
September 11, 2012

Reference is made to notices to bidders entitled "Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP)" and "Removal of Obstructions".

The following pertinent information is furnished concerning asbestos containing materials (ACMs), if any, found in buildings to be removed by the Contractor.

There is no Right of Way required for this project. There are no buildings to be removed by the contractor.

STATUS OF POTENTIALLY CONTAMINATED SITES

NH-0010-01(045)
104273-301000
Jackson County
September 11, 2012

THERE IS NO RIGHT OF WAY REQUIRED FOR THIS PROJECT. NO INITIAL SITE ASSESSMENT WILL BE PERFORMED. IF CONTAMINATION ON EXISTING RIGHT OF WAY IS DISCOVERED, IT WILL BE HANDLED BY THE DEPARTMENT.

ENCROACHMENT CERTIFICATION

NH-0010-01(045) / 104273301

Jackson County(ies)

September 11, 2012

This is to certify that the above captioned project has been inspected and no encroachments were found.

UTILITY STATUS REPORT

NH-0010-01(045) / 104273301

Jackson County(ies)

September 11, 2012

This is to certify that the above captioned project has been inspected and there are no known utilities in conflict with the project.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 2596

CODE: (IS)

DATE: 05/13/2009

SUBJECT: DBE Forms, Participation and Payment

Bidders are hereby advised that the participation of a DBE Firm can not be counted towards the Prime Contractor's DBE goal until the amount being counted towards the goal has been paid to the DBE.

Form OCR-482 has been developed to comply with this requirement. Bidders are hereby advised that at the end of the job, the Prime Contractor will submit this form to the Project Engineer before the final estimate is paid and the project is closed out. This form certifies payments to all DBE Subcontractors over the life of the contract.

Form OCR-484 has also been developed to comply with this requirement. Bidders are hereby advised that each month, the Prime Contractors will submit this form to the Project Engineer no later than the last day of each month. This form certifies payments to all Subcontractors and shows all firms even if the Prime Contractor has paid no monies to the firm during that estimate period (negative report). The Project Engineer will attach this form to the monthly estimate before forwarding the estimate to the Contract Administration Division for processing.

Bidders are also advised that Form OCR-485 will be completed by ALL BIDDERS submitting a bid proposal and must be signed and included in the bid proposal package. Failure to include Form OCR-485 in the bid proposal package will cause the Contractor's bid to be considered irregular.

DBE Forms, including Forms OCR-482, OCR-484 and OCR-485, can be obtained from the Office of Civil Rights Division, MDOT Administration Building, 401 North West Street, Jackson, MS, or at www.gomdot.com under *Business, Disadvantaged Enterprise, Applications and Forms for the DBE Program, MDOT Forms*.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 2818

CODE: (SP)

DATE: 10/01/2009

SUBJECT: Non-Quality Control / Quality Assurance Concrete

Bidders are advised that the following pay items will not be accepted based on the Quality Control / Quality Assurance (QC/QA) requirements of Section 804 of the specifications. The acceptance of these pay items will be based on sampling and testing at the project site by MDOT forces. The Contractor is required to submit mix designs to accomplish this work in accordance with Section 804 and perform normal Quality Control functions at the concrete plant. Acceptance will be in accordance with the requirements of 907-601, Structural Concrete, and TMD-20-04-00-000. At the discretion of the Engineer, the Contractor may request that the concrete be accepted based on QC/QA requirements.

<u>Pay Item</u>	<u>Description</u>
221	Paved Ditches
601	Minor Structures - manholes, inlets, catch basins, junction boxes, pipe headwalls, and pipe collars.
606	Guardrail Anchors
607	Fence Post Footings
608	Sidewalks
609	Curb and Gutter
614	Driveways
616	Median and Island Pavement
630	Sign Footings, except Overhead Sign Supports

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 2937

CODE: (SP)

DATE: 01/11/2010

SUBJECT: Reduced Speed Limit Signs

Bidders are advised that all black and white speed limits signs that are used to reduce the speed limit through construction zones shall be covered or removed during times when the Contractor is not performing work. If the Contractor has a routine daytime operation and is not working at night, the signs shall be covered or removed during the nighttime when there is no work activity.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 3039

CODE: (SP)

DATE: 03/23/2010

SUBJECT: Alternate Asphalt Mixture Bid Items

Bidders are advised that the asphalt mixture used on this project will be bid as an alternate pay item: Hot Mix Asphalt (HMA) or Warm Mix Asphalt (WMA). Bidders must select one of the alternates at the time of bid. **The Contractor must use the selected asphalt mixture, HMA or WMA, throughout the entire project.**

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 3067

CODE: (SP)

DATE: 04/14/2010

SUBJECT: Storm Water Discharge Associated with Construction Activity
(≥ 1 and < 5 Acres)

Construction Storm Water General NPDES Permit MSR 15 to discharge storm water associated with construction activity is required. This project is granted permission to discharge treated storm water into State waters. Copies of said permit and Storm Water Pollution Prevention Plan (SWPPP) are on file with the Department.

Prior to the execution of the contract, the successful bidder shall execute and deliver to the Executive Director an original signed copy of the completed Prime Contractor Certification (Form No. 1).

Failure of the bidder to execute and file the completed Prime Contractor Certification (Form No. 1) shall be just cause for the cancellation of the award.

The executed Prime Contractor Certification (Form No. 1) shall be prima facie evidence that the bidder has examined the permit, is satisfied as to the terms and conditions contained therein, and that the bidder has the primary responsibility for meeting all permit terms and conditions including, but not limited to, the inspection and reporting requirements of Part IV. For this project, the Contractor shall furnish, set up and read, as needed, an on-site rain gauge.

The Contractor must furnish the Project Engineer a completed copy of the Small Construction Notice of Intent (SCNOI) along with the Contractor's Erosion Control Plan.

The Contractor shall make inspections in accordance with [condition No. S-4, Page 13](#), and shall furnish the Project Engineer with the results of each weekly inspection as soon as possible following the date of inspection. The weekly inspections must be documented monthly on the Inspection and Certification Form, [a copy of which is provided](#). The Contractor's representative and the Project Engineer shall jointly review and discuss the results of the inspections so that corrective action can be taken. The Project Engineer shall retain copies of the inspection reports.

The Engineer will have the authority to suspend all work and/or withhold payments for failure of the Contractor to carry out provisions of MDEQ's Storm Water Construction General Permit, the erosion control plan, updates to the erosion control plan, and /or proper maintenance of the BMPs.

Securing a permit (s) for storm water discharge associated with the Contractor's activity on any other regulated area the Contractor occupies, shall be the responsibility of the Contractor.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 3242

CODE: (SP)

DATE: 09/21/2010

SUBJECT: Warm Mix Asphalt

Bidders are advised that MDOT approved products and processes for the production of Warm Mix Asphalt is available at the following MDOT website.

<http://www.gomdot.com/Divisions/Highways/Resources/MPL/Home.aspx>

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 3414

CODE: (SP)

DATE: 02/16/2011

SUBJECT: DUNS Requirement for Federal Funded Projects

Bidders are advised that the Prime Contractor must maintain current registrations in the Central Contractor Registration (<http://www.ccr.gov>) at all times during [this project](#). A Dun and Bradstreet Data Universal Numbering System (DUNS) Number (<http://www.dnb.com>) is one of the requirements for registration in the Central Contractor Registration.

Bidders are also advised that the following information needs to be completed and included in the bid documents:

DUNS: _____

Company Name: _____

Company e-mail address: _____

By: _____

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 3612

CODE: (SP)

DATE: 08/10/2011

SUBJECT: Additional Erosion Control Requirements

Bidders are hereby advised of the following requirements that relate to erosion control activities on the project.

THE MAXIMUM TOTAL ACREAGE THAT CAN BE DISTURBED, AT ONE TIME, ON THE PROJECT IS NINETEEN (19) ACRES. THE CONTRACTOR SHALL BE REQUIRED TO STABILIZE DISTURBED AREAS PRIOR TO OPENING UP ADDITIONAL SECTIONS OF THE PROJECT. STABILIZED SHALL BE WHEN THE DISTURBED AREA MEETS ONE OF THE FOLLOWING CRITERIA:

- **THE AREA HAS BEEN GRASSED, EITHER TEMPORARY OR PERMANENT, AND MULCHED ACCORDING TO THE SPECIFICATIONS, OR**
- **A CRUSHED STONE COURSE OR A LIFT OF ASPHALT PAVEMENT HAS BEEN PLACED, OR**
- **THE AREA HAS BEEN CHEMICALLY TREATED USING PORTLAND CEMENT OR LIME-FLY ASH, AND SEALED.**

DISTURBED AREAS INCLUDE THE ROADBED, SLOPES AND REMAINING AREA OUT TO THE ROW LINE.

Clearing and Grubbing: Prior to beginning any clearing and grubbing operations on the project, controls shall be in place to address areas such as drainage structures, wetlands, streams, steep slopes and any other sensitive areas as directed by the Engineer. Clearing and grubbing should be limited to the minimum area necessary to construct the project. Grubbing operations should be minimized in areas outside the construction limits and stumps should be cut off flush with the existing ground elevations. A buffer area of at least fifteen (15) feet shall be in place adjacent to the right-of-way line and at least five (5) feet adjacent to stream banks. The buffer area can either be the existing vegetation that is left undisturbed or re-established by planting new vegetation if clearing and grubbing was required.

Unclassified Excavation: Cut sections shall be graded in accordance with the typical sections and plan grades. Permanent erosion control BMP's should be placed as soon as possible after the cut material has been moved. Fill sections that are completed shall have permanent erosion control BMP's placed. Fill sections that are not completed will be either permanently or temporarily grassed until additional material is made available to complete these sections. All unclassified excavation on the project will still be required to be moved prior to incorporating any borrow excavation on the project. The contractor may have to stockpile unclassified excavation in order to comply with the nineteen (19) acre requirement. No additional compensation will be made for stockpiling operations.

Disturbed areas that remain inactive for a period of more than fourteen (14) days shall be temporary grassed and mulched. Temporary grassing and mulching shall only be paid one time for a given area.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 3655

CODE: (SP)

DATE: 10/04/2011

SUBJECT: Type III Barricade Rails

Bidders are advised that the use of 2-inch nominal thickness timber for rails on Type III barricades has not been approved by NCHRP as a crashworthy device. Therefore, the use of 2-inch nominal thickness timbers will not be allowed for rails on Type III Barricades. Timber rails for Type III Barricades shall be as follows.

- For barricades up to four feet (4') wide, the maximum thickness of timber rails shall be one inch (1") and the material shall be pine timber or ¾-inch ACX plywood.
- For barricades more than four feet (4') wide, timber rails shall be constructed of ¾-inch ACX plywood.

A list of crashworthy Type III Barricades can be found at the below FHWA website.

http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/wzd/

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 3893

CODE: (SP)

DATE: 04/10/2012

SUBJECT: Petroleum Products Base Prices

Bidders are advised that monthly petroleum products base prices will be available at the web site listed below. Current monthly prices will be posted to this web site on or before the 15th of each month. Bidders are advised to use the petroleum base prices on this web site when preparing their bids. The current monthly petroleum products base prices will be acknowledged by the Bidder and become part of the contract during the execution process.

Monthly Petroleum Products Base Prices can be viewed at:

<http://sp.gomdot.com/Contract%20Administration/BidSystems/Pages/letting%20calendar.aspx>

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 3980

CODE: (SP)

DATE: 07/25/2012

SUBJECT: Questions Regarding Bidding

Bidders are advised that all questions that arise regarding the contract documents (proposal) or plans on this project shall be directed to the www.gomdot.com current letting webpage. Click on the call number for this project to open an email form to submit your question. Questions must be submitted by 8:00 a.m. on Monday prior to the letting on Tuesday. Answers to questions will be posted by 6:00 p.m. on Monday prior to the letting on Tuesday. Answers can be viewed by clicking on Q&A link under the Proposal Addenda column.

It shall be the Bidders responsibility to familiarize themselves with the questions and answers that have been submitted on this project.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO NOTICE TO BIDDERS NO. 4103

DATE: 09/12/2012

The goal is 5 percent for the Disadvantaged Business Enterprise. The low bidder is required to submit Form OCR-481 for all DBEs. Bidders are advised to check the bid tabulation link for this project on the MDOT website at:

<http://sp.gomdot.com/Contract%20Administration/BidSystems/Pages/letting%20calendar.aspx>

Bid tabulations are usually posted by 3:00 pm on Letting Day.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SECTION 904 - NOTICE TO BIDDERS NO. 4103

CODE: (IS)

| DATE: 9/12/2012

SUBJECT: DISADVANTAGED BUSINESS ENTERPRISES IN FEDERAL-AID HIGHWAY CONSTRUCTION

| This contract is subject to the "[Moving Ahead for Progress in the 21st Century Act \(MAP-21\)](#)" and applicable requirements of "Part 26, Title 49, Code of Federal Regulations". Portions of the Act are set forth in this Notice as applicable to compliance by the Contractor and all of the Act, and the MDOT DBE Program, is incorporated by reference herein.

The Department has developed a Disadvantaged Business Enterprise Program that is applicable to this contract and is made a part thereof by reference.

Copies of the program may be obtained from:

Office of Civil Rights
Mississippi Department of Transportation
P. O. Box 1850
Jackson, Mississippi 39215-1850

POLICY

It is the policy of the Mississippi Department of Transportation to provide a level playing field, to foster equal opportunity in all federally assisted contracts, to improve the flexibility of the DBE Program, to reduce the burdens on small businesses, and to achieve that amount of participation that would be obtained in a non-discriminatory market place. In doing so, it is the policy of MDOT that there will be no discrimination in the award and performance of federally assisted contracts on the basis of race, color, sex, age, religion, national origin, or any handicap.

ASSURANCES THAT CONTRACTORS MUST TAKE

MDOT will require that each contract which MDOT signs with a sub-recipient or a Contractor, and each subcontract the Prime Contractor signs with a Subcontractor, includes the following assurances:

“The Contractor, subrecipient or Subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR 26 in the award and administration of federally assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as MDOT deems appropriate.”

DEFINITIONS

For purposes of this provision the following definitions will apply:

"Disadvantaged Business" means a small business concern: (a) which is at least 51 percent owned by one or more socially and economically disadvantaged individual(s) or in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more socially and economically disadvantaged individual(s); and (b) whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individual(s) who own it. It is important to note that the business owners themselves must control the operations of the business. Absentee ownership or title ownership by an individual who does not take an active role in controlling the business is not consistent with eligibility as a DBE under CFR 49 Part 26.71.

CONTRACTOR'S OBLIGATION

The Contractor and all Subcontractors shall take all necessary and reasonable steps to ensure that DBE firms can compete for and participate in the performance of a portion of the work in this contract and shall not discriminate on the basis of race, color, national origin, religion or sex. Failure on the part of the Contractor to carry out the DBE requirements of this contract constitutes a breach of contract and after proper notification the Department may terminate the contract or take other appropriate action as determined by the Department.

When a contract requires a zero percent (0%) DBE goal, the Contractor still has the responsibility to take all necessary and reasonable steps to ensure that DBE firms can compete for and participate in the performance of the work in the contract. In this case, all work performed by a certified DBE firm is considered to be a "race neutral" measure and the Department will receive DBE credit towards the overall State goals when the DBE firm is paid for their work. If the Prime Contractor is a certified DBE firm, the Department can receive DBE credit only for the work performed by the Prime Contractor's work force or any work subcontracted to another DBE firm. Work performance by a non-DBE Subcontractor is not eligible for DBE credit.

CONTRACT GOAL

The goal for participation by DBEs is established for this contract in the attached Supplement. The Contractor shall exercise all necessary and reasonable steps to ensure that participation is equal to or exceeds the contract goal.

The percentage of the contract that is proposed for DBEs shall be so stated on the last bid sheet of the proposal.

The apparent lowest responsive bidder shall submit to the [Office of Civil Rights](#) Form OCR-481, signed by the Prime Contractor and the DBE Subcontractors, no later than the 10th day after opening of the bids.

Form OCR-481 is available on the MDOT website at GoMDOT.com, then Divisions, Civil Rights, Forms, DBE, MDOT Projects, or by calling 601-359-7466.

FORMS ARE AVAILABLE FROM THE OFFICE OF CIVIL RIGHTS

The OCR-481 Form must contain the following information:

The name and address of each certified DBE Contractor / Supplier;

The Reference Number, percent of work and the dollar amount of each item. If a portion of an item is subcontracted, a breakdown of that item including quantities and unit price must be attached, detailing what part of the item the DBE firm is to perform and who will perform the remainder of the item.

If the DBE Commitment shown on the last bid sheet of the proposal, does not equal or exceed the contract goal, the bidder must submit, with the proposal, information to satisfy the Department that adequate good faith efforts have been made to meet the contract goal.

Failure of the lowest bidder to furnish acceptable proof of good faith efforts, submitted with the bid proposal, shall be just cause for rejection of the proposal. Award may then be made to the next lowest responsive bidder or the work may be readvertised.

The following factors are illustrative of matters the Department will consider in judging whether or not the bidder has made adequate good faith effort to satisfy the contract goal.

- (1) Whether the bidder attended the pre-bid meeting that was scheduled by the Department to inform DBEs of subcontracting opportunities;
- (2) Whether the bidder advertised in general circulation, trade association, and minority-focus media concerning the subcontracting opportunities;
- (3) Whether the bidder provided written notice to a reasonable number of specific DBEs that their interest in the contract is being solicited;
- (4) Whether the bidder followed up initial solicitations of interest by contacting DBEs to determine with certainty whether they were interested;
- (5) Whether the bidder selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the contract goal;
- (6) Whether the bidder provided interested DBEs with adequate information about the plans, specifications and requirements of the contract;
- (7) Whether the bidder negotiated in good faith with interested DBEs and did not reject them as unqualified without sound reasons based on a thorough investigation of their capabilities; and

- (8) Whether the bidder made efforts to assist interested DBEs in obtaining any required bonding or insurance.
- (9) Whether the bidder has written notification to certified DBE Contractors soliciting subcontracting for items of work in the contract.
- (10) Whether the bidder has a statement of why an agreement was not reached.

The bidder's execution of the signature portion of the proposal shall constitute execution of the following assurance:

The bidder hereby gives assurance pursuant to the applicable requirements of "Moving Ahead for Progress in the 21st Century Act (MAP-21)" and applicable requirements of "Part 26, Title 49, Code of Federal Regulations" that the bidder has made a good faith effort to meet the contract goal for DBE participation for which this proposal is submitted.

DIRECTORY

A list of "Certified DBE Contractors" which have been certified as such by the Mississippi Department of Transportation and other Unified Certification Partners (UPC) can be found on the Mississippi Department of Transportation website at www.gomdot.com. The DBE firm must be certified at the time the project is let and approved by MDOT to count towards meeting the DBE goal.

REPLACEMENT

If a DBE Subcontractor cannot perform satisfactorily, and this causes the OCR-481 commitment to fall below the contract goal, the Contractor shall take all necessary reasonable steps to replace the DBE with another certified DBE Subcontractor or submit information to satisfy the Mississippi Department of Transportation that adequate good faith efforts have been made to replace the DBE. The replacement DBE must be a DBE who was on the Department's list of "Certified DBE Contractors" when the job was let, and who is still active. All DBE replacements must be approved by the Department.

Under no circumstances shall the Prime or any Subcontractor perform the DBE's work (as shown on the OCR-481) without prior written approval from the Department. See "Sanctions" at the end of this document for penalties for performing DBE's work.

When a Contractor proposes to substitute/replace/terminate a DBE that was originally named on the OCR-481, the Contractor must obtain a release, in writing, from the named DBE explaining why the DBE Subcontractor cannot perform the work. A copy of the original DBE's release must be attached to the Contractor's written request to substitute/replace/terminate along with appropriate Subcontract Forms for the substitute/replacement/terminated Subcontractor, all of which must be submitted to the DBE Coordinator and approved, in advance, by MDOT.

GOOD FAITH EFFORTS

To demonstrate good faith efforts to replace any DBE that is unable to perform successfully, the Contractor must document steps taken to subcontract with another certified DBE Contractor. Such documentation shall include no less than the following:

- (1) Proof of written notification to certified DBE Contractors by certified mail that their interest is solicited in subcontracting the work defaulted by the previous DBE or in subcontracting other items of work in the contract.
- (2) If the Prime Contractor is a certified DBE firm, only the value of the work actually performed by the DBE Prime can be counted towards the project goal, along with any work subcontracted to a certified DBE firm.
- (3) If the Contractor is not a DBE, the work subcontracted to a certified DBE Contractor will be counted toward the goal.
- (4) The Contractor may count toward the goal a portion of the total dollar value of a contract with a joint venture eligible under the standards of this provision equal to the percentage of the DBE partner in the joint venture.
- (5) Expenditures to DBEs that perform a commercially useful function may be counted toward the goal. A business is considered to perform a commercially useful function when it is responsible for the execution of a distinct element of the work and carries out its responsibilities by actually performing, managing, and supervising the work involved.
- (6) The Contractor may count 100% of the expenditures for materials and supplies obtained from certified DBE suppliers and manufacturers that produce goods from raw materials or substantially alters them for resale provided the suppliers and manufacturers assume the actual and contractual responsibility for the provision of the materials and supplies. The Contractor may count sixty percent (60%) of the expenditures to suppliers that are not manufacturers, provided the supplier performs a commercially useful function in the supply process. Within 30 days after receipt of the materials, the Contractor shall furnish to the DBE Coordinator invoices from the certified supplier to verify the DBE goal.
- (7) Any work that a certified DBE firm subcontracts or sub-subcontracts to a non-DBE firm will not count towards the DBE goal.
- (8) Only the dollars actually paid to the DBE firm may be counted towards the DBE goal.

Failure of the Contractor to demonstrate good faith efforts to replace a DBE Subcontractor that cannot perform as intended with another DBE Subcontractor, when required, shall be a breach of contract and may be just cause to be disqualified from further bidding for a period of up to 12 months after notification by certified mail.

PRE-BID MEETING

A pre-bid meeting will be held in Amphitheater 1 & 2 of the Hilton Jackson located at I-55 and County Line Road, Jackson, Mississippi at 2:00 P.M. on the day preceding the date of the bid opening.

This meeting is to inform DBE firms of subcontracting and material supply opportunities. Attendance at this meeting is considered of prime importance in demonstrating good faith effort to meet the contract goal.

PARTICIPATION / DBE CREDIT

Participation shall be counted toward meeting the goal in this contract as follows:

- (1) If the Prime Contractor is a certified DBE firm, only the value of the work actually performed by the DBE Prime can be counted towards the project goal, along with any work subcontracted to a certified DBE firm.
- (2) If the Contractor is not a DBE, the work subcontracted to a certified DBE Contractor will be counted toward the goal.
- (3) The Contractor may count toward the goal a portion of the total dollar value of a contract with a joint venture eligible under the standards of this provision equal to the percentage of the DBE partner in the joint venture.
- (4) Expenditures to DBEs that perform a commercially useful function may be counted toward the goal. A business is considered to perform a commercially useful function when it is responsible for the execution of a distinct element of the work and carries out its responsibilities by actually performing, managing, and supervising the work involved.
- (5) The Contractor may count 100% of the expenditures for materials and supplies obtained from certified DBE suppliers and manufacturers that produce goods from raw materials or substantially alters them for resale provided the suppliers and manufacturers assume the actual and contractual responsibility for the provision of the materials and supplies. The Contractor may count sixty percent (60%) of the expenditures to suppliers that are not manufacturers, provided the supplier performs a commercially useful function in the supply process. Within 30 days after receipt of the materials, the Contractor shall furnish to the DBE Coordinator invoices from the certified supplier to verify the DBE goal.
- (6) Any work that a certified DBE firm subcontracts or sub-subcontracts to a non-DBE firm will not count towards the DBE goal.
- (7) Only the dollars actually paid to the DBE firm may be counted towards the DBE goal.

AWARD

Award of this contract to the low bidder will be contingent upon the following conditions:

- (1) Concurrence from Federal Highway Administration, when applicable.
- (2) Bidder must submit to the [Office of Civil Rights](#) for approval, Form OCR-481 (DBE Commitment) no later than the 10th day after opening of the bids, or submit information with the bid proposal to satisfy the Department and that adequate good faith efforts have been made to meet the contract goal. [For answers to questions regarding Form OCR-481, contact the MDOT Office of Civil Rights at \(601\) 359-7466.](#)
- (3) Bidder must submit a list of all firms that submitted quotes for material supplies or items to be subcontracted. This information must be submitted on form OCR-485 in the back of the contract proposal. [Form OCR-485 must be signed and submitted with the bid proposal.](#)

Prior to the start of any work, the bidder must notify the Project Engineer, in writing, of the name of the designated "DBE Liaison Officer" for this project. This notification must be posted on the bulletin board at the project site.

DEFAULT

The contract goal established by MDOT in this proposal must be met to fulfill the terms of the contract. The Contractor may list DBE Subcontractors and items that exceed MDOT's contract goal, but should unforeseen problems arise that would prevent a DBE from completing its total commitment percentage, the Contractor will meet the terms of the contract as long as it meets or exceeds MDOT's Contract Goal. For additional information, refer to "Replacement" section of this Notice.

DBE REPORTS

- (1) OCR-481: Refer to "CONTRACT GOAL" section of this Notice to Bidders for information regarding this form.
- (2) OCR-482: At the conclusion of the project the Contractor will submit to the Project Engineer for verification of quantities and further handling Form OCR-482 whereby the Contractor certifies to the amounts of payments made to each Contractor / Supplier. The Project Engineer shall submit the completed Form OCR-482 to the DBE Coordinator (Office of Civil Rights). Final acceptance of the project is dependent upon Contract Administration Division's receipt of completed Form OCR-482 which they will receive from the Office of Civil Rights.
- (3) OCR-483: The Project Engineer/Inspector will complete Form OCR-483, the Commercially Useful Function (CUF) Performance Report, in accordance with MDOT S.O.P. No. OCR-03-09-01-483. Evaluations reported on this form are used to determine whether or not the DBE firm is performing a CUF. The Prime Contractor should take corrective action when the report contains any negative evaluations. DBE credit may be

disallowed and/or other sanctions imposed if it is determined the DBE firm is not performing a CUF. This form should also be completed and returned to the DBE Coordinator (Office of Civil Rights).

- (4) OCR-484: Each month, the Contractor will submit to the Project Engineer OCR-484 certifying payments to all Subcontractors.
- (5) OCR-485: The bidder must submit **with the bid proposal** a list of all firms that submitted quotes for material supplies or items to be subcontracted.
- (6) OCR-487: Only used by Prime Contractors that are certified DBE firms. This form is used in determining the exact percentage of DBE credit for the specified project. It should be returned to MDOT with the OCR-481 form, or can also be returned with the Permission to Subcontract Forms (CAD-720 or CAD-725).

SANCTIONS

The Department has the option to enforce any of the following penalties for failure of the Prime Contractor to fulfill the DBE goal as stated on the OCR-481 form or any violations of the DBE program guidelines:

- (1) Disallow credit towards the DBE goal
- (2) Withhold progress estimate payments
- (3) Deduct from the final estimate an amount equal to the unmet portion of the DBE goal
- (4) Recover an amount equal to the unmet contract goal
- (5) Debar the Contractor involved from bidding on Mississippi Department of Transportation projects.
- (6) Deduct from the Contractor's final estimate all or any combination of the following.

<u>Offense</u>	<u>Percentage of the monetary amount disallowed from (1) above</u>	<u>Lump Sum</u>
# 1	10%	\$ 5,000 or both
# 2	20%	\$ 10,000 or both
# 3	40%	\$ 20,000 & debarment

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 4189

CODE: (SP)

DATE: 11/08/2012

SUBJECT: Rumble Stripe

Bidders are hereby advised that when edge lines are placed over rumble strips, the pavement marking stripe must be applied using the atomization/spray method instead of extrusion / ribbon method. To ensure the proper alignment of the rumble stripes, the Contractor will be required to place a layout line to be followed during installation of the edge lines over the rumble strips.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 4214

CODE: (IS)

DATE: 11/29/2012

SUBJECT: Safety Apparel

Bidders are advised that the Code of Federal Regulations CFR 23 Part 634 final rule was adopted November 24, 2006 with an effective date of November 24, 2008. This rule requires that "All workers within the right-of-way of a Federal-Aid Highway who are exposed either to traffic (vehicles using the highway for the purposes of travel) or to construction equipment within the work area shall wear high-visibility safety apparel". High-visibility safety apparel is defined in the CFR as "personnel protective safety clothing that is intended to provide conspicuity during both daytime and nighttime usage, and that meets the Performance Class 2 or 3 requirements of the ANSI/ISEA 107-2004 publication entitled American National Standard for High-Visibility Safety Apparel and Headwear". All workers on Mississippi State Highway right-of-way shall comply with this Federal Regulation. Workers are defined by the CFR as "people on foot whose duties place them within the right-of way of a Federal-Aid Highway, such as highway construction and maintenance forces, survey crews, utility crews, responders to incidents within the highway right-of-way, and law enforcement personnel when directing traffic, investigating crashes, and handling lane closures, obstructed roadways, and disasters within the right-of-way of a Federal-Aid Highway".

More information regarding high visibility safety apparel can be found at the following sites.

<http://www.gpo.gov/fdsys/pkg/CFR-2008-title23-vol1/pdf/CFR-2008-title23-vol1-sec634-1.pdf>

<http://ops.fhwa.dot.gov/wz/resources/policy.htm#hv>

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 4294

CODE: (SP)

DATE: 01/18/2013

SUBJECT: Contract Time

PROJECT: NH-0010-01(045) / 104273301 – Jackson County

The calendar date for completion of work to be performed by the Contractor for this project shall be **January 10, 2014** which date or extended date as provided in Subsection 907-108.06 shall be the end of contract time. It is anticipated that the Notice of Award will be issued no later than be **March 12, 2013** and the effective date of the Notice to Proceed / Beginning of Contract Time will be **May 13, 2013**.

Should the Contractor request a Notice to Proceed earlier than be **May 13, 2013** and it is agreeable with the Department for an early Notice to Proceed, the requested date will become the new Notice to Proceed / Beginning of Contract Time date. The Contractor's erosion control plan will have to be approved prior to issuing an early Notice to Proceed.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 4295

DATE: 01/18/2013

SUBJECT: Specialty Items

PROJECT: NH-0010-01(045) / 104273301 - Jackson County

Pursuant to the provisions of Section 108, the following work items are hereby designated as "Specialty Items" for this contract. Bidders are reminded that these items must be subcontracted in order to be considered as specialty items.

CATEGORY: EROSION CONTROL

Line No	Pay Item	Description
0810	907-225-A001	Grassing
0820	907-225-B001	Agricultural Limestone
0830	907-225-C001	Mulch, Vegetative Mulch
0840	907-237-A003	Wattles, 20"

CATEGORY: PAVEMENT STRIPING AND MARKING

Line No	Pay Item	Description
0340	627-K001	Red-Clear Reflective High Performance Raised Markers
0350	627-L001	Two-Way Yellow Reflective High Performance Raised Markers
0880	907-626-A004	6" Thermoplastic Traffic Stripe, Skip White
0890	907-626-G004	Thermoplastic Detail Stripe, White
0900	907-626-G005	Thermoplastic Detail Stripe, Yellow
0910	907-626-H004	Thermoplastic Legend, White
0920	907-626-H005	Thermoplastic Legend, White

CATEGORY: SURVEY AND STAKING

Line No	Pay Item	Description
1110	907-699-A002	Roadway Construction Stakes

CATEGORY: TRAFFIC CONTROL - PERMANENT

Line No	Pay Item	Description
0360	629-A005	Vehicular Impact Attenuator, 55 MPH

CATEGORY: TRAFFIC CONTROL - TEMPORARY

Line No	Pay Item	Description
0280	619-D1001	Standard Roadside Construction Signs, Less than 10 Square Feet
0290	619-D2001	Standard Roadside Construction Signs, 10 Square Feet or More
0300	619-G4001	Barricades, Type III, Single Faced
0310	619-G4005	Barricades, Type III, Double Faced
0320	619-G5001	Free Standing Plastic Drums

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 4296

CODE: (SP)

DATE: 01/18/2013

SUBJECT: Performance Period

PROJECT: NH-0010-01(045) / 104273301 – Jackson County

Bidders are hereby advised that the fourteen (14) day performance period is part of the contract time. During each fourteen (14) day performance period, if any failure should occur in any of the mechanical or electrical equipment in the system other than minor readily replaceable components, such as light bulbs, etc., the cause of the failure shall be determined, the necessary replacements made and the system operated satisfactory for an additional period of not less than fourteen (14) consecutive days.

Bidders are also hereby advised that the 30 day performance period for the traffic signals has been allowed for in the contract time.

No additional time will be allowed for any additional performance period(s) found to necessary because of failure(s) during the initial period, or subsequent performance period(s).

>

General Decision Number: MS130173 01/04/2013 MS173

Superseded General Decision Number: MS20120173

State: Mississippi

Construction Type: Highway

County: Jackson County in Mississippi.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Modification Number	Publication Date
0	01/04/2013

* ELEC0480-007 07/01/2012

	Rates	Fringes
ELECTRICIAN.....	\$ 23.10	3%+7.43

SUMS2008-134 09/04/2008

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 12.08	0.00
CEMENT MASON/CONCRETE FINISHER...	\$ 11.54	1.63
LABORER: Asphalt Raker.....	\$ 10.05	0.00
LABORER: Common or General.....	\$ 8.75	0.00
LABORER: Pipelayer.....	\$ 10.17	0.00
OPERATOR: Backhoe.....	\$ 12.88	0.00
OPERATOR: Broom.....	\$ 8.00	0.00
OPERATOR: Bulldozer.....	\$ 11.63	0.00
OPERATOR: Grader/Blade.....	\$ 11.00	0.00
OPERATOR: Mechanic.....	\$ 13.00	0.00
OPERATOR: Piledriver.....	\$ 12.50	1.23
OPERATOR: Roller.....	\$ 9.31	0.00
OPERATOR: Scraper.....	\$ 10.00	0.00
TRUCK DRIVER.....	\$ 10.00	0.00

 WELDERS - Receive rate prescribed for craft performing
 operation to which welding is incidental.
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Unlisted classifications needed for work not included within
 the scope of the classifications listed may be added after
 award only as provided in the labor standards contract clauses
 (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification
 and wage rates that have been found to be prevailing for the
 cited type(s) of construction in the area covered by the wage
 determination. The classifications are listed in alphabetical
 order of "identifiers" that indicate whether the particular
 rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with
 characters other than "SU" denotes that the union
 classification and rate have found to be prevailing for that
 classification. Example: PLUM0198-005 07/01/2011. The first
 four letters , PLUM, indicate the international union and the
 four-digit number, 0198, that follows indicates the local union
 number or district council number where applicable , i.e.,
 Plumbers Local 0198. The next number, 005 in the example, is
 an internal number used in processing the wage determination.
 The date, 07/01/2011, following these characters is the
 effective date of the most current negotiated rate/collective
 bargaining agreement which would be July 1, 2011 in the above
 example.

Union prevailing wage rates will be updated to reflect any
 changes in the collective bargaining agreements governing the
 rates.

0000/9999: weighted union wage rates will be published annually
 each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived
 from survey data by computing average rates and are not union
 rates; however, the data used in computing these rates may
 include both union and non-union data. Example: SULA2004-007
 5/13/2010. SU indicates the rates are not union majority rates,
 LA indicates the State of Louisiana; 2004 is the year of the
 survey; and 007 is an internal number used in producing the
 wage determination. A 1993 or later date, 5/13/2010, indicates

the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.

Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

SUPPLEMENT TO FORM FHWA-1273

DATE: 6/15/94

SUBJECT: Final Certificate and Contract Provisions for Subcontracts

All subcontracts shall be in writing and contain all pertinent provisions and requirements of the prime contract.

Each "Request for Permission to Subcontract" (Mississippi Department of Transportation Form CAD-720) shall include a copy of subcontract for review by the Mississippi Department of Transportation. The federal contract provisions may be omitted from the subcontract copy submitted for review provided the Contractor certifies that the provisions will be physically incorporated into the agreement furnished to the Subcontractor.

In lieu of submitting a copy of the subcontract for review, the Contractor may certify that the subcontract agreement is in writing and that it contains all the requirements and pertinent provisions of the prime contract.

Each Subcontractor will be required to provide a copy of the subcontract agreement for contract compliance reviews, along with physical evidence (copy of FHWA-1273) that requirements and pertinent provisions have been provided for review and adherence.

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar

with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages

paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise

the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-

Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly

rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the

contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contractor). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**NOTICE OF REQUIREMENTS FOR AFFIRMATIVE
ACTION TO ENSURE EQUAL EMPLOYMENT
OPPORTUNITY (EXECUTIVE ORDER 11246)**

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

2. The goal for female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work, is 6.9%.

Until further notice	Goals for minority participation for each trade (percent)
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SHSA Cities:	
Pascagoula - Moss Point -----	16.9
Biloxi - Gulfport -----	19.2
Jackson -----	30.3

SMSA Counties:	
Desoto-----	32.3
Hancock, Harrison, Stone -----	19.2
Hinds, Rankin-----	30.3
Jackson -----	16.9

Non-SMSA Counties:	
George, Greene -----	26.4

Alcorn, Benton, Bolivar, Calhoun, Carroll, Chickasaw, Clay, Coahoma, Grenada, Itawamba, Lafayette, Lee, Leflore, Marshall, Monroe, Montgomery, Panola, Pontotoc, Prentiss, Quitman, Sunflower, Tallahatchie, Tate, Tippah, Tishomingo, Tunica, Union, Washington, Webster, Yalobusha -----	26.5
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Attala, Choctaw, Claiborne, Clarke, Copiah, Covington, Franklin, Holmes, Humphreys, Issaquena, Jasper, Jefferson, Jefferson Davis, Jones Kemper, Lauderdale, Lawrence, Leake, Lincoln, Lowndes, Madison, Neshoba, Newton, Noxubee, Oktibbeha, Scott, Sharkey, Simpson, Smith, Warren, Wayne, Winston, Yazoo-----	32.0
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Forrest, Lamar, Marion, Pearl River, Perry, Pike, Walthall -----	27.7
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Adams, Amite, Wilkinson-----	30.4
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These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in CFR Part 60-4 shall be based on its implementation of the Equal Opportunity clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4.2(d). Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor, employer identification number of the subcontractor, estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is to the county and city (if any), stated in the advertisement.

5. The notification required in Paragraph 3 shall be addressed to the following:

Contract Compliance Officer
Mississippi Department of Transportation
P.O. Box 1850
Jackson, Mississippi 39215-1850

(06/28/2012)

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-101-4

CODE: (IS)

DATE: 11/05/2008

SUBJECT: Definitions

Section 101, Definitions and Terms, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-101.02--Definitions. Replace the following definitions in Subsection 101.02 on pages 3 through 13.

Contract - The written agreement between the Mississippi Transportation Commission and the Contractor setting forth the obligations of the parties thereunder, including but not limited to, the performance of the work, the furnishing of labor and materials, and the basis of payment.

The contract includes the invitation for bids, proposal, contract form and contract bonds, specifications, supplemental specifications, interim specifications, general and detailed plans, special provisions, notices to bidders, notice to proceed, and also any agreements that are required to complete the construction of the work in an acceptable manner, including authorized extensions thereof, all of which constitute one instrument.

Contract Bonds - The approved form of security, executed by the Contractor and the Contractor's Surety(ies), guaranteeing complete execution of the contract and all supplemental agreements pertaining thereto and the payment of all legal debts pertaining to the construction of the project. This term includes Performance and Payment Bond(s).

Surety - A corporate body, qualified under the laws of Mississippi, which is bound with and for the successful bidder by "contract bond(s)" to guarantee acceptable performance of the contract and payment of all legal taxes and debts pertaining to the construction of the project, including payment of State Sales Tax as prescribed by law, and any overpayment made to the Contractor.

Add the following to the list of definitions in Subsection 101.02 on pages 3 through 13.

Performance Bond - The approved form of security, executed by the Contractor and issued by the Contractor's Surety(ies), guaranteeing satisfactory completion of the contract and all supplemental agreements pertaining thereto.

Payment Bond - The approved form of security, executed by the Contractor and issued by the Contractor's Surety(ies), guaranteeing the payment of all legal debts pertaining to the construction of the project including, but not limited to, the labor and materials of subcontractors and suppliers to the prime contractor.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO SPECIAL PROVISION NO. 907-102-8

DATE: 10/25/2012

SUBJECT: Bidding Requirements and Conditions

Delete Subsection 907-102.06 on page 1, and substitute the following.

907-102.06--Preparation of Proposal. Delete the first, fifth, sixth, and seventh paragraphs of Subsection 102.06 on pages 17 & 18, and substitute the following.

The bidder's complete original proposal shall be submitted upon the forms (Certification of Performance, Certification Regarding Non-Collusion, etc.) furnished by the Department and shall include Expedite Bid printed bid sheets along with the bid data on the MDOT-supplied USB Flash Drive. Expedite Bid System (EBS) files shall be downloaded from the Department's website www.goMDOT.com. In case of discrepancy between a unit price and the extension, the unit price will govern and the extension along with the total amount of the proposal will be corrected.

Bid sheets generated by the Department's Electronic Bid System (Transport Expedite Bid) along with a completed proposal package (with all forms completed and signed) will constitute the official bid and shall be signed on the last sheet of the Expedite Bid generated bid sheets and delivered to the Department in accordance with the provisions of Subsection 102.09. Bids submitted using any other form, format or means will result in an irregular bid. The bidder's bid data shall be saved on the MDOT-supplied USB Flash Drive and submitted with the bid. Failure to return the USB Flash Drive with bid data will result in an irregular bid.

Bidders are cautioned that using other versions of the Expedite Bid may result in improperly printed bid sheets. The correct version of Expedite Bid can be obtained at no cost from the MDOT Contract Administration Division or at the MDOT website, www.gomdot.com. The current version of Expedite Bid is also included on the MDOT-supplied USB Flash Drive.

The Expedite Bid generated bid sheets should be stapled together in order beginning with page 1, signed and included in the bid proposal package in the sealed envelope. Only the Expedite Bid generated sheets will be recognized as the official bid. The MDOT-provided USB Flash Drive containing the information printed on the Expedite Bid generated bid sheets should be placed in the padded envelope included with the bid proposal package and enclosed in the sealed envelope. Bid sheets printed from Expedite Bid should be a representation of the data returned on the flash drive. To have a true representation of the bid sheets, the Bidder must copy the EBS and EBS amendment files used to prepare the bid sheets to the flash drive. Otherwise, the unit prices bid will not be recorded to the flash drive. Bidders are cautioned that failure to follow proper flash drive handling procedures could result in the Department being unable to process the flash drive. Any modification or manipulation of the data contained on the flash drive, other than entering unit bid prices and completing all required Expedite Bid sections, will not be allowed and will cause the Contractor's bid to be considered irregular.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SPECIAL PROVISION NO. 907-102-8

CODE: (IS)

| DATE: 01/20/2011

SUBJECT: Bidding Requirements and Conditions

907-102.06--Preparation of Proposal. Delete the fifth, sixth, and seventh paragraphs of Subsection 102.06 on page 18 and substitute the following:

Bid sheets generated by the Department's Electronic Bid System (Transport Expedite Bid) along with a completed proposal package will constitute the official bid and shall be signed on the last sheet of the Expedite Bid generated bid sheets and delivered to the Department in accordance with the provisions of Subsection 102.09.

Bidders are cautioned that using other versions of the Expedite Bid may result in improperly printed bid sheets. The correct version of Expedite Bid can be obtained at no cost from the MDOT Contract Administration Division or at the MDOT website, www.gomdot.com.

If bidders submit Expedite Bid generated bid sheets, then the bid sheets included in the proposal should not be completed. The Expedite Bid generated bid sheets should be stapled together, signed and included in the bid proposal package in the sealed envelope. If both the forms in the proposal and the Expedite Bid generated bid sheets are completed and submitted, only the Expedite Bid generated sheets will be recognized and used for the official bid. The USB Flash Drive containing the information printed on the Expedite Bid generated bid sheets should be placed in the padded envelope included with the bid proposal package and enclosed in the sealed envelope. Bid sheets printed from Expedite Bid should be a representation of the data returned on the flash drive. To have a true representation of the bid sheets, the Bidder must copy the EBS and EBS amendment files used to prepare the bid sheets to the flash drive. Otherwise, the unit prices bid will not be recorded to the flash drive. Bidders are cautioned that failure to follow proper flash drive handling procedures could result in the Department being unable to process the flash drive. Any modification or manipulation of the data contained on the flash drive, other than entering unit bid prices and completing all required Expedite Bid sections, will not be allowed and will cause the Contractor's bid to be considered irregular.

907-102.08--Proposal Guaranty. Delete the first and second paragraphs in Subsection 102.08 on page 20 and substitute the following:

No proposal will be considered unless accompanied by certified check, cashier's check or bid bond, made payable to the State of Mississippi, in an amount of not less than five percent (5%) of the total amount of the proposal offered. The guaranty shall be evidence of good faith that, if awarded the contract, the bidder will execute the contract and give performance and payment contract bond(s) as stipulated in Subsection 907-103.05.1, 907-103.05.2, and as required by law.

If a bid bond is offered as guaranty, the bond must be on a form approved by the Executive Director, made by a Surety acceptable to the Executive Director and signed or countersigned by a Mississippi Agent or Qualified Nonresident Agent and the Bidder. Such bid bond shall also conform to the requirements and conditions stipulated in Subsection 907-103.05.2 as applicable.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-103-8

CODE: (SP)

DATE: 12/15/2009

SUBJECT: Award and Execution of Contract

Section 103, Award and Execution of Contract, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-103.04--Return of Proposal Guaranty. Delete the second paragraph of Subsection 103.04 on page 23 and substitute the following:

Certified checks or cashier's checks submitted as proposal guaranties, except those of the two lowest bidders, will be returned within 10 days of contract award. The retained proposal guaranty of the unsuccessful of the two lowest bidders will be returned within ten days following the execution of a contract with the successful low bidder. The retained proposal guaranty of the successful bidder will be returned after satisfactory performance and payment bonds have been furnished and the contract has been executed.

In the event all bids are rejected by the Commission, certified checks or cashier's checks submitted as proposal guaranty by all bidders will be returned within 10 days of rejection.

Delete Subsection 103.05 on page 23 and substitute the following:

907-103.05--Contract Bonds.

907-103.05.1--Requirement of Contract Bonds. Prior to the execution of the contract, the successful bidder shall execute and deliver to the Executive Director a performance and payment bond(s), in a sum equal to the full amount of the contract as a guaranty for complete and full performance of the contract and the protection of the claimants and the Department for materials and equipment and full payment of wages in accordance with Section 65-1-85 Miss. Code Ann. (1972 as amended). In the event of award of a joint bid, each individual, partnership, firm or corporation shall assume jointly the full obligations under the contract and the contract bond(s).

907-103.05.2--Form of Bonds. The form of bond(s) shall be that provided by or acceptable to the Department. These bonds shall be executed by a Mississippi agent or qualified nonresident agent and shall be accompanied by a certification as to authorization of the attorney-in-fact to commit the Surety company. A power of attorney exhibiting the Surety's original seal supporting the Mississippi agent or the qualified nonresident agent's signature shall be furnished with each bond. The Surety company shall be currently authorized and licensed in good standing to conduct business in the State of Mississippi with a minimum rating by A.M. Best of (A-) in the latest printing "Best's Key Rating Guide" to write individual bonds up to ten percent of the policy holders' surplus or listed on the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as

published by the United States Department of the Treasury, Financial Management Service, Circular 570 (latest revision as published and supplemented on the Financial Management Service Web site and in the Federal Register) within the underwriting limits listed for that Surety. All required signatures on the bond(s) and certifications shall be original signatures, in ink, and not mechanical reproductions or facsimiles. The [Mississippi agent](#) or [qualified nonresident agent](#) shall be in good standing and currently licensed by the Insurance Commissioner of the State of Mississippi to represent the Surety company(ies) executing the bonds.

Surety bonds shall continue to be acceptable to the Commission throughout the life of the Contract and shall not be canceled by the Surety without the consent of the Department. In the event the Surety fails or becomes financially insolvent, the Contractor shall file a new Bond in the amount designated by the Executive Director within thirty (30) days of such failure, insolvency, or bankruptcy. Subsequent to award of Contract, the Commission or the Department may [require additional security for any supplemental agreements executed under the contract or replacement security in the event of the surety\(ies\) loss of the ratings required above](#). Suits concerning bonds shall be filed in the State of Mississippi and adjudicated under its laws without reference to conflict of laws principles.

907-103.08--Failure to Execute Contract. In the first sentence of Subsection 103.08 on page 24, change “bond” to “performance and payment bonds”.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-104-1

CODE: (IS)

DATE: 05/03/2004

SUBJECT: Partnering Process

Section 104, Scope of Work, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-104.01--Intent of Contract. At the end of Subsection 104.01 on Page 24, add the following:

907-104.01.1--Partnering Process.

COVENANT OF GOOD FAITH AND FAIR DEALING:

This contract imposes an obligation of good faith and fair dealing in its performance and enforcement.

The contractor and the Department, with a positive commitment to honesty and integrity, agree to the following mutual duties:

- A. Each will function within the laws and statutes applicable to their duties and responsibilities.
- B. Each will assist in the other's performance.
- C. Each will avoid hindering the other's performance.
- D. Each will proceed to fulfill its obligations diligently.
- E. Each will cooperate in the common endeavor of the contract.

VOLUNTARY PARTNERING:

The Mississippi Department of Transportation intends to encourage the foundation of a cohesive partnership with the contractor and its principal subcontractors and supplier. This partnership will be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objectives are effective and efficient contract performance and completion within budget, on schedule, and in accordance with plans and specifications.

This partnership will be bilateral in make-up, and participation will be totally voluntary. Any cost associated with effectuating this partnering will be agreed to by both parties and will be shared equally.

To implement this partnering initiative prior to starting of work in accordance with the requirements of Subsection 108.02 Notice to Proceed and prior to the preconstruction conference, the contractor's management personnel and MDOT's District Engineer, will initiate a partnering development seminar/team building workshop. The Contractor working with the assistance of the District and the State Construction Engineer will make arrangements to determine attendees for the workshop, agenda of the workshop, duration, and location. Persons required to be in attendance will be the MDOT key project personnel, the contractor's on-site project manager and key project supervision personnel of both the prime and principal subcontractors and suppliers. The project design engineers, FHWA and key local government personnel will be also be invited to attend as necessary. The contractors and MDOT will also be required to have Regional/District and Corporate/State level managers on the project team.

Follow-up workshops may be held periodically throughout the duration of the contract as agreed by the contractor and Mississippi Department of Transportation.

The establishment of a partnership charter on a project will not change the legal relationship of the parties to the contract nor relieve either party from any of the terms of the contract.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-104-4

CODE: (SP)

DATE: 03/01/2011

SUBJECT: Disposal of Materials

Section 104, Scope of Work, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-104.05--Removal and Disposal of All Materials From the Project. Delete the second sentence of the first full paragraph of Subsection 104.05 on page 30 and substitute the following:

The Contractor shall also furnish the Engineer a certified letter stating that the area of disposal is not in a wetland or in Waters of the U.S.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO SPECIAL PROVISION NO. 907-105-6

DATE: 12/12/2011

SUBJECT: Control of Work

After Subsection 907-105.05 on page 1, add the following.

907-105.14--Maintenance During Construction. Before the first sentence Subsection 105.14 on page 39, add the following:

The Contractor will be responsible for the maintenance of existing roadways within the limits of this project starting on the date of the Notice To Proceed / Beginning of Contract Time. Anytime work is performed in a travel lane, the Contractor shall install portable lane closure signs meeting the requirement of the MDOT Standard Drawing or MUTCD.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SPECIAL PROVISION NO. 907-105-6

CODE: (IS)

| DATE: 01/20/2011

| SUBJECT: Control of Work

Section 105, Control of Work, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is modified as follows:

907-105.05--Cooperation by Contractor. In the third sentence of the second paragraph of Subsection 105.05 on page 35, change “Notice to Proceed” to “Notice of Award”.

Delete the fourth paragraph of Subsection 105.05 on page 35, and substitute the following.

| On projects that include erosion control pay items, the Contractor shall also designate a responsible person whose primary duty shall be to monitor and maintain the effectiveness of the erosion control plan, including NPDES permit requirements. This responsible person must be a Certified Erosion Control Person certified by an organization approved by the Department. Prior to or at the pre-construction conference, the Contractor shall designate in writing the Certified Erosion Control Person to the Project Engineer. The designated Certified Erosion Control Person shall be assigned to only one (1) project. When special conditions exist, such as two (2) adjoining projects or two (2) projects in close proximity, the Contractor may request in writing that the State Construction Engineer approve the use of one (1) Certified Erosion Control Person for both projects. The Contractor may request in writing that the Engineer authorize a substitute Certified Erosion Control Person to act in the absence of the Certified Erosion Control Person. The substitute Certified Erosion Control Person must also be certified by an organization approved by the Department. A copy of the Certified Erosion Control Person's certification must be included in the Contractor's Protection Plan as outlined in Subsection 907-107.22.1. This in no way modifies the requirements regarding the assignment and availability of the superintendent.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO SPECIAL PROVISION NO. 907-107-9

DATE: 08/23/2011

SUBJECT: Legal Relations and Responsibility to Public

907-107.14.2.2--Railroad Protective. Delete the first sentence of subparagraph (b) of Subsection 907-107.14.2.2 on page 3 and substitute the following.

(b) **Contractor's Liability - Railroad**, including subcontractors, XCU and railroad contractual with limits of \$1,000,000 each occurrence; \$2,000,000 aggregate.

After Subsection 907-107.17 on page 4, add the following:

907-107.18--Contractor's Responsibility for Utility Property and Services. After the first sentence of Subsection 107.18 on page 63, add the following:

Prior to any excavation on the project, the Contractor shall contact MS 811 and advise them to mark all known utilities in the area of the excavation.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SPECIAL PROVISION NO. 907-107-9

CODE: (IS)

| DATE: 01/20/2011

SUBJECT: Legal Relations and Responsibility to Public

Section 107, Legal Relations and Responsibility to Public, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-107.02--Permits, Licenses and Taxes. Delete in toto Subsection 107.02 on page 49 and substitute the following:

The Contractor or any Subcontractor shall have the duty to determine any and all permits and licenses required and to procure all permits and licenses, pay all charges, fees and taxes and issue all notices necessary and incidental to the due and lawful prosecution of the work. At any time during the life of this contract, the Department may audit the Contractor's or Subcontractor's compliance with the requirements of this section.

The Contractor or any Subcontractor is advised that the "Mississippi Special Fuel Tax Law", Section 27-55-501, et seq. and the Mississippi Use Tax Law, Section 27-67-1, et seq., and their requirements and penalties, apply to any contract or subcontract for construction, reconstruction, maintenance or repairs, for contracts or subcontracts entered into with the State of Mississippi, any political subdivision of the State of Mississippi, or any Department, Agency, Institute of the State of Mississippi or any political subdivision thereof.

The Contractor or any Subcontractor will be subject to one or more audits by the Department during the life of this contract to make certain that all applicable fuel taxes, as outlined in Section 27-55-501, et seq., and any sales and/or use taxes, as outlined in Section 27-67-1, et seq. are being paid in compliance with the law. The Department will notify the Mississippi State Tax Commission of the names and addresses of any Contractors or Subcontractors.

| **907-107.14--Damage Claims and Insurance.**

907-107.14.2--Liability Insurance. Delete Subsection 107.14.2 beginning on page 60 and substitute:

907-107.14.2.1--General. The Contractor shall carry Contractor's liability, including subcontractors and contractual, with limits not less than: \$500,000 each occurrence; \$1,000,000 aggregate; automobile liability - \$500,000 combined single limit - each accident; Workers' Compensation and Employers' Liability - Statutory & \$100,000 each accident; \$100,000 each employee; \$500,000 policy limit. Each policy shall be signed or countersigned by a Mississippi Agent or Qualified Nonresident Agent of the Insurance Company.

The Contractor shall have certificates furnished to the Department from the insurance companies providing the required coverage. The certificates shall be on the form furnished by the Department and will show the types and limits of coverage.

907-107.14.2.2--Railroad Protective. The following provisions are applicable to all work performed under a contract on, over or under the rights-of-way of each railroad shown on the plans.

The Contractor shall assume all liability for any and all damages to work, employees, servants, equipment and materials caused by railroad traffic.

Prior to starting any work on railroad property, the Contractor shall furnish satisfactory evidence to the Department that insurance of the forms and amounts set out herein in paragraphs (a) and (b) has been obtained. Also, the Contractor shall furnish similar evidence to the Railroad Company that insurance has been obtained in accordance with the Standard Provisions for General Liability Policies and the Railroad Protective Liability Form as published in the Code of Federal Regulations, 23 CFR 646, Subpart A. Evidence to the Railroad Company shall be in the form of a Certificate of Insurance for coverages required in paragraph (b), and the original policy of the Railroad Protective Liability Insurance for coverage required in paragraph (a).

All insurance herein specified shall be carried until the contract is satisfactorily complete as evidenced by a release of maintenance from the Department.

The Railroad Company shall be given at least 30 days notice prior to cancellation of the Railroad Protective Liability Insurance policy.

For work within the limits set out in Subsection 107.18 and this subsection, the Contractor shall provide insurance for bodily injury liability, property damage liability and physical damage to property with coverages and limits no less than shown in paragraphs (a) and (b). Bodily injury shall mean bodily injury, sickness, or disease, including death at anytime resulting therefrom. Property damage shall mean damages because of physical injury to or destruction of property, including loss of use of any property due to such injury or destruction. Physical damage shall mean direct and accidental loss of or damage to rolling stock and their contents, mechanical construction equipment or motive power equipment.

(a) **Railroad Protective Liability Insurance** shall be purchased on behalf of the Railroad Company with limits of \$2,000,000 each occurrence; \$6,000,000 aggregate applying separately to each annual period for lines without passenger trains. If the line carries passenger train(s), railroad protective liability insurance shall be purchased on behalf of the Railroad Company with limits of \$5,000,000 each occurrence; \$10,000,000 aggregate applying separately to each annual period.

Coverage shall be limited to damage suffered by the railroad on account of occurrences arising out of the work of the Contractor on or about the railroad right-of-way, independent of the railroad's general supervision or control, except as noted in paragraph 4 below.

Coverage shall include:

- (1) death of or bodily injury to passengers of the railroad and employees of the railroad not covered by State workmen's compensation laws,
- (2) personal property owned by or in the care, custody or control of the railroads,
- (3) the Contractor, or any of the Contractor's agents or employees who suffer bodily injury or death as a result of acts of the railroad or its agents, regardless of the negligence of the railroads, and
- (4) negligence of only the following classes of railroad employees:
 - (i) any supervisory employee of the railroad at the job site
 - (ii) any employee of the railroad while operating, attached to, or engaged on, work trains or other railroad equipment at the job site which are assigned exclusively to the Contractor, or
 - (iii) any employee of the railroad not within (i) or (ii) above who is specifically loaned or assigned to the work of the Contractor for prevention of accidents or protection or property, the cost of whose services is borne specifically by the Contractor or Governmental authority.

(b) **Regular Contractor's Liability**, including subcontractors, XCU and railroad contractual with limits of \$1,000,000 each occurrence; \$2,000,000 aggregate. **Automobile** with limits of \$1,000,000 combined single limit any one accident; **Workers' Compensation and Employer's Liability** - statutory and \$100,000 each accident; \$100,000 each employee; \$500,000 policy limit. **Excess/Umbrella Liability** \$5,000,000 each occurrence; \$5,000,000 aggregate. All coverage to be issued in the name of the Contractor shall be so written as to furnish protection to the Contractor respecting the Contractor's operations in performing work covered by the contract. Coverage shall include protection from damages arising out of bodily injury or death and damage or destruction of property which may be suffered by persons other than the Contractor's own employees.

In addition, the Contractor shall provide for and on behalf of each subcontractor by means of a separate and individual liability and property damage policy to cover like liability imposed upon the subcontractor as a result of the subcontractor's operations in the same amounts as contained above; or, in the alternative each subcontractor shall provide same.

907-107.15--Third Party Beneficiary Clause. In the first sentence of the first paragraph of Subsection 107.15 on page 61, change "create the public" to "create in the public".

907-107.17--Contractor's Responsibility for Work. Delete the fifth sentence of the fifth paragraph of Subsection 107.17 on page 63 and substitute the following:

The eligible permanent items shall be limited to traffic signal systems, changeable message signs, roadway signs and sign supports, lighting items, guard rail items, delineators, impact attenuators, median barriers, bridge railing or pavement markings. The eligible temporary items shall be limited to changeable message signs, guard rail items, or median barriers.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO SPECIAL PROVISION NO. 907-107-10

DATE: 01/17/2013

SUBJECT: Contractor's Erosion Control Plan

Delete the first paragraph of Subsection 907-107.22.1 on page 1, and substitute the following.

If an early Notice to Proceed is desired, the Contractor's Erosion Control Plan should be submitted to the Engineer as soon as possible after award since an approved erosion control plan is required for an early Notice to Proceed. Otherwise, at the preconstruction conference or prior to starting any work on the project, the Contractor shall submit to the Project Engineer for concurrence a comprehensive erosion and siltation control plan. The plan shall utilize temporary measures and permanent erosion control features to provide acceptable controls during all stages of construction.

Delete the first sentence of the second paragraph of Subsection 907-107.22.1 on page 1, and substitute the following.

Approximately 60 calendar days, the time between the Notice of Award and Notice to Proceed/Beginning of Contract Time in the proposal, has been allowed for the submittal and concurrence of the Contractor's erosion control plan, MDOT's review of the plan, and any revisions that may be necessary.

Delete the paragraph under Subsection 907-107.22.2 on page 2, and substitute the following.

Unless otherwise determined by the Engineer from a study of overall job conditions, the exposed surface area of erodible material at any one time on this project shall not exceed 19 acres without prior approval by the Engineer.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SPECIAL PROVISION NO. 907-107-10

CODE: (SP)

| DATE: 03/14/2011

SUBJECT: Contractor's Erosion Control Plan

Section 107, Legal Relations and Responsibility to Public, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

Delete in toto Subsection 107.22.1 on pages 65 and 66, and substitute the following:

907-107.22.1--Contractor's Erosion Control Plan. At the preconstruction conference or prior to starting any work on the project, the Contractor shall submit to the Project Engineer for concurrence a comprehensive erosion and siltation control plan utilizing temporary measures and permanent erosion control features to provide acceptable controls during all stages of construction.

The contract time for this project has allowed 60 calendar days for the submittal and concurrence of the Contractor's erosion control plan, MDOT's review of the plan, and any revisions that may be necessary. The original contract time shall not be adjusted unless delays are caused solely by the Department for the submission, review, and concurrence of the Contractor's erosion control plan.

As a minimum, the plan shall include the following:

1. Erosion Control Plan (ECP) sheets or the plan profile sheets, 11" x 17" or larger, of all areas within the rights-of-way from the Beginning of the Project (BOP) to the End of the Project (EOP) showing the location of all temporary erosion control devices. Erosion control devices should be identified by exact type, temporary or permanent, configuration, and placement of each item to prevent erosion and siltation. [A narrative of the Contractor's temporary erosion control plan shall be submitted in a format similar to the form attached to this special provision, but must include the heading and sub-heading information. As a minimum, the narrative shall include the following:](#)
 - A detailed description, including locations (station numbers) of the Contractor's proposed sequence of operations including, but not limited to, clearing and grubbing, excavation, drainage, and structures.
 - A detailed description, including locations, and best management practices (BMP) that will be used to prevent siltation and erosion from occurring during the Contractor's proposed sequence of operations.
2. A copy of the certification for the Contractor's Certified Erosion Control Person whose primary duty shall be monitoring and maintaining the effectiveness of the erosion control plan, BMPs, and compliance with the NPDES permit requirements.
3. A plan for the disposal of waste materials on the project right-of-way which shall include but not be limited to the following:

- containment and disposal of materials resulting from the cleaning (washing out) of concrete trucks that are delivering concrete to the project site.
- containment and disposal of fuel / petroleum materials at staging areas on the project.

The erosion and siltation control plan shall be maintained on the project site at all times, updated as work progresses to show changes due to revisions in the sequences of construction operations, replacement of inadequate BMPs, and the maintenance of BMPs. Work shall not be started until an erosion control plan has been concurred with by the MDOT. The Engineer will have the authority to suspend all work and/or withhold payments for failure of the Contractor to carry out provisions of MDEQ's Storm Water Construction General Permit, the erosion control plan, updates to the erosion control plan, and /or proper maintenance of the BMPs.

907-107.22.2--Clearing and Grubbing, Haul Roads, Waste Areas, Plant Sites or Other Areas Occupied by the Contractor. Delete the fourth paragraph of Subsection 107.22.2 on page 66 and substitute the following:

Unless otherwise determined by the Engineer from a study of overall job conditions, the exposed surface area of erodible material at any one time for each of the separate operations of this subsection shall not exceed 19 acres without prior approval by the Engineer.

EXAMPLE
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
Storm Water Pollution Prevention Plan (SWPPP)
Narrative

General Permit Coverage No: MSR _____
Project Number: _____
County: _____
Route: _____

SITE INFORMATION

This project consists of grading and installing drainage structures necessary to construct approximately 6 miles of parallel lanes on SR 31 between the Hinds County Line and the Rankin County Line.

SEDIMENT AND EROSION CONTROLS

VEGETATIVE CONTROLS: Clearing and grubbing areas will be minimized to comply with the buffer zones (minimum of 15 feet along the ROW lines and 5 feet along creeks) as per the contract documents. A combination of temporary and permanent grassing will be used to protect slopes as construction progresses. **Should a disturbed area be left undisturbed for 14 days or more, temporary or permanent vegetation will be placed within 7 calendar days.**

STRUCTURAL CONTROLS: Gravel construction entrance/exit will be installed near Stations 145+50, 159+50, 164+50 & 172+50. Riprap ditch checks will be constructed at Stations 144+50, 151+75, 162+00 & 166+25. The Concrete washout area will be at Stations 140+25, 152+00 & 168+50.

HOUSEKEEPING PRACTICES: Structural BPM's will be cleaned out when sediment reaches 1/3 to 1/2 of the height of the BMP. Maintenance and repair of equipment will be performed off-site, material wash out will occur either off-site or within designated wash out areas.

POST-CONSTRUCTION CONTROL MEASURES: As construction is completed, permanent vegetative growth will be established on disturbed soils to improve soil stability and provide a buffer zone for loose material. Paved ditches and flumes will be placed as specified in the ECP to reduce erosion in concentrated flow areas and rip rap will be placed as specified to dissipate flow energy and reduce flow velocity.

IMPLEMENTATION SEQUENCE

Perimeter controls will be installed first. Clearing and grubbing will be performed in 19-acre sections beginning at the BOP and temporary grassing will be installed as needed. Temporary erosion control BMP's will be installed at the drainage structures prior/during construction of the drainage structures. Grading activities will commence at the BOP and proceed towards the EOP, fill slopes will be permanently grassed in stages for fill heights that exceed 5 feet. Base materials will be installed on completed grading sections with the paving to follow.

MAINTENANCE PLAN

All erosion and sediment control practices will be checked for stability and operation following every rainfall but in no case less than once every week. Any needed repairs will be made immediately to maintain all practices as designed. Sediment basins will be cleaned out when the level of sediment reaches 2.0 feet below the top of the riser. Sediment will be removed from behind BMP's when it becomes about 1/3 to 1/2 height of BMP.

Prime Contractor's Signature

Date

Printed Name

Title

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO SPECIAL PROVISION NO. 907-108-24

DATE: 11/13/2012

SUBJECT: Prosecution and Progress

Before the first sentence of the second paragraph after the Table of Anticipated Productive Days in Subsection 907-108.06.2.2 on page 3, add the following.

Available productive days will start being assessed at the original Notice to Proceed/Beginning of Contract Time date shown in the contract documents, regardless of whether or not the Contractor has been issued an early Notice to Proceed.

Before Subsection 907-108.10 on page 5, add the following.

907-108.07--Failure to Complete the Work on Time. Delete the Schedule of Deductions table in Subsection 108.07 on page 85, and substitute the following.

Schedule of Deductions for Each Day of Overrun in Contract Time

Original Contract Amount		Daily Charge
From More Than	To and Including	Per Calendar Day
\$ 0	100,000	\$ 150
100,000	500,000	360
500,000	1,000,000	540
1,000,000	5,000,000	830
5,000,000	10,000,000	1,200
10,000,000	20,000,000	1,800
20,000,000	-----	3,500

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SPECIAL PROVISION NO. 907-108-24

CODE: (SP)

| DATE: 03/15/2011

SUBJECT: Prosecution and Progress

Section 108, Prosecution and Progress, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-108.01--Subletting of Contract.

907-108.01.1--General. At the end of the last paragraph of Subsection 108.01.1 on page 73, add the following:

The Engineer will have the authority to suspend the work wholly or in part and to withhold payments because of the Contractor's failure to make prompt payment within 15 calendar days as required above, or failure to submit the required OCR-484 Form, Certification of Payments to Subcontractors, which is also designed to comply with prompt payment requirements.

907-108.02--Notice To Proceed. Delete the second paragraph of Subsection 108.02 on page 75 and substitute the following:

The anticipated date of the Notice to Proceed (NTP) / Beginning of Contract Time (BCT) will be specified in the proposal.

Delete the fourth paragraph of Subsection 108.02 on page 75 and substitute the following:

Upon written request from the Contractor and if circumstances permit, the Notice to Proceed may be issued at an earlier date subject to the conditions stated therein. The Contractor shall not be entitled to any monetary damages or extension of contract time for any delay claim or claim of inefficiency occurring between the early issuance Notice To Proceed date and the Notice to Proceed date stated in the contract.

907-108.03--Prosecution and Progress. Delete Subsection 108.03.1 on pages 75 & 76, and substitute the following:

907-108.03.1--Progress Schedule. Prior to or at the Pre-Construction Conference, the Contractor shall furnish a progress schedule and be prepared to discuss both its proposed methodologies for fulfilling the scheduling requirements and its sequence of operations. The Engineer will review the schedule and approve the schedule as it relates to compliance with the specifications and logic. The progress schedule must be approved by the Engineer prior to commencing work. The schedule shall be a bar-chart type schedule submitted on 11"x17" paper meeting the below minimum requirements. These activities shall be significantly detailed enough to communicate the Contractor's understanding of the construction sequencing and phasing of the project.

When preparing the progress schedule, the Contractor shall include the following:

- Show a time scale to graphically show the completion of the work within contract time.
- Define and relate activities to the contract pay items.
- Show all activities in the order the work is to be performed including submittals, submittal reviews, fabrication and delivery.
- Show all activities that are controlling factors in the completion of the work.
- Show the time needed to perform each activity and its relationship in time to other activities.

Should the schedule not include the above requirements or becomes unrealistic during construction, the Contractor should immediately submit a revised, more realistic schedule for approval.

907-108.03.2--Preconstruction Conference. Delete the first paragraph of Subsection 108.03.2 on page 76 and substitute the following:

Prior to commencement of the work, a preconstruction conference shall be held for the purpose of discussing with the Contractor essential matters pertaining to the prosecution and satisfactory completion of the work. The Contractor will be responsible for scheduling the preconstruction conference. The Contractor will advise the Project Engineer in writing 14 days prior to the requested date that a conference is requested. When the contract requires the Contractor to have a certified erosion control person, the Contractor's certified erosion control person shall be at the preconstruction conference. The Department will arrange for utility representatives and other affected parties to be present.

Delete the third paragraph of Subsection 108.03.2 on page 76.

907-108.06--Determination and Extension of Contract Time. Delete Subsections 108.06.1 and 108.06.2 on pages 79 thru 85 and substitute the following:

907-108.06.1--Blank.

907-108.06.2--Based on Calendar Date Completion.

907-108.06.2.1--General. Contract Time will be established on the basis of a Completion Date, as indicated in the contract. The span of time allowed for the completion of the work included in the contract will be indicated in the contract documents and will be known as "Contract Time".

The span of time allowed in the contract as awarded is based on the quantities used for comparison of bids. If satisfactory fulfillment of the contract requires performance of work in greater quantities than those set forth in the proposal, the time allowed for completion shall be increased in Calendar Days in the same ratio that the cost of such added work, exclusive of the cost of work altered by Supplemental Agreement for which a time adjustment is made for such altered work in the Supplemental Agreement, bears to the total value of the original contract unless it can be established that the extra work was of such character that it required more time

than is indicated by the money value.

The Contractor shall provide sufficient materials, equipment and labor to guarantee the completion of the work in the contract in accordance with the plans and specifications within the Contract Time.

907-108.06.2.2--Contract Time. The following TABLE OF ANTICIPATED PRODUCTIVE DAYS indicates an average/anticipated number of productive days per month.

TABLE OF ANTICIPATED PRODUCTIVE DAYS

Month	Available Productive Days
January	6
February	7
March	11
April	15
May	19
June	20
July	21
August	21
September	20
October	16
November	11
December	5
Calendar Year	172

Allocation of anticipated productive days for a fractional part of the month will be computed as a proportion of the listed anticipated productive days for the applicable month.

An available productive day will be assessed (a) any day of the week, Monday through Friday, exclusive of legal holidays recognized by the Department in Subsection 108.04.1, in which the Contractor works or could have worked for more than six (6) consecutive hours on the controlling items of work, as determined by the Engineer, or (b) any Saturday, exclusive of legal holidays recognized by the Department in Subsection 108.04.1, in which the Contractor works for more than six (6) consecutive hours on the controlling items of work, as determined by the Engineer. When the Contractor works less than four consecutive hours during the day, no time will be charged for that day. When the Contractor works more than four but less than six consecutive hours, one-half (0.5) of an available work day will be charged for that day. When he Contractor works six or more consecutive hours during the day, one (1.0) available work day will be charged for that day.

Should the weather or other conditions be such that four (4) consecutive satisfactory hours are not available prior to noon (for daytime operations) or midnight (for nighttime operations), no time will be assessed for that day regardless of the above conditions. However, if the Contractor elects to work, time will be assessed in accordance with the previous paragraph.

Weather delays will not be considered for Saturdays, Sundays or legal holidays recognized by the Department in Subsection 108.04.1.

Available productive days will be based on soil and weather conditions and other specific conditions cited in the contract. The Engineer will determine on each applicable day the extent to which work in progress could have been productive, regardless of whether the Contractor actually worked.

Each month the Engineer will complete, and furnish to the Contractor, an "Assessment Report for Available Productive Days" (CSD-765). This report shows the number of available productive days during the estimate period and the cumulative available productive days to date. The Contractor should review the Engineer's report as to the accuracy of the assessment and confer with the Resident or Project Engineer to rectify any differences. Each should make a record of the differences, if any, and conclusions reached. In the event mutual agreement cannot be reached, the Contractor will be allowed a maximum of 15 calendar days following the ending date of the monthly report in question to file a protest Notice of Claim in accordance with the provisions of Subsection 105.17. Otherwise, the Engineer's assessment shall be final unless mathematical errors of assessment are subsequently found to exist, and any claim of the Contractor as to such matter shall be waived.

At any given date, the ratio of the accumulated monetary value of that part of the work actually accomplished to the total contract bid amount adjusted to reflect approved increases or decreases shall determine the "percent complete" of the work.

The "percentage of elapsed time" shall be calculated as a direct ratio of the expired calendar days to the total calendar days between the Beginning of Contract Time and the Specified Completion Date in the contract.

When the "percent complete" lags more than 20 percent behind the "percentage of elapsed time", the Contractor shall immediately submit a written statement and revised progress schedule indicating any additional equipment, labor, materials, etc. to be assigned to the work to ensure completion within the specified contract time. When the "percent complete" lags more than 40 percent behind the "percentage of elapsed time", the contract may be terminated.

907-108.06.2.3--Extension of Time. The Contractor may, prior to the expiration of the Contract Time, make a written request to the Engineer for an extension of time with a valid justification for the request. The Contractor's plea that insufficient time was specified is not a valid reason for extension of time.

No extension of the specified completion date will be granted except as provided herein. An extension of contract time may be granted for unusually severe weather, abnormal delays caused

solely by the State or other governmental authorities, or unforeseeable disastrous phenomena of nature of the magnitude of earthquakes, hurricanes, tornadoes, or flooded essential work areas which are deemed to unavoidably prevent prosecuting the work.

Unusually severe weather is defined as when the actual available productive days for the contract time are less than the number of available productive days shown in the Table of Anticipated Productive Days.

Any extension of contract time will be based on a calendar days basis, excluding Saturdays, Sundays or legal holidays recognized by the Department in Subsection 108.04.1. No proration of contract time will be made. Any extension of contract time will be made on or after the specified completion date. No extension of contract time will be made on a monthly basis.

Any revision of the specified completion date provided in the contract will be made automatically on the specified completion date as established in the contract, and at a later date if additional conditions so warrant.

If the completion of the project is extended into a season of the year in which completion of certain items of work would be prohibited or delayed because of seasonal or temperature limitations, the Engineer may waive the limitations provided the completion of the work will not result in a reduction in quality. When determined that the completion of the out-of-season items will cause a reduction in the quality of the work, the completion of the project will be further extended so the items may be completed under favorable weather conditions. In either case, the Engineer will notify the Contractor in writing.

Liquidated damages as set forth in Subsection 108.07 under the heading "Daily Charge Per Calendar Day" in the Table titled "Schedule of Deductions for Each Day of Overrun in Contract Time", shall be applicable to each calendar day after the specified completion date, or authorized extension thereof, and until all work under the contract is completed.

907-108.06.2.4--Cessation of Contract Time. When the Engineer by written notice schedules a final inspection, time will be suspended until the final inspection is conducted and for an additional 14 calendar days thereafter. If after the end of the 14-day suspension all necessary items of work have not been completed, time charges will resume. If the specified completion date had not been reached at the time the Contractor called for a final inspection, the calendar day difference between the specified completion date and the date the Contractor called for a final inspection will be added after the 14-day period before starting liquidation damages. If a project is on liquidated damages at the time a final inspection is scheduled, liquidated damages will be suspended until the final inspection is conducted and for seven (7) calendar days thereafter. If after the end of the 7-day suspension all necessary items of work have not been completed, liquidated damages will resume. When final inspection has been made by the Engineer as prescribed in Subsection 105.16 and all items of work have been completed, the daily time charge will cease.

907-108.10--Termination of Contractor's Responsibility. In the last sentence of Subsection 108.10 on page 88, change "bond" to "performance and payment bond(s)".

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO SPECIAL PROVISION NO. 907-109-5

DATE: 05/15/2012

SUBJECT: Measurement and Payment

After the last paragraph of Subsection 907-109.01 on page 1, add the following.

After the second sentence of the fourth full paragraph of Subsection 109.01 on page 90, add the following.

Where loose vehicle measurement (LVM) is used, the capacity will be computed to the nearest one-tenth cubic yard and paid to the whole cubic yard. Measurements greater than or equal to nine-tenths of a cubic yard will be rounded to the next highest number. Measurements less than nine-tenths of a cubic yard will not be rounded to the next highest number. Example: A vehicle measurement of 9.9 cubic yards will be classified as a 10-cubic yard vehicle. A vehicle measurement of 9.8 cubic yards will be classified as a 9-cubic yard vehicle.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-109-5

CODE: (IS)

DATE: 1/20/2011

SUBJECT: Measurement and Payment

Section 109, Measurement and Payment, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-109.01--Measurement of Quantities. Delete the third full paragraph of Subsection 109.01 on page 90 and substitute the following.

When requested by the Contractor, material specified to be measured by the cubic yard or ton may be converted to the other measure as appropriate. Factors for this conversion will be determined by the District Materials Engineer and agreed to by the Contractor. The conversion of the materials along with the conversion factor will be incorporated into the contract by supplemental agreement. The supplemental agreement must be executed before such method of measurement is used.

907-109.04--Extra and Force Account Work. In the last sentence of subparagraph (b) in Subsection 109.04 on page 91, change “bond” to “bond(s)”.

Delete the first sentence of the second paragraph of subparagraph (d) in Subsection 109.04 on page 92 and substitute the following:

In the event an agreement cannot be reached for a particular piece of equipment, the book entitled "Rental Rate Blue Book For Construction Equipment" as published by EquipmentWatch® and is current at the time the force account work is authorized will be used to determine equipment ownership and operating expense rates.

907-109.06--Partial Payment.

907-109.06.1--General. Delete the fourth and fifth sentences of the third paragraph of Subsection 109.06.1 on page 94, and substitute the following:

In the event mutual agreement cannot be reached, the Contractor will be allowed a maximum of 25 calendar days following the Contractor's receipt of the monthly estimate in question to file in writing, a protest Notice of Claim in accordance with the provisions Subsection 105.17. Otherwise, the Engineer's estimated quantities shall be considered acceptable pending any changes made during the checking of final quantities.

907-109.07--Changes in Material Costs. Delete the third full paragraph of Subsection 109.07 on page 96 and substitute the following:

A link to the established base prices for bituminous products and fuels will be included in the contract documents under a Notice to Bidders entitled "Petroleum Products Base Prices."

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| **SPECIAL PROVISION NO. 907-110-2**

CODE: (SP)

| **DATE: 04/02/2010**

SUBJECT: Wage Rates

Section 110, Required Contract Provisions, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-110.02--Application. Delete Subsection 110.02.2 on page 100 and substitute the following.

907-110.02.2--Wage Rates. All persons employed or working upon the site of the work will be paid at wage rates not less than those contained in the wage determination decision of the Secretary of Labor in effect 10 days prior to taking bids.

| **Bidders are advised that regardless of the wage rates listed in the Supplement to FHWA 1273 in the contract, minimum federal wage rates must be paid.**

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-225-3

CODE: (IS)

DATE: 02/23/2012

SUBJECT: Grassing

Section 907-225, Grassing, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

Delete in toto Section 225 on pages 158 thru 163, and substitute the following.

SECTION 907-225--GRASSING

907-225-01--Description. This work consists of furnishing, transporting, placing, plant establishment, and all work, including ground preparation, fertilizing, seeding, and mulching, necessary to produce a satisfactory and acceptable growth of grass.

At the Contractor's option, seeds and mulch may be incorporated using a hydraulically applied method under certain limitations. Under no circumstances shall fertilizer be incorporated hydraulically.

907-225.02--Materials.

907-225.02.1--Fertilizers. Fertilizers for purposes of this specification shall be understood to include standard manufactured products consisting of single or combination ingredients and agricultural limestone.

All fertilizer shall comply with the State fertilizer laws, Subsection 715.02, and the requirements of this specification.

907-225.02.2--Seeds. Seeds shall meet the requirements of Subsection 715.03, subject to the provisions of this subsection. The Contractor shall acquire seed from persons registered with the Mississippi Department of Agriculture and Commerce.

Except for the germination requirements, bags of seeds properly labeled or tagged according to law and indicating characteristics meeting or exceeding the requirements of Subsection 715.03 will be acceptable for planting.

The Contractor should provide adequate dry storage facilities for seeds, and shall furnish access to the storage for sampling stored seed.

907-225.02.3--Mulch.

907-225.02.3.1--Vegetative Mulch. The vegetative materials for mulch shall meet the

requirements of Subsection 215.02.

907-225.02.3.2--Hydraulically Applied Mulch (Hydromulch). Fibers for hydromulch shall be produced from wood, straw, cellulose, natural fibers, or recycled fibers which are free of non-biodegradable substances. The fiber shall disperse into a uniform slurry when mixed with water. Fibers shall be colored green, or other approved contrasting color, and shall not stain concrete or other surfaces. The use of tackifiers or activators will be allowed.

Hydromulch shall be listed on the Department's "Approved Sources of Materials".

907-225.02.3.2.1--Wood Fiber Mulch. Wood fiber mulch shall be made from wood chip particles manufactured particularly for discharging uniformly on the ground surface when dispersed by a hydraulic water sprayer. It shall remain in uniform suspension in water under agitation and blend with grass seed and fertilizer to form a homogeneous slurry. The fibers shall intertwine physically to form a strong moisture-holding mat on the ground surface and allow rainfall to percolate the underlying soil. The fiber material shall be heat processed so as to contain no germination or growth-inhibiting factors. The mulch shall be dyed an appropriate color to facilitate the application of material using non-toxic dye.

907-225.02.3.2.2--Cellulose Fiber Mulch. Cellulose fiber mulch consist of recycled paper stock products which are shredded into small pieces particular for application by hydraulic seeding equipment. It shall mix readily and uniformly under agitation with water and blend with grass seed and fertilizer to form a homogeneous slurry. When applied to the ground surface, the material shall form a strong moisture-holding mat, allow rainfall to percolate the underlying soil, and remain in place until the grass root system is established. The material shall contain no growth inhibiting characteristic or organisms. The mulch shall be dyed an appropriate color to facilitate the application of material using non-toxic dye.

907-225.02.3.2.3--Wood/Cellulose Fiber Mulch. Wood/cellulose fiber mix hydroseeding mulch shall consist of a combination of the above wood and cellulose fibers at a ratio recommended by the manufacturer of the products.

907-225.02.3.2.4--Straw Mulch. Straw mulch shall consist of a natural straw fiber. This material shall be a minimum 90% straw and essentially free from plastic materials or other non-bio degradable substances. The material shall be disperse into a uniform mulch slurry when mixed with water.

907-225.02.3.2.5--Tackifier. The tackifier will serve the purpose of an adhesive to form a bond between the soil, fiber, and seed particles. It will also allow the soil to retain moisture. The tackifier shall be of the organic or synthetic variety.

907-225.03--Construction Requirements.

907-225.03.1--Ground Preparation. Ground preparation, light or standard, consists of plowing, loosening, and pulverizing the soil to form suitable beds for erosion control items in reasonably close conformity with the established lines and grades without appreciable humps or depressions.

When grassing an area that has been previously planted with temporary grassing, a standard ground preparation will be required. The previously planted grasses shall be disked, tilled, plowed, etc. to assure that the existing temporary grasses are thoroughly mixed into the soil.

Any equipment used for ground preparation shall be approved units suitable to perform the work and subject to the requirements of Subsection 108.05.

The Contractor shall take full advantage of weather and soil conditions, and no attempt shall be made to prepare soil when it is wet or in a condition which will not allow the soil to be properly tilled.

Light ground preparation should be used on areas where seeding is required to improve the coverage of partially vegetated areas.

Standard ground preparation should be used on areas designated to be solid sodded and unvegetated areas designated to be seeded.

Aerating, moistening, or otherwise bringing the soil to a suitable condition for ground preparation shall be considered as incidental to the work and will not be measured for separate payment.

907-225.03.1.1--Light Ground Preparation. Light ground preparation consists of scratching the surface with a close-tooth harrow, disk-harrow, or similar equipment. The depth of scratching should be at least three-quarters inch but not deep enough to damage existing grasses of the type being planted.

907-225.03.1.2--Standard Ground Preparation. Standard ground preparation consists of plowing or disk-harrowing and thoroughly pulverizing the areas immediately before the application of erosion control (vegetative) items. Unless otherwise specified, the pulverized and prepared seedbed should be at least four inches deep and shall be reasonably free of large clods, earthballs, boulders, stumps, roots and other objectionable matter. Incorporation of fertilizer and ground preparation may be performed simultaneously.

907-225.03.2--Fertilizing. Fertilizing consists of furnishing, transporting, spreading, and incorporating fertilizers. The Contractor shall furnish all equipment necessary to properly handle, store, uniformly spread, and incorporate the specified application of fertilizer.

Unless otherwise specified in the contract, the Contractor shall incorporate bag fertilizer at a rate of 1000 pounds per acre of 13-13-13 commercial fertilizer. The equivalent rate of other type fertilizers will be allowed if the equivalent percentages of Nitrogen, Phosphorus and Potassium are obtained. The Contractor shall incorporate agricultural limestone at a rate of 5000 pounds per acre. Fertilization shall be applied uniformly on the areas to be planted or seeded and uniformly incorporated into the soil.

Fertilizers should be applied on individual areas of not more than three acres.

All fertilizer should be incorporated within 24 hours following spreading.

907-225.03.3--Seeding. Seeding consists of furnishing and planting seeds in a prepared seedbed, covering the seeds, and providing plant establishment on all areas seeded.

Prior to planting the seeds, ground preparation and fertilizing shall be satisfactorily performed.

The required type of seeds, minimum rates of application, and planting dates of seeds are shown in the vegetation schedule in the plans.

When a vegetation schedule is not shown in the plans, the following types of seed and application rates shall be used, unless otherwise approved by the Engineer.

Bermudagrass -----	20 pounds per acre
Bahiagrass -----	25 pounds per acre
Tall Fescue -----	15 pounds per acre
Crimson Clover -----	20 pounds per acre

It is the Contractor's responsibility to apply an ample amount of each type of seed to produce a satisfactory growth of grass and of the seed type required. At the completion of the project, a satisfactory growth of grass will be required. Reference Section 210 for satisfactory growth and coverage of dormant seed.

Seeding should not be done during windy weather or when the ground is frozen, extremely wet, or in a condition which will not allow the soil to be properly tilled.

907-225.03.3.1--Conventional Application. Legume seeds should be treated in accordance with Subsection 715.03.4 immediately before sowing. Seeds should be uniformly sown over the entire area with mechanical seeders. Seeds of different sizes may necessitate separate sowing. When legume seeds become dry, they should be re-inoculated.

All seeds should be covered lightly with soil by raking, rolling, or other approved methods, and the area compacted with a cultipacker.

Mulching should be performed as soon as practicable after seeding.

907-225.03.3.2--Hydroseeding Application. Seeds may be applied using the hydroseeding method except during the months of June, July, August, and September. During these months, the seeding shall be incorporated in accordance with the above Conventional Application method.

The seed(s) shall be combined into a distribution tank with all required ingredients on the project site. The application of the seed(s) and all ingredients shall be performed in one operation.

Mulching should be performed simultaneously with or as soon as practicable after seeding.

907-225.03.3.3--Plant Establishment. The Contractor should provide plant establishment on all areas seeded until release of maintenance. At the completion of the project, a satisfactory growth of grass will be required. The Contractor should reference Subsection 210 for satisfactory growth and coverage of dormant seed.

Plant establishment should be provided for a minimum period of 45 calendar days after completion of seeding. In the event satisfactory growth and coverage has not been attained by the end of the 45-day period, plant establishment should be continued until a satisfactory growth and coverage is provided for at least one kind of plant as referenced in Section 210. The Contractor shall perform plant establishment on all areas of temporary seeding until the Engineer determines that the temporary seeding has served its purpose.

Plant establishment shall consist of preserving, protecting, watering, reseeding, mowing, and other work necessary to keep the seeded areas in satisfactory condition.

Areas requiring reseeding should be prepared and seeded and all other work performed as if the reseeding was the initial seeding. The types and application rates of fertilizer will be at the discretion of the Contractor.

907-225.03.3.4--Growth and Coverage. It shall be the Contractor's responsibility to provide satisfactory growth and coverage of grasses, legumes, or combination produced from the specified seeding.

Growth and coverage on seeded areas will be considered to be in reasonably close conformity with the intent of the contract when the type of vegetation specified, exclusive of that from seeds not expected to have germinated and shows growth at that time, has reached a point of maturity where stems or runners overlap adjacent similar growth in each direction over the entire area.

907-225.03.4--Mulching. Mulching consists of furnishing, transporting, and placing mulch on slopes, shoulders, medians, and other designated areas. Unless otherwise noted in the contract or directed by the Engineer, the Contractor has the option to place mulch by the conventional method or by the hydraulic method.

907-225.03.4.1--Vegetative Mulch.

907-225.03.4.1.1--Equipment. Mulching equipment should be capable of maintaining a constant air stream which will blow or eject controlled quantities of mulch in a uniform pattern.

Mulch stabilizers should consist of dull blades or disks without camber and approximately 20 inches in diameter. The disks should be notched, should be spaced at approximately 8-inch intervals, and should be equipped with scrapers. The stabilizer should weigh approximately 1000 to 1200 pounds, should have a working width of no more than eight feet, and should be equipped with a ballast compartment, so that weight can be increased.

907-225.03.4.1.2--Placement of Vegetative Mulch. Mulching should be placed uniformly on designated areas within 24 hours following seeding unless weather conditions are such that

mulching cannot be performed. Placement should begin on the windward side of areas and from tops of slopes. In its final position, the mulch should be loose enough to allow air to circulate but compact enough to partially shade the ground and reduce erosion.

The baled material should be loosened and broken thoroughly before it is fed into the machine to avoid placement of unbroken clumps.

907-225.03.4.1.3--Anchoring Mulch. The mulch should be anchored by using a mulch stabilizer when not hydraulically applied. If a mulch stabilizer is used, the mulch should be punched into the soil for a minimum depth of one inch.

When mulch stabilizers are used, anchoring the mulch should be performed along the contour of the ground surface.

907-225.03.4.2--Hydromulch. Hydromulch shall be applied in accordance with the installation instructions and recommendations of the manufacturer. Hydromulch shall be uniformly applied at the manufacturer's recommended application rate. In no case shall the application rate be less than one (1) ton per acre.

907-225.03.4.3--Protection and Maintenance. The Contractor should maintain and protect mulched areas until the Release of Maintenance of the project. The Contractor should take every precaution to prevent unnecessary foot and vehicular traffic.

The Contractor should mow, remove or destroy any undesirable growth on all areas mulched as soon as any undesirable growth appears. This will prevent competition with the desired plants and to prevent reseeding of undesirable growth.

907-225.03.5--Hydro Equipment. The equipment for hydraulically applying seed and mulch shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend, and homogeneously mix slurry of the specified amount of fiber, seed, and water. The slurry distribution lines shall be large enough to prevent stoppage. The discharge line shall be equipped with a set of hydraulic spray nozzles, which will provide even distribution of the slurry on the various areas to be seeded.

The mixture shall all be combined into the slurry tank for distribution of all ingredients in one operation as specified herein. The materials shall be combined in a manner recommended by the manufacturer. The slurry mixture shall be so regulated that the amounts and rates of application shall result in a uniform application of all materials at rates not less than the amounts specified. Using the color of the mulch as a guide, the equipment operator shall spray the prepared seedbed with a uniform visible coat. The slurry shall be applied in a sweeping motion, in an arched stream, so as to fall like rain, allowing the mulch to build upon each other until an even coat is achieved.

907-225.04--Method of Measurement. Grassing will be measured by the acre. Acceptance will be based on a satisfactory growth and coverage of seeds planted.

Acceptable quantities of agricultural limestone will be measured by the ton.

Acceptable quantities for mulch will be measured by the ton. For vegetative mulch, the weight for measurement will be the product of the number of bales acceptably placed and the average weight per bale as determined on approved scales provided by the Contractor. Anchoring of vegetative mulch will not be measured for separate payment. The cost of anchoring shall be absorbed in the prices bid for other items of work. For hydromulch, the weight for measurement will be the dry weight of the packaged fibers used in the mixture. No payment will be allowed for water, additives, tackifier, or other liquids used in the mixture.

907-225.05--Basis of Payment. Grassing, measured as prescribed above, will be paid for at the contract unit price per acre, which will be full compensation for all required materials, equipment, labor, testing and all work necessary to establish a satisfactory growth of grass.

Hard rock agricultural limestone will be paid for at the contract unit price per ton. Hard rock agricultural limestone with a relative neutralizing value (RNV), determined in accordance with Subsection 907-715-02.2.1.3, of between 60.0% and 62.9% will be paid for at half (1/2) the contract unit price per ton. No payment will be made for hard rock agricultural limestone with an RNV less than 60.0%.

Mulch, measured as prescribed above, will be paid for at the contract unit price per ton, which price shall be full compensation for all materials, equipment, labor, and incidentals necessary to complete the work.

Payment will be made under:

907-225-A:	Grassing	- per acre
907-225-B:	Agricultural Limestone	- per ton
907-225-C:	Mulch, Vegetative Mulch	- per ton
907-225-D:	Mulch, Hydromulch	- per ton

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SPECIAL PROVISION NO. 907-237-4

CODE: (SP)

| DATE: 03/13/2012

SUBJECT: Wattles

Section 907-237, Wattles, is hereby added to and made a part of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction as follows.

SECTION 907-237 - WATTLES

907-237.01--Description. This work consists of furnishing, constructing and maintaining wattles for the retention of soil around inlets, swale areas, small ditches, sediment basins and other areas as necessary. Also, the work includes removing and disposing of the wattles and silt accumulations.

Measurement and payment for wattles will be made only when a pay item is included in the bid schedule of the proposal. The quantity is estimated for bidding purposes only and will be dependent upon actual conditions which occur during construction of the project.

| **907-237.02--Materials.** Wattles used around inlets shall have a diameter of twelve inches (12") and a length adequate to meet field conditions. Wattles used at other locations shall have a diameter of twenty inches (20") and a length adequate to meet field conditions. **The minimum diameter for the above wattle sizes shall be one inch (1") less than the specified diameter.**

The stakes used in securing the wattles in place shall be placed approximately three feet (3') apart throughout the length of the wattle. Stakes shall be wooden and of adequate size to stabilize the wattles to the satisfaction of the Engineer.

In addition to the requirements of this specifications, wattles shall be listed on the Department's "Approved Sources of Materials".

907-237.03--Construction Requirements.

907-237.03.1--General. The wattles shall be constructed at the locations and according to the requirements shown on the erosion control plan.

907-237.03.2--Maintenance and Removal. The Contractor shall maintain the wattles and remove and dispose of silt accumulations.

When the wattles are no longer needed, they shall be removed and the Contractor shall dispose of silt accumulations and treat the disturbed areas in accordance with the contract requirements.

907-237.04--Method of Measurement. Wattles of the size specified will be measured per linear foot.

907-237.05--Basis of Payment. Wattles, measured as prescribed above, will be paid for at the contract unit price per linear foot, which price shall be full compensation for installation, maintaining and removal of the wattles, the removal and disposal of silt accumulations and any required restoration of the disturbed areas.

Payment will be made under:

907-237-A: Wattles, Size - per linear foot

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-304-13

CODE: (SP)

DATE: 06/06/2012

SUBJECT: Granular Courses

Section 907-304, Granular Courses, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-304.02--Materials. After the first paragraph of Subsection 304.02.1 on page 183, add the following.

Crushed concrete meeting the requirements of Subsection 907-703.04.3 may be used in lieu of granular courses or crushed stone courses specified in the contract. This applies to base courses, shoulders, or other required construction on a prepared foundation.

907-304.03--Construction Requirements.

907-304.03.5--Shaping, Compacting and Finishing. Delete the sixth paragraph of Subsection 304.03.5 on page 185.

Delete the first table in Subsection 304.03.5 on page 186 and substitute the following.

Granular Material Class	Lot Average	Individual Test
7,8,9 or 10	97.0	93.0
5 or 6	99.0	95.0
3 or 4	100.0	96.0
1 or 2	102.0	98.0
Crushed Courses*	99.0	95.0

* When placed on filter fabric on untreated subgrade, the individual tests and the average of the five (5) tests shall equal or exceed the following values.

<u>Lot Average</u>	<u>Individual Test</u>
96.0	92.0

907-304.05--Basis of Payment. Add the “907” prefix to the pay items listed on page 187.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO SPECIAL PROVISION NO. 907-401-2

DATE: 07/19/2011

SUBJECT: Hot Mix Asphalt (HMA)

Add the following before 907-401.02.6.2 on page 1.

907-401.02.4--Substitution of Mixture. Delete the table in Subsection 401.02.4 on page 242, and substitute the following:

Mixture	Single Lift Laying Thickness Inches	
	Minimum	Maximum
25 mm	3	4
19 mm	2 ¼	3 ½
12.5 mm	1 ½	2 ½
9.5 mm	1	1 ½
4.75 mm	½	¾

After Subsection 907-401-02.6.2 on page 2, add the following:

907-401.02.6.4.1--Roadway Density. Delete subparagraphs 1., 2., & 3. on page 251 and substitute the following:

1. For all leveling lifts, when full lane width and with a thickness as specified in the table in Subsection 401.02.4, the required lot density shall be 92.0 percent of maximum density.
2. For all single lift overlays, with or without leveling and/or milling, the required lot density shall be 92.0 percent of maximum density.
3. For all multiple lift overlays of two (2) or more lifts excluding leveling lifts, the required lot density of the bottom lift shall be 92.0 percent of maximum density. The required lot density for all subsequent lifts shall be 93.0 percent of maximum density.
4. For all pavements on new construction, the required lot density for all lifts shall be 93.0 percent of maximum density.

907-401.02.6.5--Acceptance Procedure for Pavement Smoothness. Delete the third sentence of the sixth paragraph of Subsection 401.02.6.5 on page 254, and substitute the following.

The wheel paths shall be designated as being located three feet (3') and nine feet (9') from centerline or longitudinal joint, respectively.

907-401.03.1.2--Tack Coat. Delete the three sentences of Subsection 401.03.1.2 on page 259, and substitute the following:

Tack coat shall be applied to previously placed HMA and between lifts, unless otherwise directed by the Engineer. Tack coat shall be applied with a distributor spray bar. A hand wand will only be allowed for applying tack coat on ramp pads, irregular shoulder areas, median crossovers, turnouts, or other irregular areas. Bituminous materials and application rates for tack coat shall be as specified in Table 410-A on page 293. Construction requirements shall be in accordance with Subsection 407.03 of the Standard Specifications.

907-401.03.1.4--Density. Delete the first sentence of the first paragraph of Subsection 401.03.1.4 on page 259 and substitute the following:

The lot density for all dense graded pavement lifts, except as provided below for preleveling, wedging [less than fifty percent (50%) of width greater than minimum lift thickness], ramp pads, irregular shoulder areas, median crossovers, turnouts, or other areas where the established rolling pattern cannot be performed, shall not be less than the specified percent (92.0% or 93.0%) of the maximum density based on AASHTO Designation: T 209 for the day's production. For all leveling lifts, when full lane width and with a thickness as specified in the table in Subsection 401.02.4, the required lot density shall be 92.0 percent of maximum density.

907-401.03.9--Material Transfer Equipment. Delete the paragraph in Subsection 401.03.9 on page 264 and substitute the following:

Excluding the areas mentioned below, the material transferred from the hauling unit when placing the top lift, or the top two (2) lifts of a multi-lift HMA pavement with density requirements, shall be remixed prior to being placed in the paver hopper or insert by using an approved Materials Transfer Device. Information on approved devices can be obtained from the State Construction Engineer. Areas excluded from this requirement include: leveling courses, temporary work of short duration, detours, bridge replacement projects having less than 1,000 feet of pavement on each side of the structure, acceleration and deceleration lanes less than 1,000 feet in length, tapered sections, transition sections for width, shoulders less than 10 feet in width, crossovers, ramps, side street returns and other areas designated by the Engineer.

After Subsection 401.03.13 on page 266, add the following:

907-401.03.14--Shoulder Wedge. The Contractor shall attach a device to the screed of the paver that confines the material at the end gate and extrudes the asphalt material in such a way that results in a compacted wedge shape pavement edge of approximately 30 degrees, but not steeper than 35 degrees. The device shall maintain contact between itself and the road shoulder surface and allow for automatic transition to cross roads, driveways, and obstructions. The device shall be used to constrain the asphalt head reducing the area by 10% to 15% increasing the density of the extruded profile. Conventional single plate strike off shall not be used.

The device shall be TransTech Shoulder Wedge Maker, the Advant-Edge, or a similar approved equal device that produces the same wedge consolidation results. Contact information for these wedge shape compaction devices is the following:

1. TransTech Systems, Inc.
1594 State Street
Schenectady, NY 12304
800-724-6306
www.transtechsys.com

2. Advant-Edge Paving Equipment, LLC
P.O. Box 9163
Niskayuna, NY 12309-0163
518-280-6090
Contact; Gary D. Antonelli
Cell: 518-368-5699
email: garya@nycap.rr.com
Website: www.advantedgepaving.com

Before using a similar device, the Contractor shall provide proof that the device has been used on previous projects with acceptable results, or construct a test section prior to the beginning of work and demonstrate wedge compaction to the satisfaction of the Engineer. Short sections of handwork will be allowed when necessary for transitions and turnouts, or otherwise authorized by the Engineer.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-401-2

CODE: (IS)

DATE: 11/04/2005

SUBJECT: Hot Mix Asphalt (HMA)

Section 401, Hot Mix Asphalt (HMA) - General, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

Delete in toto Subsection 401.02.6.2 on pages 248 and 249, and substitute:

907-401.02.6.2--Assurance Program for Mixture Quality. The Engineer will conduct a quality assurance program. The quality assurance program will be accomplished as follows:

- 1) Conducting verification tests.
- 2) Validate Contractor test results.
- 3) Periodically observing Contractor quality control sampling and testing.
- 4) Monitoring required quality control charts and test results.
- 5) Sampling and testing materials at any time and at any point in the production or laydown process.

The rounding of all test results will be in accordance with Subsection 700.04.

The Engineer will conduct verification tests on samples taken by the Contractor under the direct supervision of the Engineer at a time specified by the Engineer. The frequency will be equal to or greater than ten percent (10%) of the tests required for Contractor quality control and the data will be provided to the Contractor within two asphalt mixture production days after the sample has been obtained by the Engineer. At least one sample shall be tested from the first two days of production. All testing and data analysis shall be performed by a Certified Asphalt Technician-I (CAT-I) or by an assistant under the direct supervision of the CAT-I. Certification shall be in accordance with the *MDOT HMA Technician Certification Program* chapter in the Materials Division Inspection, Testing, and Certification Manual. The Department shall post a chart giving the names and telephone numbers for the personnel responsible for the assurance program.

The Engineer shall be allowed to inspect Contractor testing equipment and equipment calibration records to confirm both calibration and condition. The Contractor shall calibrate and correlate all testing equipment in accordance with the latest versions of the Department's Test Methods and AASHTO Designation: R 18.

Random differences between the Engineer's verification tests and the current running average of four quality control tests at the time of obtaining the verification sample will be considered acceptable if within the following limits:

Item	Allowable Differences
Sieve - % Passing	
3/8-inch and above	6.0
No. 4	5.0
No. 8	4.0
No. 16, for 4.75 mm mixtures ONLY	3.5
No. 30	3.5
No. 200	2.0
AC Content	0.4
Specimen Bulk SG, Gmb @ N_{Design}	0.030
Maximum SG, Gmm	0.020

If four quality control tests have not been tested prior to the time of the first verification test, the verification test results will be compared to the average of the preceding quality control tests. If the verification test is the first material tested on the project or if a significant process adjustment was made just prior to the verification test, the verification test results will be compared to the average of four subsequent quality control test results. For all other cases after a significant process adjustment, the verification test results will be compared to the average of the preceding quality control tests (taken after the adjustment) as in the case of a new project start-up when four quality control tests are not available.

In the event that; 1) the comparison of the Contractor’s running average quality control data and Engineer’s quality assurance verification test results are outside the allowable differences in the above table, or 2) if a bias exists between the results, such that one of the results is predominately higher or lower than the other, and the Engineer’s results fail to meet the JMF control limits, the Engineer will investigate the reason immediately. As soon as the need for an investigation becomes known, the Engineer will increase the quality assurance sampling rate to the same frequency required for Contractor testing. The additional samples obtained by the Engineer may be used as part of the investigation process or for routine quality assurance verification tests. The Engineer's investigation may include testing of the remaining quality control split samples, review and observation of the Contractor's testing procedures and equipment, and a comparison of split sample test results by the Contractor quality control laboratory, Department quality assurance laboratory and the Materials Division laboratory. The procedures outlined in the latest edition of MDOT’s Field Manual for HMA may be used as a guide for the investigation. In the event that the Contractor’s results are determined to be incorrect, the Engineer's results will be used for the quality control data and the appropriate payment for the mixture will be based on the procedures specified in Subsection 401.02.5.8(j).

The Engineer will periodically witness the sampling and testing being performed by the Contractor. The Engineer, both verbally and in writing, will promptly notify the Contractor of any observed deficiencies. When differences exist between the Contractor and the Engineer which cannot be resolved, a decision will be made by the State Materials Engineer, acting as the referee. The Contractor will be promptly notified in writing of the decision. If the deficiencies are not corrected, the Engineer will stop production until corrective action is taken.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-401-6

CODE: (SP)

DATE: 08/21/2012

SUBJECT: Warm Mix Asphalt (WMA)

Section 401, Hot Mix Asphalt (HMA) - General, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction as amended by this special provision is applicable to Warm Mix Asphalt Only.

907-401.01--Description.

These specifications include general requirements that are applicable to Warm Mix Asphalt (WMA).

This work consists of the construction of one or more lifts of WMA in accordance with Section 401 for Hot Mix Asphalt, with the exceptions set forth in this special provision. The WMA shall meet the specific requirements for the mixture to be produced and placed in reasonably close conformity with the lines, grades, thicknesses and typical sections shown on the plans or established by the Engineer.

907-401.02--Materials.

907-401.02.2--WMA Products and Processes. The Department will maintain a list of qualified WMA products and processes. No product or process shall be used unless it appears on this list.

The Contractor may propose other products or processes for approval by the Product Evaluation Committee. Documentation shall be provided to demonstrate laboratory performance, field performance, and construction experience.

907-401.03--Construction Requirements.

907-401.03.1.1--Weather Limitations. The air and pavement temperature at the time of placement shall equal or exceed 40°F, regardless of compacted lift thickness.

907-401.03.8--Preparation of Mixture. Warm mix asphalt is defined as a plant produced asphalt mixture that can be produced and constructed at lower temperatures than typical hot mix asphalt. Typical temperature ranges of non-polymer modified, WMA produced by foaming the asphalt binder at the plant are typically 270°F to 295°F at the point of discharge of the plant. Typical temperature ranges of polymer modified, WMA produced by foaming the asphalt binder at the plant are typically 280°F to 305°F at the point of discharge of the plant. WMA produced by addition of a terminal blended additive may allow the producer to reduce the temperatures below 270°F as long as all mixture quality and field density requirements are met. Production temperatures at the plant may need to be increased or decreased due to factors such as material

characteristics, environmental conditions, and haul time to achieve mixture temperatures at the time of compaction in which uniform mat density can be achieved.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO SPECIAL PROVISION NO. 907-403-4

DATE: 01/08/2013

SUBJECT: Hot Mix Asphalt (HMA)

Before Subsection 907-403.05.2 on page 1, add the following:

907-403.03--Construction Requirements.

907-403.03.2--Smoothness Tolerances. Delete the fourth paragraph of Subsection 403.03.2 on page 267 and substitute the following.

Where only a surface lift is required, the finished surface lift shall have a profile index of not more than 60.0 inches per mile.

Delete the last paragraph of Subsection 403.03.2 at the bottom of page 268, and the table at the top of page 269 and substitute the following:

Except for a single lift overlay, when the Profile Index for the final surface lift is less than or equal to eighteen inches per mile (18.0 inches / mile) per segment, a unit price increase will be added. The following schedule lists the Profile Index range and the corresponding contract price adjustment:

Profile Index inches / mile / segment	Contract Price Adjustment percent of unit bid price
less than 6.0	108
6.0 to 10.0	106
10.1 to 14.0	104
14.1 to 18.0	102
18.1 to Required P.I.	100
over Required P.I.	100 (with correction to Required P.I.)

For a single lift overlay, when the Profile Index for the final surface lift is less than or equal to eighteen inches per mile (18.0 inches / mile) per segment, a unit price increase will be added. The following schedule lists the Profile Index range and the corresponding contract price adjustment:

Profile Index inches / mile / segment	Contract Price Adjustment percent of unit bid price
less than or equal to 18.0	103
18.1 to Required P.I.	100
over Required P.I.	100 (with correction to Required P.I.)

Delete the first full paragraph of Subsection 403.03.2 on page 269 and substitute the following:

Contract price adjustments for rideability shall only be applicable to the surface lift and furthermore to only the segment(s) or portions of the segments(s) of the surface lift that require smoothness be determined by using a profilograph.

Delete the third full paragraph of Subsection 403.03.2 on page 269 and substitute the following:

Any contract price adjustment for rideability will be applied on a segment to segment basis on the theoretical tonnage based on 12-foot lanes, determined in accordance with Subsections 401.02.6.5 and 403.04, for the segment(s) or portions thereof for which an adjustment is warranted.

Delete Subsection 403.03.5.5 on page 273 and substitute the following:

907-403.03.5.5--Preliminary Leveling. All irregularities of the existing pavement, such as ruts, cross-slope deficiencies, etc., shall be corrected by spot leveling, skin patching, feather edging or a wedge lift in advance of placing the first overall lift.

907-403.04--Method of Measurement. After the first paragraph of Subsection 403.04 on page 274, add the following.

The pay quantities for each individual job mix formula (JMF) will be calculated using the approved JMF maximum specific gravity (Gmm) and the following formulas.

When the composite mixture has a maximum specific gravity of 2.540 or less,

$$T_p = T_w$$

When the composite mixture has a maximum specific gravity greater than 2.540,

$$T_p = T_w((100-(((Gmm*A*B)-C)/(Gmm*A*B))*100))/100$$

Where:

- T_p = Total tonnage for payment
- T_w = Total tonnage weighed, used and accepted

Gmm = Maximum Specific Gravity of the approved composite asphalt mixture

A = 46.725 lbs/yd²/in

B = 0.93 = 93% density

C = 110.374 lbs/yd²/in = Theoretical density at 2.540 Gmm

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-403-4

CODE: (IS)

DATE: 11/04/2005

SUBJECT: Hot Mix Asphalt (HMA)

Section 403, Hot Bituminous Pavement, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-403.05.2--Pay Items. Add the "907" prefix to the pay items listed on page 275 & 276.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-403-12

CODE: (SP)

DATE: 08/21/2012

SUBJECT: Warm Mix Asphalt (WMA)

Section 403, Hot Bituminous Pavement, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction as amended by this special provision is applicable to Warm Mix Asphalt Only.

907-403.01--Description. This work consists of constructing one or more lifts of Warm Mix Asphalt (WMA) pavement in accordance with the requirements of Section 403 for Hot Mix Asphalt, with the exceptions set forth in this special provision. The WMA shall meet the requirements of this section and placed in reasonably close conformity with the lines, grade, thicknesses, and typical cross sections shown on the plans or established by the Engineer.

907-403.04--Method of Measurement. Warm mix asphalt will be measured by the ton. The weight of the composite mixture shall be determined in accordance with the provisions of Subsection 401.03.2.1.11.

907-403.05--Basis of Payment. Subject to the adjustments set out in Subsections 401.02.6.3, 401.02.6.4, 401.02.6.5, 401.02.6.6 & 403.03.2, warm mix asphalt, measured as prescribed above, will be paid for at the contract unit price per ton for each lift of pavement specified in the bid schedule and shall be full compensation for completing the work.

907-403.05.2--Pay Items. After the last pay item listed on page 276, add the following:

907-403-M: Warm Mix Asphalt, (1), (2) - per ton
Type Mixture

907-403-N: Warm Mix Asphalt, (1), (3), Leveling - per ton
Type Mixture

907-403-O: Warm Mix Asphalt, (1), (4), Trench Widening - per ton
Type Mixture

907-403-P: Warm Mix Asphalt, HT, (3), Polymer Modified - per ton
Mixture

907-403-Q: Warm Mix Asphalt, HT, (3), Polymer Modified, Leveling - per ton
Mixture

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-407-1

CODE: (SP)

DATE: 02/26/2008

SUBJECT: Tack Coat

Section 407, Tack Coat, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-407.02.1--Bituminous Material. Delete the second sentence of the first paragraph of Subsection 407.02.1 on page 281, and substitute the following:

When not specified, the materials shall be as specified in Table 410-A on page 293.

907-407.03.3--Application of Bituminous Material. Delete the first paragraph of Subsection 407.03.3 on page 281, and substitute the following.

Tack coat shall be applied with a distributor spray bar. A hand wand will only be allowed for applying tack coat on ramp pads, irregular shoulder areas, median crossovers, turnouts, or other irregular areas. Bituminous materials and application rates for tack coat shall be as specified in Table 410-A on page 293. Tack coat shall not be applied during wet or cold weather, after sunset, or to a wet surface. Emulsions shall be allowed to "break" prior to superimposed construction.

907-407.05--Basis of Payment. Delete the pay item at the end of Subsection 407.05 on page 282, and substitute the following:

907-407-A: Asphalt for Tack Coat *

- per gallon

* Grade may be specified

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-601-1

CODE: (IS)

DATE: 08/29/2007

SUBJECT: Structural Concrete

Division 600, Incidental Construction, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

After the heading **DIVISION 600 - INCIDENTAL CONSTRUCTION**, add the following:

Unless otherwise specified, all testing of Portland cement concrete in Division 600 shall be in accordance with the requirements of Subsection 907-601.02.1.

907-601.02--Materials.

907-601.02.1--General. Delete the second and third sentence of the first paragraph of Subsection 601.02.1 on page 348, and substitute the following:

Sampling and testing will be in accordance with TMD-20-04-00-000 or TMD-20-05-00-000, as applicable.

907-601.03.6.3--Removal of Falsework, Forms, and Housing. Delete the first paragraph, the table and second paragraph of Subsection 601.03.6.3 on pages 349 and 350, and substitute the following:

The removal of falsework, forms, and the discontinuance of heating, shall be in accordance with the provisions and requirements of Subsection 907-804.03.15, except that the concrete shall conform to the following compressive strength requirements:

Wingwall and Wall Forms not Under Stress	1000 psi
Wall Forms under Stress	2200 psi
Backfill and Cover clear	2400 psi

In lieu of using concrete strength cylinders to determine when falsework, forms, and housings can be removed, an approved maturity meter may be used to determine concrete strengths by inserting probes into concrete placed in a structure. The minimum number of maturity meter probes required for each structural component shall be in accordance with Subsection 907-804.03.15. Procedures for using the maturity meter and developing the strength/maturity relationship shall follow the requirements of Subsection 907-804.03.15. Technicians using the maturity meter or calculating strength/maturity graphs shall meet the requirements of Subsection 907-804.03.15.

907-601.05--Basis of Payment. Add the “907” prefix to the pay items listed on page 352.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-626-25

CODE: (IS)

DATE: 11/13/2012

SUBJECT: Thermoplastic Traffic Markings

Section 626, Thermoplastic Traffic Markings, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-626.01--Description. After the last sentence of the first paragraph of Subsection 626.01 on page 443, add the following.

All pavement marking material, excluding edge lines over rumble strips, shall be applied using the extrusion/ribbon method. Edge lines placed over rumble strips shall be applied using the atomization/spray method.

907-626.03.1.1--Equipment. After the second paragraph of Subsection 626.03.1.1 on page 444, add the following.

When edge lines are placed over rumble strips, the equipment must be able to apply the marking material using the atomization/spray method instead of extrusion/ribbon method.

907-626.03.1.2--Construction Details. Delete the second sentence of the first full paragraph of Subsection 626.03.1.2 on page 445, and substitute the following.

Unless otherwise specified in the plans or contract documents, the thickness shall be 90 mils for edge lines, center lines, lane lines, barrier lines and detail stripe including gore markings, and 120 mils for crosswalks, stop lines, and railroad, word and symbol markings.

After the last sentence of the third full paragraph of Subsection 626.03.1.2 on page 445, add the following.

When double drop thermoplastic stripe is called for in the contract, additional beads by the drop-on method shall be applied as follows.

Class A glass beads at a rate of not less than three pounds of beads per 100 feet of six-inch stripe.
Class B glass beads at a rate of not less than three pounds of beads per 100 feet of six-inch stripe.

The Class B glass beads shall be applied to the newly placed stripe first, followed by the application of the Class A glass beads.

907-626.05--Basis of Payment. Delete the pay items listed on page 446 and substitute the following.

907-626-A: 6" Thermoplastic* Traffic Stripe, Skip White	- per linear foot or mile
907-626-B: 6" Thermoplastic* Traffic Stripe, Continuous White	- per linear foot or mile
907-626-C: 6" Thermoplastic* Edge Stripe, Continuous White	- per linear foot or mile
907-626-D: 6" Thermoplastic* Traffic Stripe, Skip Yellow	- per linear foot or mile
907-626-E: 6" Thermoplastic* Traffic Stripe, Continuous Yellow	- per linear foot or mile
907-626-F: 6" Thermoplastic* Edge Stripe, Continuous Yellow	- per linear foot or mile
907-626-G: Thermoplastic* Detail Stripe, <u>Color</u>	- per linear foot
907-626-H: Thermoplastic* Legend, White	- per linear foot or square foot

* Indicate Double Drop if applicable

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-631-1

CODE: (SP)

DATE: 05/04/2010

SUBJECT: Flowable Fill

Section 631, Flowable Fill, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is deleted in toto and replaced as follows:

SECTION 907-631 - FLOWABLE FILL

907-631.01--Description. This work shall consist of furnishing and placing a flowable fill material. Uses include, but are not limited to, placement under existing bridges, around or within box culverts or pipe culverts, or at other locations shown on the plans.

907-631.02--Materials. All materials shall meet the requirements of the following Subsections, or as stated herein:

Fine Aggregate	*
Portland Cement	701.01 and 701.02
Fly Ash.....	714.05
Air Entraining Admixtures **	713.02
Water.....	714.01.1 and 714.01.2
Calcium Chloride **	714.02

* The gradation of the fine aggregate shall be fine enough for the fine aggregate to stay in suspension in the mortar to the extent required for proper flow and shall conform to the following grading:

<u>Sieve Size</u>	<u>% Passing</u>
1/2 inch	100
No. 200	< 1

** High air generators shall be used, as required, in order to increase the total air content to 25 – 35%. Only approved high air generators shall be used to obtain the required air content. Either a Type C or E chemical admixture or maximum 1.0% calcium chloride by weight of the total cementitious materials may be added as required by the application and with the approval of the Engineer. Calcium chloride may not be used where the flowable fill comes into contact with metal. Adding the Type C or E chemical admixture or calcium chloride does not require a different or new mixture design from one previously approved.

907-631.02.1--Mixture Design. Flowable fill is a mixture of Portland cement, fine aggregate, water, and, as required to obtain the required total air content, either high air generators or air

entraining admixtures. Fly ash shall be used for Non-Excavatable applications. Flowable fill contains a low cementitious content for reduced strength development.

At least 30 days prior to production of flowable fill, the Contractor shall submit to the Engineer proposed flowable fill mixtures design following the mixture design submittal procedures listed in the Department's *Concrete Field Manual*.

The concrete producer shall assign a permanent unique mixture number to each flowable fill mixture design. All flowable fill mixture designs will be reviewed by the Materials Division prior to use. Flowable fill mixture designs disapproved will be returned to the Contractor with a statement explaining the disapproval.

Once approved, a flowable fill mixture design may be transferred to other projects without additional testing provided the material sources have not changed. Allowable changes in material sources shall meet the requirements of the Department's *Concrete Field Manual*, Section 5.7. For allowable changes in material sources, the mixture design shall be re-verified following the requirements of Subsection 907-631.02.1.2.

907-631.02.1.1--Proportioning of Mixture Design. The mixture design proportions shall be determined based on batches mixed using production equipment.

Table 1, "Flowable Fill Mixture Design Proportioning Guide", is a guide for proportioning flowable fill, except where noted.

Table 1
Flowable Fill Mixture Design Proportioning Guide

	Excavatable	Non-Excavatable
Material	Amount (lbs/yd ³)	
Cement	75 – 150 *	75 – 150 *
Fly Ash	-	150 – 600 *
Fine Aggregate	**	**
Water	***	***

* Guideline for proportioning. The actual amount may vary from the amount listed the Table 1.

** Fine aggregate shall be proportioned to yield one cubic yard of mixture as verified by unit weight.

*** Mixture designs shall produce a consistency that will result in a flowable self-leveling product at time of placement.

Each mixture design shall be verified using production equipment prior to submittal of the mixture design for review. During the verification, the mixture design shall meet the

requirements of the "Performance Requirements Flowable Fill Design" listed in Table 2. The verification performance data and the corresponding batch ticket shall be submitted with the mixture design.

Table 2
Performance Requirements for Verification of Flowable Fill Mixture Designs

Mixture Property	Performance Requirement		Required Test Method
	Excavatable	Non-Excavatable	
Consistency	Approximate 8-inch spread		(see below)
Total Air Content (%)	25 – 35	5 – 15	AASHTO T121
28 Day Compressive Strength (psi)	–	Minimum 125	AASHTO T22 and T23
Unit Weight (lbs/ft ³)	90 – 110	100 – 125	AASHTO T121

The consistency of the fresh mixture shall be that of a thin slurry. The consistency shall be tested by filling to the top a three-inch diameter by six-inch high cylinder which is open on both ends. With the mixture in the cylinder, immediately pull the cylinder straight up. The correct consistency of the mixture will produce a spread meeting the requirements in Table 2 with no segregation.

907-631.02.1.2--Verification of Mixture Design. The verification shall be performed by the Contractor prior to submittal of the mixture design proportions for review. The verification performance data and the corresponding batch ticket shall be submitted with the mixture design. The verification shall be performed using the batching and mixing equipment anticipated to be used during production of the mixture for the project. In addition to the performance requirements listed in Table 2, the verification shall meet the batching tolerance requirements for the material weights listed in the Department's *Concrete Field Manual*.

Adjustments of the proportions of fine aggregate and/or water shall be made to achieve suspension of the fine aggregate.

The requirements in Table 2 for consistency, percent total air content, compressive strength, and unit weight are for verification of the mixture design proportion purposes only and are not intended for jobsite acceptance requirements.

907-631.02.2--Acceptance of Mixture. The acceptance of the mixture at the job site will be based on the performance of the flowable fill mixture placed and will be at the discretion of the Engineer. For acceptance of the mixture at the job site, the mixture shall be self-leveling and shall not settle, segregate, or have excessive bleed water.

907-631.02.3--Manufacturing. Flowable fill will be batched, mixed, and transported in accordance with the requirements of Section 804.

907-631.02.4--Sampling and Testing. The yield shall be determined by testing the first load

placed on each production day in accordance with AASHTO Designation: T121. If adjustments are made to the mixture design proportions to correct for yield, the yield shall be determined on the next load with the adjusted proportions.

907-631.03--Construction Requirements. Prior to placing flowable fill, each end of the structure shall be plugged leaving an opening at each end no larger than necessary to accommodate the filling equipment. Flowable fill shall be discharged from the mixer by any reasonable means into the area to be filled. Unless otherwise approved by the Engineer, filling will begin on the downstream end of the structure and continue until no further material will enter the structure. The flowable fill will then be continued from the upstream end of the structure.

907-631.04--Method of Measurement. Flowable fill will be measured by the cubic yard which will be determined from the yield in accordance with the requirements of Subsection 907-631.02.4. The yield will be calculated by dividing the actual batch weights of each load by the unit weight of the mix, which will be determined by testing the first load placed on each production day.

907-631.05--Basis of Payment. Flowable fill, measured as prescribed above, will be paid for at the contract unit price per cubic yard, which price shall be full compensation for furnishing all labor, equipment, tools and materials to complete the work.

Payment will be made under:

- 907-631-A: Flowable Fill, Excavatable - per cubic yard
- 907-631-B: Flowable Fill, Non-Excavatable - per cubic yard

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-637-4

CODE: (SP)

DATE: 11//21/2012

SUBJECT: ITS Equipment Cabinets

Section 637, Equipment Cabinets, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

Delete in total Section 637 beginning on page 479, and substitute the following:

SECTION 907-637--ITS EQUIPMENT CABINETS

907.637.01--Description. This Section specifies the minimum requirements for equipment cabinets furnished and installed for Mississippi Intelligent Transportation Projects. The cabinet will provide a protective outdoor housing enclosure in which to install field hardware required for ITS devices. Major elements of the equipment cabinet include the cabinet housing and equipment mounting hardware, interior wiring and termination facilities, power supplies, electrical accessories and field installation. Work also includes making modifications to existing ITS cabinets in accordance with the plans, specials provisions, Notice to Bidders and contract documents.

907-637.02--Materials.

907-637.02.1--Blank.

907-637.02.2--Equipment And Materials. The Contractor shall furnish Only new equipment and materials as follows.

- 1) Furnish equipment cabinets and integral materials recommended by the manufacturers for outside plant use and the intended application. This requirement includes wiring and electrical materials and configurations (including connector pin-outs) that are wholly or partially related to the field device applications (CCTV, RDS, VDS, etc.).
- 2) Furnish and configure equipment cabinets to be installed at locations as shown in the Plans. Furnish and configure all equipment and materials for each specific location as shown in the Plans.
- 3) Provide electrical system and components with UL-listings.
- 4) Unless otherwise specified, provide wire and cable with stranded copper conductors, 75°/90° Celsius wet/dry rated insulation, and sized for the maximum voltage and current in the circuit.

907-637.02.3--Components Specified As Rail-Mounted. Components specified as rail-mounted shall be compliant as follows.

- 1) DIN EN 50022 (NS35) component rails.
- 2) Component rails shall be the perforated type and of sufficient length as to protrude beyond the mounted components for fastening to cabinet panels as specified herein.
- 3) UL 1059.
- 4) UL 486E.
- 5) NEMA ISC-4.
- 6) Alternate Rail configurations may be submitted to the Engineer for consideration and approval.

907-637.02.4--Terminal Blocks and Component Terminals. Terminal Blocks and Component Terminals shall meet the following.

- 1) Shall be nickel-plated copper, copper alloy or brass.
- 2) Terminal blocks shall have voltage and current ratings greater than the ratings of the wires that are terminated, be able to terminate wires from #8 AWG to #1/0 AWG wiring and shall be assembled into housing enclosures such that all exposed surfaces are touch-safe. Conductor fastening screws shall be captive. Terminal block housings shall be colored as follows:
 - a. 120 VAC line/hot: black
 - b. 120 VAC neutral: white
 - c. 24 VDC positive: red
 - d. 24 VDC negative: gray
 - e. RS485 communications: orange
 - f. Ground: green or green/yellow

907-637.02.5--Door Locks. Door Locks shall meet the following.

- 1) Provide door locks for all cabinet doors, keyed to MDOT standard Corbin No. 15481RS lock keyed to be operated with a traffic industry conventional No. 2 Key, Corbin No. 1R6380 made from heavy-duty blanks.
- 2) Provide two keys with each cabinet.

907-637.02.6--Labels. Labels shall be provided with agency name, device name and ID labels on all cabinets. Labels shall meet the following minimum requirements:

- 1) Labels shall be flat black lettering on a reflective white background. Lettering shall be a minimum of 1 inch in height.
- 2) Labels shall be manufactured from pre-coated adhesive backed reflective sheeting material meeting the minimum requirements of AASHTO M268 Type 1.
- 3) The agency name labels shall be "MDOT ITS" in one continuous adhesive sheet.
- 4) The device ID labels shall include the device name as an acronym and a hyphen, and shall be one continuous adhesive sheet. Device name acronyms are "CCTV-", "RDS-", "VDS-" or "DMS-".
- 5) The device ID shall be numerals corresponding to the location and shall be installed adjacent to the acronym sheet. Multiple device IDs of the same type shall be on the same line separated with a space. Examples: "CCTV-73", "RDS-219 220", "VDS-303 304".

- 6) Labels shall be installed along the top of the cabinet door (front cabinet door on Type B cabinets), with MDOT ITS label at the top and the device ID labels immediately underneath.

Provide a voltage label on all cabinets or enclosures in accordance with the NEC labeling requirements. Voltage labels shall meet the following minimum requirements:

- 1) Labels shall be flat black lettering on a reflective yellow background. Lettering shall be a minimum of 1 inch in height.
- 2) Labels shall be manufactured from pre-coated adhesive backed reflective sheeting material meeting the minimum requirements of AASHTO M268 Type 1.
- 3) Labels shall include the voltages entering the cabinet and shall be one continuous adhesive sheet. Examples are "120VAC" or "24VDC".
- 4) Labels shall be installed on all cabinet doors.

907-637.02.7--Type A Cabinet. Type A cabinets shall meet the following.

- 1) All Type A cabinets shall be identical in manufacture and assembly, capable of supporting Radar Detection System units.
- 2) Provide a Type A cabinet intended for outdoor use with a minimum NEMA 3R rating.
- 3) The cabinet enclosure shall be manufactured from 0.125-inch aluminum.
- 4) The cabinet shall provide a minimum of one ventilation louver on at least two sides. Any louver opening greater than 3/16 inch in any dimension shall be screened to prevent insect entry.
- 5) The cabinet shall be intended for strapped pole-mounting; provide all mounting hardware necessary including 1/2-inch stainless steel mounting straps.
- 6) Provide a Type A cabinet enclosure with dimensions of 18 inches (H) by 14 inches (W) by 8 inches (D) with a tolerance of +/- 0.25 inches.
- 7) Cabinet door shall reveal the entire front opening of the cabinet for accessibility. The hinge shall be designed to prevent the door from sagging.
- 8) Include a single-piece 0.125-inch aluminum back panel covering no less than 90% of the cabinet back wall. Back panel shall be affixed to the enclosure with threaded fasteners and shall be removable from the enclosure with hand tools only and without requirement to remove the cabinet door, mounting straps, or any other components other than communications or device wiring.
- 9) The cabinet shall be furnished with doorstops, which retain the doors open in a 90 degree and 120 degree positions.
- 10) Provide on the back panel a grounding lug directly bonded to the back panel capable of terminating #6 AWG wire.

907-637.02.7.1--RDS Communications Wiring. RDS communication wiring shall meet the following.

- 1) Component rail physically and electrically fastened to the cabinet back panel.
- 2) Strain relief brackets for the RDS comm. cable(s) and the RDS unit harness cables.

- 3) Parallel-connection single-stage surge suppressors for the four wire RS-485 data signal for the RDS units with integral or separate terminals for a minimum of three RDS comm. Cables.
- 4) Parallel-connection zero-power dissipation surge suppressor for the 12-24VDC power supply for the RDS units with integral or separate terminals for a minimum of three RDS comm. cables and two RDS unit harness cables.
- 5) Connection/jumper wiring between the surge suppressors and the local/remote communications disconnect module(s) shall be of the same conductor size, type, and insulation color as in the RDS comm. cable.

907-637.02.8--Type B Cabinet. Type B cabinets shall meet the following.

- 1) All Type B cabinets (except those at solar power locations) shall be uniform in manufacture and assembly, capable of supporting the field equipment as shown on the plans. As a minimum support is required for two RDS units, one Type A or B network switch, one video encoder, one Type A radio/antenna, RDS comm. cable and fiber drop panel terminations, regardless of the devices shown in the Plans at a specific location.
- 2) A complete Type B cabinet shall be an assembly consisting of a cabinet housing and electrical subsystems.
- 3) Provide a Type B cabinet housing that conforms to the standards for a Type 170 336S (approximate exterior dimensions 46 inches (H) x 24 inches (W) x 23 inches (D)), including standard EIA 19-inch rack cabinet cage, as defined in the latest version of the Caltrans Transportation Electrical Equipment Specifications (TEES). The minimum clear vertical inside dimension of the 19-inch rack for equipment mounting shall be 39.5 inches. Standard cabinet accessories for traffic signal operations, such as controller, power distribution assembly, input/output file and termination panels, and the police panel, are not required as part of this cabinet assembly.

907-637.02.8.1--Hardware. Hardware shall meet the following.

- 1) Provide all mounting hardware necessary for base or pole mounting as shown on the plans. As a minimum provide three (3) 3/4-inch stainless steel mounting straps for pole mounted cabinets.
- 2) Include hooks, welded to the inside of each cabinet door, for hanging a side-opening, opaque, resealable, heavy-duty plastic documentation pouch with metal or hard-plastic reinforced holes for the door hooks. Provide one pouch with each cabinet.
- 3) Include a rack-mounted cabinet sliding storage drawer in accordance with the following:
 - a. Approximate exterior dimensions 1.75 inches (H) x 16 inches (W) x 14 inches (D).
 - b. Telescoping drawer guides to allow full extension from the rack cage.
 - c. Opening storage compartment lid to access storage space for cabinet documentation and other items.
 - d. Supports a weight of 25 lb when extended.
 - e. Non-slip plastic laminate surface attached to the compartment lid which covers a minimum of 90% of the surface area of the lid.
 - f. Mounted in the rack cage with the bottom surface approximately 9 inches above the bottom of the rack cage.

- 4) Includes side panels within the two sides of the rack cabinet cage, inserted and fastened from the inside of the cage. Use side panels fabricated from 0.125 inch 5052 sheet aluminum alloy and sized to the full inside dimensions of the rack cabinet cage. Side panel surfaces for equipment mounting are denoted by cabinet side, with the "right" side being the support pole side, and by upper or lower as related to the sliding storage drawer. Upper right side panel (support pole side of cabinet, above the drawer) and lower left side panel (opposite side from the support pole, below the drawer) are example side panel surface names.
 - a. Includes a 12-inch long DIN rail (for future components) mounted in the horizontal and vertical center of the lower left side panel.

907-637.02.8.2--Electrical Subsystems. Provide Type B cabinet electrical subsystems meeting the following requirements (Note: Type B Cabinets at Solar Power Locations are not required to meet Section 637.05.02 requirements):

- 1) Includes an electrical distribution module comprised of the following DIN rail-mounted components:
 - a. Service entrance terminal block with positions for 120VAC line, neutral, and ground and capable of terminating minimally #6 through #8 AWG wire, located at one end of the mounting rail with an approximately 0.75 inch blank spacer module adjacent to the main cabinet breaker.
- 2) Main cabinet automatic overcurrent 15A circuit breaker that is UL-listed and of the mechanical-magnetic type rated for use from -18° C to 50° C minimum.
- 3) Main cabinet surge suppressor for single-phase 120VAC service entrance, parallel wired with a clamp voltage of approximately 280V and capable of a surge current of at least 20,000 amps.
- 4) Main cabinet filter for power line noise and switching transient suppression, integral to, or separate from and wired to, the main cabinet surge suppressor.
- 5) Electrical distribution terminal block for line and neutral conductors parallel wired to the main cabinet surge suppressor but non-filtered, with a minimum terminating capability of six conductors of #10 to #18 AWG. Label the terminal block as "ACCY POWER".
- 6) Electrical distribution terminal block for line and neutral conductors for circuits on the load/equipment side of the power line filter, with a minimum terminating capability of six conductors of #10 to #18 AWG. Label the block as "EQUIP POWER".
- 7) Electrical distribution terminal block for grounding and bonding conductors located on the same rail but separate from the service entrance terminal block and connected to the entrance ground with a #6 AWG green insulated wire. The grounding block shall have a minimum terminating capability of two #6 AWG conductors and ten #10 to #18 AWG conductors.
- 8) Ground fault interrupt duplex receptacle (NEMA 5-15R) with 2.5A circuit breaker connected to the ACCY POWER distribution block. Permanently affixed to the receptacle, provide two red, orange or green/yellow labels with minimum 0.25 inch lettering with the legend "300 WATTS MAX". This receptacle is for technician use only and shall not be used to power equipment.
- 9) Include two duplex non-GFCI equipment power receptacles (NEMA 5-15R) connected to the EQUIP POWER distribution block mounted on the upper rear corner of the cabinet upper right side panel. Permanently affixed to the receptacle, Provide two red, orange or

green/yellow labels with minimum 0.25 inch lettering with the legend "75 WATTS MAX" permanently affixed to the receptacle.

- 10) Interconnection wiring between all electrical distribution module components and the other systems included in or housed in the Type B cabinet.

907-637.02.8.3--Lighting Subsystem. Include a cabinet lighting subsystem comprised of the following components:

- 1) One fluorescent lighting fixture, minimum 15 watt, mounted on the inside top front portion of the cabinet, with a cool white lamp with shatter-proof cover and operated by a normal power factor UL listed ballast.
- 2) A resistor-capacitor network noise suppressor installed across the light fixture power terminals.
- 3) Two door-actuated switches installed to turn on the cabinet light when either door is opened.
- 4) Powered from the ACCY POWER distribution block.

907-637.02.8.4--RDS Communications Subsystem. Where RDS are shown in the plans include DIN rail-mounted components that include the following:

- 1) Nominal 24VDC output power supply, capable of user setting between 23 and 28VDC minimum, with minimum 1A output rating and minimum operating temperature range of -25° C to +70° C. Power supply shall provide terminal facilities for a minimum of three sets of #14 AWG conductors (in the RDS comm cable). Maximum size of the power supply shall be 1 inch (W) X 7 inches (H) X 7 inches (D). Connect the power supply to the EQUIP POWER distribution block for 120VAC input.
- 2) Include interconnection wiring between the RDS communications subsystem and the Terminal Server.
- 3) Surge suppressor for the RS485 data signal, wired between the terminal server and the RDS units shall be provided. The surge suppressor shall protect the 4-wire RS485 data signal with hybrid multi-stage suppression components including gas tube and silicon avalanche diode. The surge suppressor shall have a response time no greater than 1 nanosecond. The surge suppressor shall provide terminal facilities for a minimum of four two-pair cables of #22 AWG conductors.

907-637.02.8.5--CCTV Subsystem. The requirements listed in Subsection 650.2.12 shall be met by installing the required CCTV support equipment in the Type B Cabinet.

907-637.03--Construction Requirements.

907-637.03.1--General. This work shall meet the following general requirements.

- 1) Install and configure cabinets as shown in the Plans and according to manufacturers recommendations, including installations and dimensions given for pole-mounting in relationship to the surrounding grade.
- 2) Bond all cabinets to the pole grounding lug with minimum #6 AWG stranded copper bare or green-insulated cabinet grounding wire. Alternately on existing poles only, bond the

cabinet grounding wire to an existing pole grounding wire with a cast brass or copper alloy threaded compression connector within 4 inches of the existing pole grounding lug.

- 3) Do not install electrical service or electronic devices in the cabinet or connect to the cabinet until ground testing for the pole or structure has been successfully completed and accepted, and the cabinet ground connection has been installed.
- 4) Provide a cabinet wiring and interface diagram to be included in the required hanging, side-opening, able to be resealed opaque, heavy-duty plastic documentation pouch.

907-637.03.2--Type B. Type B cabinets shall meet the following.

- 1) Install and configure equipment in the Type B cabinet in accordance with the requirements for that equipment, including RDS units, CCTV, Type A and B network switches, video encoders, Type A radio/antennas, RDS comm. cables and/or fiber distribution or drop panels.
- 2) Do not install electronic devices in the cabinet until electrical service has been installed and activated, and the cabinet ventilation fan is operational.
- 3) Install network switches and video encoders in the top most area of the cabinet rack. Use the equipment receptacles for power.
- 4) Install supporting equipment/electronics for CCTV on the lower area of the cabinet upper left side panel. Ensure there is no physical or access conflict with the network switch and video encoder. Use the EQUIP POWER distribution block for the power source.
- 5) Install fiber drop panels in a vertical configuration on the lower rear edge of the cabinet upper right side panel.

907-637.03.3--Testing. The Contractor shall conduct a Project Testing Program as required below. All costs associated with the Project Testing Program shall be included in overall contract prices; no separate payment will be made for any testing.

The ITS Engineer, Project Engineer and/or their designee(s) are only responsible for attending and observing each test, and reviewing and approving the Contractor's test results documentation. The ITS Engineer, Project Engineer and/or their designee(s) reserve the right to attend and observe all tests. The Contractor is required to perform the Conditional Acceptance test with the MDOT ITS Engineer or his designee present.

- 1) The Contractor shall conduct a project testing program for all equipment cabinets. The project testing program shall include but is not limited to the specific requirements in this subsection.
- 2) All test results shall confirm physical and performance compliance with this Special Provision.
- 3) Submit all test results documentation to the Engineer within 7 days of completion of the tests. The Engineer will review test documentation.

907-637.03.3.1--Standalone Acceptance Test (SAT). SAT tests shall be as follows.

- 1) Perform a SAT on all equipment cabinets on this project after field installation is complete, including but not limited to all field devices (RDS, CCTV, communications electronics, etc.) to be installed in or connected to that given cabinet.

- 2) A SAT for a given equipment cabinet shall only be performed in conjunction with the SAT for all devices installed in or connected to that given cabinet.
- 3) Visual inspection of installation.
- 4) Inspection of cabinet documentation.
- 5) Functional test of all cabinet equipment, including circuit breaker, receptacles, fan and thermostat, and lights and door switches.
- 6) Measurement of DC power supply operating under full load.

907-637.04--Method of Measurement. Equipment Cabinet of the type specified will be measured per each. . Such measurement shall be inclusive of furnishing and installing the equipment cabinet and all related material and equipment specified in the Plans and this Special Provision, and all labor, system integration, testing, system documentation and miscellaneous materials necessary for a complete and accepted installation. It shall also include but is not limited to the cabinet and all interior materials, mounting hardware foundations, external conduit entrances including conduit bodies and nipples, electrical service and pole grounding terminations.

ITS Equipment Cabinet modifications, complete in place, tested, and accepted, will be measured per each installation. Such measurement shall be inclusive of all materials, mounting hardware, fiber splicing identified in the notice to bidders for each cabinet being modified.

907-637.05--Basis of Payment. Equipment Cabinet and Equipment Cabinet Modifications, measured as prescribed above, will be paid for at the contract unit price per each, which shall be full compensation for the labor, tools, materials, equipment and incidentals necessary to complete the work.

Progress payments for Equipment Cabinets will be paid in accordance with the following:

- 1) 40% of the contract unit price for delivery of the cabinet housings;
- 2) An additional 40% of the contract unit price for complete installation of equipment cabinet and all interior components, electrical service feed (activated), interior cabinet components, all conduit entrances, grounding connection, and testing;
- 3) An additional 10% of the contract unit price for completion of Stand Alone Site Test of all field devices housed or connected to the equipment cabinet; and
- 4) Final 10% of the contract unit price upon Final System Acceptance.

Payment will be made under:

- 907-637-A: Equipment Cabinet, Type ___ -per each
- 907-637-B: ITS Equipment Cabinet Modifications ___ -per each

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-639-2

CODE: (SP)

DATE: 5/23/2008

SUBJECT: ITS Equipment Poles

Section 639, Traffic Signal Equipment Poles, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

Delete in total Section 639 beginning on page 481, and substitute the following:

SECTION 907-639--ITS EQUIPMENT POLES

907-639.01--Description. This Section specifies the minimum requirements for equipment poles and foundations furnished and installed to support Intelligent Transportation Systems (ITS) equipment. This work shall consist of assembling, constructing, erecting and installing galvanized steel camera poles with foundations, in conformity with these specifications and in accordance with the design(s) shown on the plans or as directed.

907-639.02--Materials. The materials used in this construction shall conform with the general requirements of these specifications and the specific requirements set out hereunder.

907-639.02.1--Galvanized Steel Poles for Cameras. Camera poles and foundations, conduits, connections, clamps, anchor bolts, shoe bases and all other members shall be designed and fabricated in accordance with the standards and requirements listed below. Design and materials documentation shall be furnished as part of the approval request submittal. Certifications will be furnished upon request by the Engineer.

- 1) Poles shall be designed in accordance with the AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals", current edition, including all interims and updates. Design life shall be 50 years for all poles. Poles shall be designed to withstand the specified forces including those produced by a 100 mph wind with a 1.14 gust effect factor.
- 2) The Contractor shall submit manufacturer's shop drawings, layout drawings and specifications for equipment and appurtenances for approval by the Engineer no later than ninety (90) days after notice to proceed.
- 3) Pole fabricator shall be certified under Category I, "Conventional Steel Structures" as set forth by the American Institute of Steel Construction Quality Certification Program. Proof of this certification will be required.
- 4) All welding shall be in accordance with Sections 1 through 8 of the American Welding Society (AWS) DI. 1 Structural Welding Code. Tackers and welders shall be qualified in accordance with the American Welding Society Structural Welding code. Tube longitudinal seam welds shall be free of cracks and excessive undercut, performed with

automatic processes, and be visually inspected. Longitudinal welds suspected to contain defects shall be magnetic particle inspected. All circumferential butt welded pole and arm splices shall be ultrasonically and radio graphically inspected. All inspection records will be furnished to the Engineer.

- 5) Camera pole system shall consist of a pole, anchor bolts, base plate, ground rod array, communication and power conduits to nearest pull box, grounding conduit, spare conduit and foundation.
- 6) Design computations for the camera poles shall be complete and shall include but not be limited to the following:
 - a. Consideration shall be given for all parts of the structure.
 - b. Consideration shall be given for all possible loading combinations including wind and ice loads.
 - c. Computations shall include design stresses and allowable stresses for all components which comprise the proposed structure.
 - d. Top of pole deflection shall not exceed 1 inch deflection from center (2 inch deflection diameter) due to 30 mph (non-gust) winds for the 50 foot poles.
 - e. All complete shop drawings and design computations shall bear the stamp of a Professional Engineer registered in the State of Mississippi.
 - f. Shop drawings shall be approved by the Engineer prior to fabrication. Approval of the shop drawings does not relieve the Contractor of responsibility for the design, fabrication and erection of the structure.
 - g. The Engineer reserves the right to reject a pole design if the calculated deflection exceeds that specified herein.
 - h. The foundation design shall be based on actual soil conditions from soil borings conducted by the Contractor. The cost of the soil borings shall be included in the cost of the pole.
 - i. The calculations shall include a pole, base plate, and anchor bolt analysis. The pole calculations shall be analyzed at the pole base, 5 foot pole intervals, and at each slip joint splice.
- 7) For each pole shown in the Plans, the following information shall be given:
 - a. The pole's diameter, thickness, section modulus, moment of inertia, and cross sectional area.
 - b. The centroid, weight, projected area, drag coefficient, velocity pressure, and wind force of each trapezoidal pole segment.
 - c. The axial force, shear force, primary moment, total moment, axial stress, bending stress, allowable axial stress, allowable bending stress, and combined stress ratio (CSR) at each elevation.
 - d. The pole's angular and linear deflection at each elevation.
- 8) Pole Mounted Cabinet Access Conduit Nipple:
 - a. Each pole will be manufactured with a 2" diameter rigid threaded nipple for conduit connection to a pole-mounted cabinet.
 - b. The height of this nipple above the base of the pole shall be such that a cabinet mounting height of 3 feet above ground can be provided.
- 9) Hand Holes:
 - a. Hand hole openings shall be reinforced with 2" wide hot rolled steel bar. The opening shall be rectangular and 5" x 8" nominal.

- b. The cover shall be 11-gauge steel and shall be secured to a clip-on lock with a tamper-proof screw.
 - c. The reinforcing rim shall be provided with a ½” tapped hole and ½” hex head cap screw for grounding.
 - d. Hand holes on poles with pole-mounted cabinets and transformers shall be placed toward oncoming traffic. For all other poles, hand holes shall face away from traffic.
- 10) Cable Supports (J-Hooks & Eyelets): Top and bottom J-hooks and eyelets shall be located within the pole directly aligned with each other.
- 11) Base Plate:
- a. Base plates shall conform to ASTM A572.
 - b. Plates shall be integrally welded to the tubes with a telescopic welded joint or a full penetration butt weld with backup bar.
 - c. Plates shall be hot dip galvanized.
- 12) Anchor Bolts:
- a. Anchor bolts shall conform to the requirements of AASHTO M314-90 (105 ksi min. yield.) The upper 12” of the bolts shall be hot dip galvanized per ASTM A153.
 - b. Each anchor bolt shall be supplied with two (2) hex nuts and two (2) hardened washers.
 - c. The strength of the nuts shall equal or exceed the proof load of the bolts.
 - d. The top nut shall be torqued so as to produce 60% yield stress of anchor bolt.
 - e. The Contractor shall not grout between bottom of base plate and top of concrete foundation.
- 13) Pole heights shall be as indicated on the plans.

907-639.02.2--Galvanized Steel Poles for Detectors. Detector poles and foundations, conduits, connections, clamps, anchor bolts, shoe bases and all other members shall be designed and fabricated in accordance with the standards and requirements listed below. Design and materials documentation shall be furnished as part of the approval request submittal. Certifications will be furnished upon request by the Engineer.

- 1) Poles shall be designed in accordance with the AASHTO “Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals”, current edition, including all interims and updates. Design life shall be 50 years for all poles. Poles shall be designed to withstand the specified forces including those produced by a 100 mph wind with a 1.14 gust effect factor.
- 2) The Contractor shall submit manufacturer’s shop drawings, layout drawings and specifications for equipment and appurtenances for approval by the Engineer no later than ninety (90) days after notice to proceed.
- 3) Pole fabricator shall be certified under Category I, “Conventional Steel Structures” as set forth by the American Institute of Steel Construction Quality Certification Program. Proof of this certification will be required.
- 4) Poles shall be formed from a single sheet of hot rolled weldable grade steel, galvanized in accordance with ASTM Designation: A 123.
Unless otherwise noted on the plans, poles shall be made from steel meeting the requirements of ASTM Designation: A 572 Grade 55, or A 595 Grade A. Minimum yield strength shall be 48,000 psi after fabrication. Design wind loading shall be as indicated on the plans. The pole shall meet design wind loading with detector(s) installed.

- 5) Poles shall have a constant taper of 0.14 inch nominal per foot.
- 6) All poles shall be equipped with a breakaway device which conforms to the latest AASHTO and FHWA requirements, which have been approved by same. The Contractor shall submit a manufacturer's certification with the pole shop plans stating that the device meets, or exceeds, these standards.
- 7) Pole heights shall be as indicated on the plans.
- 8) Detector pole system shall consist of, but not be limited to a pole, anchor bolts, breakaway base, base plate, ground rod array, communication and power conduit to nearest pull box, grounding conduit, spare conduit and foundation as shown on the Plans.
- 9) Anchor bolts, washers and hex nuts shall be made of steel in accordance with ASTM Designation: F 1554, Grade 55, and shall be galvanized as per ASTM Designation: A 153. Anchor bolts shall be provided for each pole with two (2) hex nuts and washers per bolt. Anchor bolts shall be "L" shaped; minimum yield strength shall be 50,000 psi. A bolt layout template shall be provided by the manufacturer for proper bolt installation. The number of anchor bolts and design yield strength shall be as recommended by the manufacturer.

907-639.02.3--Foundations. Cast-in-place foundations for steel poles shall be as specified on plans, and shall be cast of reinforced Class "B" Concrete conforming to the requirements of Sections 601 and 602. Anchor bolts, washers and hex nuts for use in the foundation shall conform to Subsections 907-639.02.1 and 907-639.02.2. Conduit for electric cable and and fiber optic cable shall comply with the requirements for such materials as set out in Subsection 722.05.

907-639.03--Construction Requirements. All equipment shall be installed according to the manufacturer's recommendations. Materials and associated accessories/adapters shall not be applied contrary to the manufacturer's recommendations and standard practices. Camera and detector pole systems shall be installed as indicated on the Plans and shall conform to the following requirements:

- 1) All poles shall be installed in accordance with the National Electric Safety Code and the latest AASHTO standards.
- 2) Foundations:
 - a. The Contractor shall submit a design for each pole foundation that has been sealed by a Professional Engineer registered in the State of Mississippi.
 - b. Excavation for concrete foundations shall be opened vertically in accordance with the methods of Section 206 with a tolerance of plus two inches from neat lines and grades as shown on the Plans or required by local conditions. Adjacent earth shall be compacted sufficiently to withstand the loadings set out in Subsections 907-639.02.1 and 907-639.02.2.
 - c. If soil conditions require the use of any shoring, casings, or sonotube for proper installation of the foundations, the cost of the shoring, casings or sonotube shall be included in the cost of the pole and foundation.
 - d. Before placing concrete, the Contractor shall place reinforcing bars, conduit and anchor bolts, all in accordance with plan details, and held rigidly in place by approved methods.

- e. Concrete foundations shall be formed, cast and cured in accordance with the provisions of Section 601. The top surface shall be finished smooth, and sloped to drain.
 - f. Concrete shall cure a minimum of 7 days before any load is applied to the foundation.
 - g. Conduit shall be installed in the pole foundation for access and includes conduit to the nearest pull box as shown in the Plans.
 - h. A minimum of one 2-inch spare conduit shall be installed in all pole foundations as shown in the Plans. Spare conduits in pole foundations shall be sealed with blank duct plugs.
- 3) Grounding System:
- a. The Contractor shall supply and install a grounding system with ground rod array at the base of all poles as shown on the Plans.
 - b. The ground rod array system shall be connected to the pole through an appropriate ground clamp.
 - c. A #6 AWG copper stranded bonding wire shall be installed between the pole and the field cabinet providing a common ground system for each site.
 - d. All ground bonding wires shall be un-spliced.
- 4) The installation method for the CCTV poles and cameras shall be such that the camera can be rotated as needed around the pole for optimum placement.

907-639.04--Method of Measurement.

907-639.04.1--Camera Pole with Foundation. Camera pole with foundation will be measured as a unit quantity per each. Such measurement shall include but is not limited to a steel pole, foundation, conduit inside foundation and to nearest pull box as indicated on the Plans, wiring between camera and field cabinet, connections to support structures, satisfactory completion of testing and training requirements, and all work, equipment and appurtenances as required to effect the full operation including remote and local control of the camera site complete in place and ready for use.

907-639.04.2--Detector Pole with Foundation. Detector pole with foundation will be measured as a unit quantity per each. Such measurement shall include but is not limited to a steel pole, breakaway base, foundation, conduit inside foundation and to nearest pull box as indicated on the Plans, wiring between detector and field cabinet, connections to support structures, satisfactory completion of testing and training requirements, and all work, equipment and appurtenances as required to effect the full operation including remote and local control of the detector site complete in place and ready for use.

Progress payments may be measured in accordance with the following:

- 1) 25% of the contract unit price upon complete installation of foundations;
- 2) Additional 45% of the contract unit price upon delivery of poles or structure to the site; and
- 3) Final 30% of the contract unit price upon complete installation of pole system.

907-639.05--Basis of Payment. Camera pole with foundation and detector pole with foundation, measured as provided in above, will be paid for at the contract unit price per each, which price shall be full compensation for furnishing all materials, for excavating, backfilling, replacing sod, and for all constructing, placing, curing, erecting, installing, connecting and testing; for foundations, poles, pole bases, caps, covers, ground wire, ground rods, hardware and for all equipment, tools, labor and incidentals necessary to complete the work.

Payment will be made under:

907-639-E: Camera Pole with Foundation, ___ Pole - per each

907-639-F: Detector Pole with Foundation, ___ Pole - per each

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-639-4

CODE: (SP)

DATE: 04/10/2009

SUBJECT: Traffic Signal Equipment Poles

Section 639, Traffic Signal Equipment Poles, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-639.02--Materials.

907-639.02.2--Mast Arms. Delete the sentence in Subsection 639.02.2 on page 481 and substitute the following:

Mast arms and mast arm extensions shall be steel meeting the requirements of Subsection 722.16.

907-639.02.3--Foundations. Delete the first sentence Subsection 639.02.3 on page 481 and substitute the following:

Cast-in-place foundations for concrete, steel, and/or aluminum shafts shall be as specified on plans, and shall be cast of reinforced Class "B" Concrete conforming to the requirements of Sections 601 and 602, unless otherwise indicated on the plans.

907-639.03.1--Foundations. Before the first paragraph of Subsection 639.03.1 on page 481, add the following:

Pole foundations shall be constructed as per the details on the plans, these specifications, and Section 803 of the Standard Specifications. Casings, if required, will be in accordance with Section 803 of the Standard Specifications.

In the first sentence of the first paragraph of Subsection 639.03.1 on page 481, change "Section 206" to "Section 801".

After the first paragraph of Subsection 639.03.1 on page 482, add the following:

Due to the soil conditions in certain areas, the plans may indicate locations where the concrete shall be placed with a tremie. When a tremie is used, it shall perform in accordance with the requirements in Subsection 804.03.9 of the Standard Specifications.

In some instances, it may be necessary to use slip casing to keep the holes open. Casing may be required in portions of the holes that are not stable. Casings authorized by the Engineer shall be of suitable size and strength to accommodate the drilling equipment and to withstand ground-pressures and removal operations without deformation of the poured shaft. When removed, the

casings shall revert to the Contractor for disposal.

907-639.04--Method of Measurement. Delete the first and second paragraphs of Subsection 639.04 on page 482, and substitute the following:

Traffic signal equipment pole of the type specified will be measured as unit quantities per each. Such measurement shall include the pole, mast arms and all other incidentals necessary to complete the equipment pole.

Traffic signal equipment pole shaft extension of the type specified will be measured as a unit quantity per each. Such measurements shall include the pole attachment, shaft, and all other mounting attachments necessary to extend a shaft as required in the plans

Pole foundations of the size specified will be measured by the cubic yard, which measurement shall be the area bounded by the vertical planes of the neat lines of the foundation.

Slip casings of the size specified will be measured by the linear foot from the ground elevation to the bottom of the strata needing to be cased.

Traffic signal equipment pole mast arm extension, as indicated, will be measured as a unit quantity per each. Such measurements shall include the mast arm extension and all other mounting attachments necessary to extend the arm as indicated.

907-639.05--Basis of Payment. Delete the first paragraph of Subsection 639.05 on page 482, and substitute the following:

Traffic signal equipment pole and traffic signal equipment pole extension of the type specified, measured as provided in above, will be paid for at the contract unit price per each, which price shall be full compensation for furnishing all materials, erecting, installing, connecting and testing poles, pole bases, mast arms, caps, covers, ground wire, ground rods, hardware and for all equipment, tools, labor and incidentals necessary to complete the equipment pole.

Pole foundations, measured as prescribed above, will be paid for at the contract unit price per cubic yard, which price shall include full compensation for structure excavation, reinforcing steel, anchor bolts; for placing, curing, and installing concrete; for replacing sod and final clean-up; and for all equipment, labor, tools and incidentals necessary to complete the foundation.

Slip casings, measured as prescribed above, will be paid for at the contract price per linear foot, which price shall be full compensation for all materials, tools, equipment, labor, and incidentals necessary to complete to work.

Traffic signal equipment pole mast arm extension, measured as provided above, will be paid for at the contract unit price per each, which price shall be full compensation for furnishing all materials, for installing the mast arm extension and for all equipment, tools, labor, and incidentals necessary to complete the work.

Delete the list of pay items on page 482, and substitute the following:

- 907-639-A: Traffic Signal Equipment Pole, Type _____ - per each
- 907-639-B: Traffic Signal Equipment Pole Shaft Extension, Description - per each
- 907-639-C: Pole Foundations, _____ Diameter - per cubic yard
- 907-639-D: Slip Casing, _____ Diameter - per linear foot
- 907-639-G: Traffic Signal Equipment Pole Mast Arm Extension * - per each

* Additional information may be indicated

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-650-6

CODE: (SP)

DATE: 01/29/2013

SUBJECT: On-Street Video Equipment

Section 650, On-Street Video Equipment, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

Delete in total Section 650 beginning on page 537, and substitute the following:

907-650.01--Description. This Section specifies the minimum requirements for CCTV Camera Systems furnished and installed on this project. The CCTV Camera System will provide TMC personnel with live streaming video of the roadway network via CCTV Camera Systems installed at locations shown in the Plans. The CCTV Camera System will include both fixed and PTZ cameras as called for on the Plans.

907-650.02--Materials. All materials furnished, assembled, fabricated or installed shall be new, corrosion resistant and in strict accordance with all of the details shown in the Plans and described in this Special Provision.

Support equipment for the CCTV Camera Systems shall be provided in a Type B ITS Equipment Cabinet as described in Section 637 of these specifications and as shown on the plans.

The CCTV Camera System shall comply with the following minimum materials specifications:

907-650.02.1--General Capabilities and Performance Requirements. Overall CCTV Camera System capabilities and performance requirements include the following:

- 1) CCTV PTZ Dome Cameras shall be placed at fixed locations as shown on the Plans to provide full coverage within the project limits including mainline travel lanes and shoulders.
- 2) CCTV Fixed Cameras shall be placed at fixed locations as shown on the Plans to provide coverage of the mainline travel lanes. The cameras shall be provided with a varifocal lens which shall be adjusted by the Contractor for the desired view of the mainline. At major intersections additional fixed cameras shall be adjusted to the desired view of the surface streets. The Contractor shall record the adjusted views for five minutes and submit to the MDOT ITS Engineer or his designee for approval and the MDOT Project Engineer. This recording shall be in a format playable with Windows Media Player or pre approved by MDOT ITS Engineer.
- 3) The CCTV Camera System components shall be compatible with each other and be of rugged design and suitable for reliable operation when mounted in the configuration as specified in this Special Provision and the Plans.

- 4) The Dome PTZ and the Fixed cameras shall be either Analog or Ethernet IP-based as indicated in either project plan sheets or Notice to Bidders or should be assumed analog if description isn't provided.
- 5) The CCTV Camera System shall be capable of attended and unattended, continuous 24 hours per day operation at the sites as shown on the Plans.
- 6) The Contractor shall ensure that the installed equipment provides unobstructed video of the roadway, traffic, and other current conditions around a roadside CCTV field site; that it responds to camera control signals from an operator of the system; and that the video images can be transmitted to remote locations interfaced to the system for observation.
- 7) PTZ and IP based cameras shall be capable of being remotely controlled and programmed.
- 8) All PTZ enclosures shall be provided with the ability to be pressurized for environmental protection.
- 9) The Dome camera shall be mounted together with the zoom lens and integrated into the pan and tilt device within the dome enclosure forming a totally integrated, easily removable assembly.
- 10) All cameras shall include a high quality integrated camera/lens combination.
- 11) The camera shall also be equipped with an auto-iris lens capability compatible with the zoom lens supplied.
- 12) Iris capability shall include a provision for manual override via software.
- 13) The Dome camera shall be capable of auto-focus during zoom-in or zoom-out, with provisions for override via software.
- 14) Overexposure protection shall be provided - the camera shall not be degraded or damaged under normal reasonable operating conditions.
- 15) The capability for local control of pan, tilt and zoom functions shall be provided at the roadside cabinet using vendor-supplied software installed on a laptop computer.
- 16) All CCTV cameras shall support the NTCIP 1205 v1.08 or later version if backward compatible communication protocol.

907-650.02.2--Analog Camera Unit. The minimum Camera Unit requirements include:

- 1) The camera unit shall incorporate solid-state design and provide digital signal processing (DSP) capable of providing clear and low-bloom color video pictures during daylight hours and monochrome video at night when the roadway is illuminated with minimal roadway lighting.
- 2) The Analog Camera shall be fully compliant with all aspects of the National Television Standards Committee (NTSC) specification, and produce NTSC compatible video.
- 3) The Analog camera shall operate over wide dynamic light conditions ranging from low light/dusk to full sunlight having day (color)/night (monochrome) switchover and iris control, with user-selectable manual and automatic control capabilities.
- 4) The camera unit shall be equipped with a low light level sensor to automatically switch the camera to Black and White mode.
- 5) The camera unit shall be equipped with an override capability to allow the camera to be manually switched via software to turn off the automatic low light level sensor switch feature for Color or Monochrome operation.

- 6) Image sensor: 1/4-inch charge-coupled device (CCD) employing digital video signal processing (DSP) technology with a minimum Effective Picture Elements of 768 horizontal x 494 vertical pixels.
- 7) The camera unit shall include integrated image stabilization.
- 8) Sensitivity: The camera shall maintain usable video under both day and nighttime lighting conditions.
- 9) Video output synchronization shall be 2 to 1 interlace and will observe the NTSC (color) and EIA RS-170 (black and white) standards.
- 10) Resolution: 470 lines horizontal and 350 TV lines vertical, NTSC equivalent.
- 11) Signal-to-noise ratio: 48 dB, minimum with AGC off, un-weighted, and 4.5MHz filter.
- 12) Video Signal Format: National Television Standards Committee (NTSC) composite video output of 1 Volt_{p-p} at 75 ohms, unbalanced.

907-650.02.3--Internet Protocol IP Camera Unit. IP cameras shall provide the same functionality as the analog camera units specified in Subsection 907-650.02.2, in addition to the following minimum requirements:

- 1) Power over Ethernet (IEEE802.3af) or 24 VAC Power Input.
- 2) Open Architecture.
- 3) Shall utilize H.264 (Video Coding Experts Group (VCEG)/Moving Picture Experts Group) Video Compression Technology types as directed by the Intelligent Transportation Systems Program Manager
- 4) Shall be capable to take video snapshots in JPEG format and transfer image via FTP.
- 5) IP encoded streams and Video Compression Technology shall be compatible with the existing video streaming servers and decoders for the MSTraffic.com WEB site or as approved by the Intelligent Transportation Systems Program Manager.
- 6) Shall be capable of 2 Simultaneous Video Streams.
- 7) Internet Protocols: TCP, UDP (Unicast, Multicast IGMP V2), UPnP, DNS, DHCP, RTP, NTP
- 8) Support Real Time Streaming Protocol (RTSP)
- 9) Multilevel Password Protection.
- 10) EDR (Extended Dynamic Range).
- 11) C/CS Lens Mount.
- 12) Backlight Compensation.
- 13) Horizontal Resolution of 480 TV Lines.
- 14) Low Profile Top/Bottom Mount.
- 15) BNC Service Connector. Tap shall be installed inside cabinet.

907-650.02.4--Dome Camera Lens. The minimum camera lens requirements include:

- 1) The camera lens shall have a minimum F-Stop of 1.4 to 1.6.
- 2) Optical and Digital Zoom: Shall provide an optical zoom of 35X.
- 3) Zoom Control: The zoom magnification shall be fully controllable via the remote PTZ mechanism. The time to pass through the full range of movement of Iris, Zoom and Focus shall in no case exceed 10 seconds.

- 4) Iris and Focus: Support automatic iris and focus control with manual override capability. The iris shall be in a closed position when there is no power.
- 5) White or Color Balance: Support automatic or set to yield optical results under various outdoor lighting conditions.
- 6) Shutter Speed: Support automatic or set to yield optimal results under low lighting conditions without blooming or smearing, auto-iris on. Provide electronic shutter that is selectable in steps.
- 7) The lens shall be equipped for continuous remote control of zoom, focus and iris.
- 8) Mechanical or electrical means shall be provided to protect motors from overrunning in extreme positions.
- 9) The zoom lens shall be an integrated camera/lens combination.
- 10) Vibration or ambient temperature changes shall not affect the automatic iris function, focus mechanism and zoom mechanism.
- 11) The lens shall be optically clear, impact resistant and acrylic. The acrylic lens shall not yellow and shall not introduce appreciable light loss or geometric distortion over a 10-year service life when exposed to the environment.
- 12) The zoom mechanism shall be designed for maintenance-free operations. All gearing and bearings shall be self-lubricating with lubrication and gearing tolerances compatible with the environmental specifications contained herein.

907-650.02.5--Character Generator. The minimum character generator requirements include:

- 1) The capability of generating and superimposing lines of English language text on the video image/stream shall be provided.
- 2) A minimum of 20 characters per line that are between 10 and 30 horizontal TV lines in height shall be provided.
- 3) Control (enable, disable and edit) of this feature shall be available remotely and at the field site using a laptop computer.
- 4) The text messages shall be stored in non-volatile memory.
- 5) Characters shall be white with a black border to ensure legibility in varied scenes.
- 6) The following minimum text insertion requirements shall be provided with the ability to individually turn each one on or off:
 - a. Camera ID
 - b. Sector Message
 - c. Alarm Messages
 - d. Pan/Tilt Azimuth/Elevation
 - e. Compass Direction in 8 discreet zones

907-650.02.6--Dome Enclosure. The minimum dome enclosure requirements include:

- 1) Sealed, pressurized dome enclosure that provides complete protection for the camera and lens assembly from moisture and airborne contaminants.
- 2) Environmental resistant and tamper proof meeting NEMA 4X or IP-67 rating requirements.
- 3) The dome enclosure shall be constructed in such a way that unrestricted camera views can be obtained at all camera and lens positions.

- 4) Dome environmental control shall be provided by nitrogen pressurization with a Schrader Valve for pressurization and purging. The enclosure shall be designed to be pressurized to the manufactures recommended level .with dry nitrogen. The notation “CAUTION – PRESSURIZED” shall be printed on the rear plate of the enclosure and shall be clearly visible and readable.
- 5) An alarm shall be displayed under low-pressure conditions and displayed on the camera video. The low-pressure alarm shall be on/off selectable by the operator at the TMC.
- 6) The dome enclosure shall consist of a two-piece (upper and lower half) dome.
- 7) A harness and cables shall be provided with each enclosure to extend the video, power and data from the CCTV Camera System to the field cabinet. No harness shall be exposed. All entry points shall have gaskets to prevent moisture entry. A sealed connector shall be at the top of the dome.
- 8) The dome enclosure shall assist in preventing lens fogging and effectively reduce internal temperatures.
- 9) The enclosure shall minimize glare and provide overexposure protection for the camera when pointed directly at the sun.
- 10) The enclosure shall be equipped with a heater, a defroster and a thermostat.
- 11) The camera equipment inside the dome enclosure shall meet all its specified requirements when operating under the following conditions:
 - a. Ambient Temperatures: -34°C to +50°C (-30°F to +122°F). A heater/blower shall be used to maintain internal dome temperatures within the manufacturer required operating temperatures for their equipment.
 - b. Relative Humidity: 5% and 95%, non-condensing.
- 12) Total weight of CCTV cameras (including the housing, sunshield, and all internal components shall be less than 18 pounds.
- 13) At a minimum, dome enclosures shall be secured with a mounting plate/attachment designed to withstand a 90 mph sustained wind speed with a 30% gust factor. For projects that are in areas with higher wind standards, the higher standard is required.

907-650.02.7--Pan and Tilt Unit (PTU). The minimum pan and tilt unit requirements include:

- 1) The motorized, remotely controlled Pan/Tilt unit shall be mounted within the dome enclosure. The unit shall be integrated with the CCTV control system.
- 2) The unit shall provide continuous tilt (vertical) movement of 90 degrees from horizontal and continuous pan (horizontal) movement of 360 degrees.
- 3) Tilt speed shall be variable from zero up to 40 degrees per second, minimum, and the pan speed shall be variable from zero up to 80 degrees per second, minimum.
- 4) The unit shall be capable of simultaneous pan, tilt movements and zoom on one camera
- 5) Drive motors shall be capable of instantaneous reversing, be corrosion resistant, not require lubrication, and have overload protection.
- 6) Braking shall be provided in both pan and tilt movements to enable fast stop and reversal and to prevent drifting.
- 7) The viewing limits shall be set by a minimum of 8 discreet privacy zones that are software selectable.

907-650.02.8--Camera Control Receiver – Driver. The minimum camera control receiver-driver requirements include:

- 1) The camera control receiver shall provide a single point interface for control, power and video communications.
- 2) The camera control receiver-driver shall be included within the dome enclosure and control the camera, pan/tilt and lens functions at each CCTV site.
- 3) The unit shall provide alphanumeric generation for on-screen titles.
- 4) The unit shall provide the ability to display diagnostic information on the screen in response to user commands.
- 5) The diagnostic information shall include current pan, tilt, zoom and focus positions, and error codes for power, communication, position and memory problems.
- 6) The capability for programmed tours shall be provided.
- 7) The camera control receiver shall use non-volatile memory to store the required information for presets, camera ID and sector text.
- 8) Presets shall meet the following requirements:
 - a. A minimum of 64 presets shall be supported. Each preset shall consist of pan, tilt, zoom and focus positions.
 - b. The Contractor shall develop and install ten (10) presets for each camera. The Contractor shall submit the preset locations to the MDOT ITS Engineer for review and approval.
- 9) Protocols: CCTV cameras shall support at a minimum the Pelco D and the NTCIP 1205 v1.08 communication protocol. No camera control receiver-driver shall use non-published protocols. The Contractor shall provide protocol documentation.
- 10) Communications Interface: The communications interface shall support communications compliant with RS-422 and/or 485 (user selectable).
- 11) The communications interface shall be compatible with the Video Encoder serial port as defined in Section 907-662 of these Specifications.
- 12) Standard interface connectors shall be provided.
- 13) The video input and output connections shall be the BNC type.
- 14) Connector(s) shall also be used for connecting the control outputs from the control receiver-driver unit to the camera, lens and pan/tilt mechanisms.

907-650.02.9--Fixed Camera Lens.

- | | |
|------------------------------|---------------------|
| 1) Type: | Varifocal |
| 2) Format Size: | 1/3 Inch |
| 3) Mount Type: | CS |
| 4) Focal Length: | 5-50 |
| 5) Zoom Ratio: | 1.4 -360 |
| 6) Relative Aperture (F): | 1.6-360 |
| 7) Iris: | Auto (Direct Drive) |
| 8) Focus: | Manual |
| 9) Zoom: | Manual |
| 10) Minimum Object Distance: | 0.5 m |
| 11) Back Focal Length: | 10.05 mm |

- 12) The camera lens shall have a minimum F-Stop of 1.4 to 1.6.
- 13) Shall provide a varifocal zoom of 5-50 mm.
- 14) Iris: Support automatic iris control with manual override capability. The iris shall be in a closed position when there is no power.
- 15) White or Color Balance: Support automatic or set to yield optical results under various outdoor lighting conditions.
- 16) Shutter Speed: Support automatic or set to yield optimal results under low lighting conditions without blooming or smearing, auto-iris on. Provide electronic shutter that is selectable in steps.
- 17) Vibration or ambient temperature change shall not affect the automatic iris function, focus mechanism or zoom mechanism.
- 18) The lens shall be optically clear, impact resistant and acrylic. The acrylic lens shall not yellow and shall not introduce appreciable light loss or geometric distortion over a 10-year service life when exposed to the environment.

907-650.02.10--Fixed Camera Enclosure.

- 1) Designed for Outdoor Applications
- 2) Maintenance access for servicing
- 3) Environmental resistant and tamper proof meeting NEMA 4X or IP-66 rating requirements.
- 4) A harness and cables shall be provided with each enclosure to extend the video, power and data from the CCTV Camera System to the field cabinet. No harness shall be exposed. All entry points shall have gaskets to prevent moisture
- 5) The enclosure shall minimize glare and provide overexposure protection for the camera when pointed directly at the sun.
- 6) The enclosure shall be equipped with a heater, a defroster and a thermostat.
- 7) The camera equipment inside the enclosure shall meet all its specified requirements when operating under the following conditions:
 - a. Ambient Temperatures: -10°C to +50°C (14°F to +122°F). A heater/blower shall be used to maintain internal temperatures within the manufacturer required operating temperatures for their equipment.
 - b. Relative Humidity: 5% and 95%, non-condensing.
- 8) Total weight of CCTV cameras (including the housing, sunshield, and all internal components shall be less than 18 pounds.
- 9) The enclosure shall be secured with a mounting plate/attachment designed to withstand a 90 mph sustained wind speed with a 30% gust factor. For projects that are in areas with higher wind standards, the higher standard is required.

907-650.02.11--Electrical. The minimum electrical requirements include:

- 1) The CCTV Camera System shall be furnished with any and all equipment required for a fully functional system, including all appropriate power and communications cables as defined by the manufacturer.
- 2) The power cables shall be sized to meet the applicable National Electrical Code (NEC) requirements.

- 3) Total power consumption shall not exceed 125 watts.
- 4) All devices supplied as system components shall accept, as a primary power source, 120 volts of alternating current (VAC) at an input of 60 hertz. Any device that requires source input other than 120 VAC at 60 hertz, such as cameras, PTUs, receiver/drives and dome heaters/blowers that operate at 24 volts or other, shall be furnished with the appropriate means of conversion.
- 5) IP fixed cameras shall receive Power over Ethernet (POE) with appropriate cabling.

907-650.02.12--Coaxial Cabling. The minimum coaxial interconnect cable requirements include:

- 1) The coaxial cable from the CCTV Camera System to the equipment cabinet shall be Belden 8281 or approved equivalent.
- 2) RG 59/U, 20AWG, bare copper conductor, polyethylene insulation.
- 3) 98% tinned copper, double braid shield, black polyethylene jacket.
- 4) Characteristic Impedance: 75 ohms, nominal.
- 5) Capacitance (conductor to shield): 21pF/ft; Inductance: 0.131uH/ft, nominal.

907-650.02.13--Surge Protection. All CCTV Camera System electrical interconnects shall be protected from voltage surges caused by lightning and external electromagnetic fields. The minimum surge protection requirements include:

- 1) Surge protectors shall be furnished for all non-dielectric cable and conductors (video, data/signal and device/assembly power) between the CCTV Camera System and the equipment cabinet.
- 2) The surge protectors shall have leads that are kept to a minimum length as recommended by the surge device manufacturer.
- 3) All surge protection devices shall be designed to meet the temperature and humidity requirements expected in this type of outdoor application.
- 4) All Surge protectors shall be U.L. listed (UL 1449, UL 497, 497A, 497B, etc., as appropriate) and bonded to the same single-point ground point.
- 5) Coaxial Cable Surge protectors for coaxial cable shall meet/provide the following functionality:
 - a. Attenuation: 0.1dB @10 MHz, typical
 - b. Input/Output Impedance: 75 ohms nominal
 - c. Operating Voltage of the surge protector shall match characteristics of the ITS device/assembly
 - d. Peak Surge Current: 5,000-amperes for an 8x20 microsecond waveform
 - e. Response Time: 1 nanosecond or less
- 6) Low Voltage/Signal Cable Surge protectors for data/signal/control cable shall meet/provide the following functionality:
 - a. Peak Surge Current: 10,000-amperes for an 8x20 microsecond waveform
 - b. Response Time: 1 nanosecond or less
 - c. Life Expectancy: Capable of surviving at a minimum of 25 occurrences at 2000-amperes

- 7) CCTV power surge protectors for power from equipment cabinet power distribution to the CCTV Camera System shall meet/provide the following functionality:
 - a. Frequency: DC to 10MHz
 - b. Clamping Voltage: < 30VAC (rms) or 42VDC
 - c. Insertion Loss: < 0.2dB
 - d. Input/Output Impedance: 75 ohms, typical
 - e. Peak Surge Current: 3000-amperes
 - f. Response Time: 1 nanosecond or less
- 8) Surge protection for the IP Fixed cameras shall include provisioning for the Power over ETHERNET (POE) cabling and voltages.

907-650.03--Installation Requirements. All equipment shall be installed according to the manufacturer's recommendations, the Plans and as follows:

- 1) The Contractor shall provide the MDOT with a written inventory of items received and the condition in which they were received. Inventory shall be inclusive of make, model, and serial numbers, MAC address, and installation GPS coordinates. All equipment shall be installed according to the manufacturer's recommendations or as directed by the MDOT.
- 2) Materials and associated accessories/adapters shall not be applied contrary to the manufacturer's recommendations and standard practices.
- 3) Shall include all materials needed to permanently mount the CCTV camera to the support structure as indicated in the plans.
- 4) Furnish and install power, video, and data cables, and any and all ancillary equipment required to provide a complete and fully operational CCTV system site.
- 5) Verify all wiring meets NEC requirements where applicable.
- 6) All above requirements apply to both new CCTV sites as well as sites where an existing CCTV is being replaced under the contract.
- 7) Any new, additional or updated drivers required for the existing ATMS software to communicate and control new CCTV installed by the Contractor shall be the responsibility of the Contractor.

907-650-03.1--CCTV Test Requirements. The Contractor shall conduct a Project Testing Program. All costs associated with the Project Testing Program shall be included in overall contract prices; no separate payment will be made for any testing.

- 1) The Contractor is responsible for planning, coordinating, conducting and documenting all aspects of the Project Testing Program. The Project Engineer, ITS Engineer, and/or their designee(s) are only responsible for attending and observing each test, and reviewing and approving the Contractor's test results documentation. The ITS Engineer, Project Engineer and/or their designee(s) reserve the right to attend and observe all tests. The Contractor is required to perform the final project acceptance test with the MDOT ITS Engineer or his designee present.
- 2) Each test shall fully demonstrate that the equipment being tested is clearly and definitely in full compliance with all project requirements. Test procedures shall be submitted and approved for each test as part of the project submittals. Test procedures shall include every action necessary to fully demonstrate that the equipment being tested is clearly and

- definitively in full compliance with all project requirements. Test procedures shall cross-reference to these Technical Specifications or the Project Plans. Test procedures shall contain documentation regarding the equipment configurations and programming.
- 3) No testing shall be scheduled until approval of all project submittals and approval of the test procedures for the given test.
 - 4) The Contractor shall provide all ancillary equipment and materials as required in the approved test procedures.
 - 5) The Contractor shall request in writing the Project Engineer's approval for each test occurrence a minimum of 14 days prior to the requested test date. Test requests shall include the test to be performed and the equipment to be tested. The Project Engineer reserves the right to reschedule test request if needed.
 - 6) All tests shall be documented in writing by the Contractor in accordance with the test procedure and submitted to the Project Engineer within seven (7) days of the test. Any given test session is considered incomplete until the Project Engineer has approved the documentation for that test session.
 - 7) All tests deemed by the Project Engineer to be unsatisfactorily completed shall be repeated by the Contractor. In the written request for each test occurrence that is a repeat of a previous test, the Contractor shall summarize the diagnosis and correction of each aspect of the previous test that was deemed unsatisfactory. The test procedures for a repeated test occurrence shall meet all the requirements of the original test procedures, including review and approval by the Project Engineer and ITS Program Manager or his designee.
 - 8) The satisfactory completion of any test shall not relieve the Contractor of responsibility to provide a completely acceptable and operating system that meets all requirements of this project.
 - 9) Standalone Acceptance Test (SAT). The Contractor shall perform a complete SAT on all equipment and materials associated with the field device site, including but not limited to electrical service, conduit, pull boxes, communication links (fiber, leased copper, wireless), control cables, poles, etc. An SAT shall be conducted at every field device site. Where applicable, a SAT shall be conducted for a fully installed and completed connection to the designated Traffic Management Center (TMC) or central data/video collection site.
 - 10) The SAT shall demonstrate that all equipment and materials are in full compliance with all project requirements and fully functional as installed and in final configuration. The SAT shall also demonstrate full compliance with all operational and performance requirements of the project. All SATs will include a visual inspection of the cabinet and all construction elements at the site to ensure they are compliant with the specifications.

907-662.03.2--Warranty. Minimum warranty requirements are as follows:

- 1) All warranties and guarantees shall be assigned to the Mississippi Department of Transportation.
- 2) The warranty shall be a **minimum of one (1) year warranty** per CCTV and all other installed and/or attached appurtenances.
- 3) The warranty period begins upon final acceptance of the video subsystem.
- 4) During the warranty period, the Contractor shall repair or replace with new or refurbished material, at no additional cost to the State, any product containing a warranty defect,

provided the product is returned postage-paid by the Department to the manufacturer's factory or authorized warranty site.

- 5) Products repaired or replaced under warranty by the manufacturer shall be returned prepaid by the manufacturer.
- 6) During the warranty period, technical support shall be available from the Contractor via telephone within **four (4) hours** of the time a call is made by the Department, and this support shall be available from factory certified personnel.
- 7) During the warranty period, updates and corrections to hardware, software and firmware shall be made available to the Department by the Contractor at no additional cost.

907-662.03.3--MDOT Employee Training. Minimum Training requirements are as follows:

- 1) The Contractor shall provide a camera system training plan that includes a schedule, documentation to be provided, identified trainer, and location at a minimum to MDOT Project Manager. The camera system training plan must be accepted by the MDOT Project Manager and ITS Engineer and training must be completed before burn in period may start.
- 2) The training shall be approved two (2) weeks ahead of the scheduled date.
- 3) For provided devices that MDOT already has the same make and model existing in the system:
 1. One (1) day of on site device operation, maintenance, and configuration training for up to 10 individuals.
 2. One (1) day of on site system training at TMC for up to 10 people, that is separate from above training and specifically for software control of integrated devices.
- 4) For provided devices that MDOT does not have the same make and model existing in the system:
 1. Three (3) days of on site device operation, maintenance, and configuration training for up to 10 individuals.
 2. Three (3) days of on site system training at TMC for up to 10 people, that is separate from above training and specifically for software control of integrated devices.

907-650.04--Method of Measurement. On-Street Video Equipment will be measured per each camera installation. Such measurement shall be inclusive of camera unit, housing, pan/tilt drive, receiver/driver, software driver, mounting hardware and any enclosures necessary. It shall also include any items necessary to mount the camera unit from a mast arm pole, steel strain pole, pole extension pipe, etc. Required cabinet facilities, including transformer and/or disconnects, will not be measured for separate payment.

907-650.05--Basis of Payment. On-Street Video Equipment, measured as prescribed above, will be paid for at the contract unit price bid per each, which price shall be full compensation for furnishing all materials, for all installing, connecting, cutting, pulling and testing and for all equipment, tools, labor and incidentals necessary to complete the work.

Progress payments for the On-Street Video System will be paid as follows:

- 1) 50% of the contract unit price upon delivery of equipment and approval of any bench and/or pre-installation test results, as prescribed in Project Testing Program;
- 2) An additional 40% of the contract unit price upon approval of Stand Alone Acceptance Test results; and
- 3) Final 10% of the contract unit price upon Final Project Acceptance.

Payment will be made under:

907-650-A: On-Street Video Equipment Type _____ - per each

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-657-6

CODE: (SP)

DATE: 01/09/2012

SUBJECT: Fiber Optic Cable (OSP)

Section 657, Fiber Optic Cable (OSP), of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

Delete in total Section 657 beginning on page 541, and substitute the following:

SECTION 907-657 -- FIBER OPTIC CABLE (OSP)

907-657.01--Description. The work shall consist of the construction of the infrastructure required to install fiber optic cable. The infrastructure shall include all necessary conduits, pull boxes, pole line hardware, building entries, risers and fiber cable to make a complete system.

907-657.02--Materials.

907-657.02.1--Single Mode Fiber Optic Cable (FO Cable). The Contractor shall provide 72-count fiber optic cable that meets the following requirements:

- All-dielectric, outside plant, loose tube cable with central strength/anti-buckling member
- Dry water blocking materials and construction
- Reverse oscillating "SZ" stranded buffer tube construction
- High tensile strength yarn
- Medium density polyethylene outer jacket
- 72-fiber cable with six (6) active buffer tubes and 12 individual stranded fibers per buffer tube
- Cable construction design that allows no more than six (6) buffer tube positions
- Maximum diameter 0.48 inches
- Maximum weight 0.07 pounds per foot.

The Contractor shall provide a Corning ALTOS All-Dielectric, Pirelli FlexLink, OFS MiDia, or approved equivalent cable. This cable shall be designated as a trunk cable.

The Contractor shall ensure that the cable can withstand a maximum pulling tension of 600 pounds (lbf) during installation and 180 pounds (lbf) installed long term (at rest).

The cable shall have a shipping, storage and operating temperature range of -30°C to +70°C and installation temperature range of -30°C to +60°C.

The Contractor shall provide cable with outer jacket marking using the following template:

Manufacturer's Name - "Optical Cable" - Month/Year of Manufacture - Telephone Handset Symbol - "MDOT" - "72F SM"

The Contractor shall include in the outer jacket marking the cable sequential length in accordance with the following:

- In English units every two (2) feet
- Within -0/+1% of the actual length of the cable
- In contrasting color to the cable jacket
- Marking font height no less than 0.10 inch
- On any single length of cable on a reel, the sequential length markings do not run through "00000"

907-657.02.2--Single Mode Fiber Optic Cable Indoor/Outdoor Riser Rated. The Contractor shall provide fiber optic plenum rated cable that meets the following requirements when called for on the Plans:

- All-dielectric, inside plant, loose tube central core cable
- High tensile strength yarn surrounding the central tube core
- Dry water blocking materials and construction
- 72-fiber cable with six (6) active buffer tubes and 12 individual stranded fibers per buffer tube
- Corning Freedom LST All-Dielectric, Pirelli Centralink, or approved equivalent cables shall be provided. This cable shall be designated as the building entry cable.

The Contractor shall ensure that the cable can withstand a maximum pulling tension of 300 pounds (lbf) during installation.

The cable shall have a shipping, storage and operating temperature range of -30°C to +70°C and an installation temperature range of -10°C to +60°C shall be provided.

The Contractor shall provide cable with outer jacket marking using the following template:

Manufacturer's Name - "Optical Cable" - Month/Year of Manufacture - Telephone Handset Symbol - "MDOT" - "72F SM"

The Contractor shall include in the outer jacket marking the cable sequential length in accordance with the following:

- English units every two (2) feet.
- Within -0/+1% of the actual length of the cable
- Contrasting color to the cable jacket
- Marking font height no less than 0.10 inch
- The sequential length markings do not run through "00000" on any single length of cable on a reel

907-657.02.3--Single Mode Fiber Optic Drop Cable (FO Drop Cable). The Contractor shall

provide 12-Fiber, Pre-Terminated Drop Cable Assemblies. These assemblies shall be employed when connecting a camera, traffic controller, DMS or other device to the main cable.

Assemblies shall be factory assembled and terminated on one end with ceramic ferrule, LC compatible, heat cured epoxy connectors with an operational temperature of -40°C to +70°C. Each connector shall have a minimum of a 1-inch strain relief boot.

Insertion loss for each connector shall not exceed 0.30 dB.

Return loss for single mode connectors shall be greater than 45 dB.

Each assembly shall be fully tested and those test results placed on a test tag for each assembly.

Each assembly shall be individually packaged within a box or reel, with the submitted manufacturer's part number marked on the outside of the package.

Individual 250-µm coated fibers shall be up-jacketed to 1/8-inch using fan-out tubing. This tubing shall contain a 900-µm Teflon inner tube, aramid yarn strength members and an outer jacket.

The fan-out tubing shall be secured to the cable in a hard epoxy plug transition. Length of the individual legs shall be a minimum of three feet with the length difference between the shortest and longest legs of the assembly being no more than two inches.

The 12-Fiber, Pre-terminated Drop Cable Assemblies provided shall meet the following minimum requirements:

- All-dielectric, outside plant, loose tube central core cable shall be used
- High tensile strength yarn surrounding the central tube core
- Dry water blocking materials and construction
- Twelve (12) individual stranded fibers contained within the central tube core
- Corning Freedom LST All-Dielectric, Pirelli Centralink, or approved equivalent cables shall be used. This cable shall be designated as the drop cable

The Contractor shall ensure that the cable can withstand a maximum pulling tension of 300 pounds (lbf) during installation.

The cable shall have a shipping, storage and operating temperature range of -30°C to +70°C and an installation temperature range of -10°C to +60°C.

The Contractor shall provide cable with outer jacket marking using the following template:

Manufacturer's Name - "Optical Cable" - Month/Year of Manufacture - Telephone Handset Symbol - "MDOT" - "12F SM"

The Contractor shall include in the outer jacket marking the cable sequential length in accordance with the following:

- English units every two (2) feet
- Within -0/+1% of the actual length of the cable
- Contrasting color to the cable jacket
- Marking font height no less than 0.10 inch
- The sequential length markings do not run through “00000” on any single length of cable on a reel

907-657.02.4--Plenum Rated Nonmetallic Corrugated Raceway. The Contractor shall provide plenum rated nonmetallic corrugated raceway inside buildings when cable is not in rigid conduit when called for on the plans.

The installation shall conform to NEC articles 770 and 800.

Raceway shall meet UL Standards 910 and 2024.

The Contractor shall provide 2-inch diameter raceway unless larger is called for in the plans.

The Contractor shall provide Fiber Optic Fusion Splice (FO Splice Fusion) for splicing of all fibers with a fully automatic portable fusion splicer that provides consistent low loss (max 0.10 dB) splices.

Splicer shall provide three-axis fiber core alignment using light injection and loss measurement techniques.

The fusing process shall be automatically controlled.

The splicer shall provide splice loss measurements on an integral display, as well as a magnified image of the fiber alignment.

The Contractor shall retain ownership of the fusion splicer.

907-657.02.5--Fiber Optic Connectors. The Contractor shall provide fiber optic connectors for all fiber optic infrastructures including but not limited to fiber optic termination cabinets, fiber optic drop panels, and fiber optic patch cords.

The Contractor shall provide only factory-installed keyed LC compatible connectors for all fiber optic infrastructures.

Field-installed connectors shall not be used.

Adapter couplers shall not be used to change connector types.

Ceramic ferrule connectors, factory-installed, with a thermal-set heat-cured epoxy and machine polished mating face shall be used.

Connectors shall be installed as per manufacturer application and recommendations, including

proper termination to the outer-tubing (900-micron tubing, 3-mm fan out tubing, etc.) required for the application.

Connectors rated for an operating temperature of -40°C to +75 °C shall be used.

Simplex connectors for all male LC connectors shall be used and a latching cover for two male connectors being used in a duplex configuration shall be provided. Female couplers may be duplex but must allow simplex mating connectors.

Dust caps shall be provided for all exposed male connectors and female couplers at all times until permanent connector installation.

907-657.02.6--Fiber Optic Termination Cabinet (FO Termination Cabinet). Fiber optic termination cabinets shall be provided in communications hubs, field junctions, and the MDOT Traffic Management Center (TMC) as shown in the Plans for termination of 72-fiber outside plant (OSP) cable.

The Contractor shall provide wall/shelf mount 12-fiber distribution cabinet equipped with fiber optic connector modules in a 12-fiber configuration. These will be used in field equipment and communication cabinet locations.

Termination cabinets with cable management features included shall be provided.

The Contractor shall use termination cabinets that are fully compatible with all components of the fiber optic infrastructure as specified, including, but not limited to, fiber optic cable, fiber optic fusion splices and fiber optic connectors.

The Contractor shall provide rack-mount termination cabinets designed to fit standard 19-inch EIA equipment racks.

The Contractor shall provide all mounting hardware and supports to mount the termination cabinets in the locations shown in the Plans.

The Contractor shall provide fiber optic termination cabinets providing 72-fiber connectors and capable of storing 72 fusion splices in splice trays.

The Contractor shall provide termination cabinets that integrate the splice trays and connector modules into one compartment within one cabinet, or houses the splice trays and connector modules in separate compartments integrated into one cabinet.

The maximum dimensions of a complete termination cabinet shall be 7-rack units, 12.25 inches high by 16 inches deep.

Fiber optic termination cabinets shall be fully enclosed metallic construction with a protective hinged front cover for the connector ports.

The cabinet shall have cable access on all sides of the enclosed area behind the connector port panel.

The Contractor shall provide sufficient splice trays for storing 72 fusion splices in 12 or 24-splice increments.

The Contractor shall provide termination cabinets with fiber optic connector modules in a 12 fiber configuration of six (6) rows of one (1) duplex connector couplers. Connector modules shall mount vertically in the termination cabinet front panel.

Connector modules shall include clearly legible and permanent labeling of each of the 12 fiber connector couplers, and shall be labeled and identified as shown in the Plans.

The Contractor shall provide factory-assembled 12-fiber termination interconnect cables (pigtail cables) to be fusion spliced to the outside plant or indoor cable and connected to the rear of the connector modules.

Termination interconnect cables shall be all-dielectric, single jacketed cable with high tensile strength yarn surrounding 12 individual 900-micron fibers following EIA/TIA-598B color identification with factory-installed connectors.

The Contractor shall provide all incidental and ancillary materials including but not limited to grommets, cable strain relief and routing hardware, blank connector panels and labeling materials.

The cable shall be new (unused) and of current design and manufacture.

907-657.02.7--OSP Closures for Aerial, Pole Mount, Pedestal and Hand Hold Environments. OSP closures for aerial, pole mount, pedestal and hand hold shall be capable of accepting up to eight cables. The closures shall be capable of storing up to eight 90-inch lengths of expressed buffer tubes and up to 96 splices.

Assembly shall be accomplished without power supplies, torches, drill kits or any special tools. Re-entry shall require no additional materials.

Sealing shall be accomplished by enclosing the splices in a polypropylene case that is clamped together with a stainless steel latch and sealed with an O-ring.

Closure shall be capable of strand mounting with the addition of a strand mounting bracket.

Splice case shall be non-filled, non-encapsulate to prevent water intrusion, and shall allow re-entry without any special tools.

The closure shall be capable of preventing a 10-foot water head from intruding into the splice compartment for a period of seven (7) days.

It is the responsibility of the Contractor to ensure that the water immersion test has been performed by the manufacturer or an independent testing laboratory, and the appropriate documentation has been submitted to the Engineer.

907-657.02.8--OSP Closures for Drop Cable Splice Points. OSP closures for aerial, pole mount, pedestal and hand hold shall be capable of accepting the trunk cable and two drop cables. The closures shall be capable of storing up to eight 90-inch lengths of expressed buffer tubes and up to 48 splices.

Assembly shall be accomplished without power supplies, torches, drill kits or any special tools. Re-entry shall require no additional materials.

Sealing shall be accomplished by enclosing the splices in a polypropylene case that is clamped together with a stainless steel latch and sealed with an O-ring.

Closure shall be capable of strand mounting with the addition of a strand mounting bracket.

Splice case shall be non-filled, non-encapsulate to prevent water intrusion, and shall allow re-entry without any special tools.

The closure shall be capable of preventing a 10-foot water head from intruding into the splice compartment for a period of seven days.

It is the responsibility of the Contractor to ensure that the water immersion test has been performed by the manufacturer or an independent testing laboratory, and the appropriate documentation has been submitted to the Engineer.

907-657.02.9--Patch Cords and Jumper Cables. Any patch cords or jumper cables required to connect the new fiber and equipment at existing locations shall be considered incidental and shall be included in the cost of pay items 907-657-A and 907-657-B.

Any patch cords used for system configuration shall be compatible with fiber types and connectors specified herein.

Single-mode patch cords shall be yellow in color.

Jacketing material shall conform to the appropriate NEC requirement for the environment in which installed.

All cordage shall incorporate a 900- μ m buffered fiber, aramid yarn strength members and an outer jacket.

Patch cords may be simplex or duplex, depending on the application.

Attenuation shall be less than 1.0 dB/km @ 1310 nm, 0.75 dB/km @ 1550 and have a total attenuation of less than .5 dB.

The Contractor shall be responsible to determine and provide attenuators with the proper attenuation to not exceed the optical budgets of the equipment connected by patch cables.

907-657.02.10 Cable Labels. The Contractor shall provide cable labels that meet the following requirements:

- Self-coiling wrap-around type
- PVC or equivalent plastic material with UV and fungus inhibitors
- Base materials and graphics/printing inks/materials designed for underground outside plant use including solvent resistance, abrasion resistance and water absorption
- Minimum size of 2.5 inches wide by 2.5 inches long
- Minimum thickness of 0.010 inches
- Orange label body with pre-printed text in bold black block-style font with minimum text height of 0.375 inches
- The Contractor shall pre-print the following text legibly on labels used for all fiber optic trunk cables:

Caution Fiber Optic Cable Mississippi Department of Transportation (601) 359-1454

- The Contractor shall pre-print the following text legibly on labels used or all fiber optic drop cables (FO Drop Cable):

Caution Fiber Optic Drop Cable Mississippi Department of Transportation (601) 359-1454

- On all cable labels, the Contractor shall print the text specified above twice on the label with the text of the second image inverted. The end result shall be text which “reads correctly” when the label is coiled onto a cable.

907-657.02.11--Cable Markers. The Contractor shall provide low profile soil cable markers which meet the following requirements:

- 3.5 inches in diameter
- UV stabilized for Maximum fade resistance
- Durable and abrasion resistant
- Lawn mower resistant
- Orange in color
- Printed Legend:

Fiber Optic Cable
Mississippi Department of Transportation
Traffic Engineering Division (601)359-1454

The Contractor shall install cable markers with a 13-inch nylon stake every 500 feet along the fiber run.

907-657.02.12--Conduit Detection Wire. Conduit detection wire shall be #10 AWG stranded copper, orange-insulated, THHN -THWN conductor.

The Contractor shall furnish and install a detection wire surge protection system. The Contractor shall ensure that detection wires are attached to a surge protection system designed to dissipate

high transient voltages or other electrical surges.

The Contractor shall ensure that the detection wire surge protection system is grounded to a driven rod within 10 feet of the system using AWG #6 single conductor wire. Grounding must be done through a stand alone system not connected to power or ITS device grounding.

The Contractor shall ensure that the surge protection system normally allows signals generated by locate system to pass through the protection system without going to ground.

907-657.02.13--Project Submittal Program Requirements. The Contractor shall provide project submittals for all fiber optic infrastructures. The project submittals for fiber optic infrastructure shall include all items in this provision and any additional requirements included in any Notice to Bidders.

The Contractor shall provide project submittals including manufacturer recommended operations, maintenance and calibration procedures for the following equipment:

- Fiber optic installation and testing tools
- Fusion splicers
- Cable pulling strain dynamometers and breakaway links
- Cable air jetting/blowing systems
- OTDRs
- Optical attenuation testers (light sources and power meters)

The Contractor shall submit documentation and proof of manufacturer recommended operator training and certification for the following equipment:

- Fusion splicers
- Cable air jetting/blowing systems
- OTDRs
- Optical attenuation testers (light sources and power meters)

907-657.03--Installation Requirements. All equipment shall be installed according to the manufacturer's recommendations, the Plans and as follows.

907-657.03.1—General Requirements.

- a) The Contractor shall install all fiber optic infrastructures according to the manufacturer's recommended procedures and specifications.
- b) The Contractor shall provide all necessary interconnections, services and adjustments required for a complete and operable data transmission system.
- c) The Contractor shall install all fiber truck, drop, and patch cables such that attenuation shall be less than 1.0 dB/km @ 1310 nm, 0.75 dB/km @ 1550.
- d) All pole attachments, service loops and conduit risers shall be placed to minimize the possibility of damage as well as to facilitate future expansion or modernization.
- e) The cable shall be installed in continuous runs as indicated on the plans. Splices shall be allowed only at drop points or reel end points specified in the plans.

- f) At drop locations only, those fibers necessary to complete the communication path shall be spliced. Other fibers in the cable(s) shall be left undisturbed, with a minimum of five feet of buffer tube coiled inside the closure.
- g) Sufficient slack shall be left at each drop point to enable access of the cable components and splicing to occur on the ground. This is typical two times the pole height plus 15 feet.
- h) For aerial installations, the following minimum slack requirements shall apply:
 - For aerial slack storage at splice points, a radius controlling device, commonly referred to as a SNO-SHOE, shall be used for securing resulting cable slack at aerial splice points and shall be mounted directly to the strand.
 - For aerial cable runs exceeding 6-pole spans between splice points as indicated on the plans, two opposing SNO-SHOES shall be placed on the span 50 feet apart to provide for a 100-foot service loop for future drops and for slack for repair and pole relocations.
- i) Drop cable shall be routed to the controller cabinets via conduit risers as illustrated in the plans. The cable entrance shall be sealed with a duct plug designed for fiber optic cable to prevent water ingress.
- j) The minimum requirement for fiber protection outside a fiber optic enclosure in ALL cases shall be 1/8-inch fan-out tubing, containing a hollow 900- μ m tube, aramid strength members and an outer jacket, and shall be secured to the cable sheath.
- k) The minimum requirement for fiber protection inside wall mount or rack mount fiber enclosure shall be 900- μ m buffering, intrinsic to the cable in the case of tight buffered fibers, or in the case of 250- μ m coated fibers, a fan-out body and 900- μ m tubing secured to the buffer tube(s).
- l) During installation, even if the tension specifications for the cable are not exceeded, the first ten feet shall be discarded.
- m) Warning tape shall be placed 12 inches above the cable not to deviate ± 18 inches from the centerline of the optical cable. Warning tape shall be at least two inches wide and colored orange.

907-657.03.2--Cable Shipping and Delivery. The cable shall be packaged on reels for shipment. Each package shall contain only one continuous length of cable. The packaging shall be constructed as to prevent damage to the cable during shipping and handling.

Both ends of the cable shall be sealed to prevent the ingress of moisture.

A weatherproof reel tag shall be attached to each reel identifying the reel and cable so that it can be used by the manufacturer to trace the manufacturing history of the cable and the fiber. A cable data sheet shall be included with each reel containing the following information:

- Manufacturer name
- Cable part number
- Factory order number
- Cable length.
- Factory measured attenuation of each fiber

The Contractor shall cover the cable with a protective and thermal wrap.

The outer end of the cable shall be securely fastened to the reel head so as to prevent the cable

from becoming loose in transit. The inner end of the cable shall be projected a minimum of 6.5 feet into a slot in the side of the reel, or into housing on the inner slot of the drum, in such a manner as to make it available for testing.

Each reel shall be plainly marked to indicate the direction in which it is to be rolled to prevent loosening of the cable on the reel.

907-657.03.3--Cable Handling and Installation. The Contractor shall not exceed the maximum recommended pulling tension during installation as specified by the cable manufacturer.

The Contractor shall continuously monitor pulling tensions with calibrated measuring devices, such as a strain dynamometer.

The Contractor shall ensure that the minimum depth of the cable is a minimum of 36 inches unless shown otherwise in plans.

All pulled installations shall be protected with calibrated breakaway links.

The Contractor shall ensure that the minimum recommended bend radius is not exceeded during installation as specified by the cable manufacturer. Unless the manufacturer's recommendations are more stringent, the following guidelines shall be used for minimum bend radius:

- 20 X Cable Diameter Short Term - During Installation
- 10 X Cable Diameter Long Term - Installed

Before cable installation, the cable reels and reel stands shall be carefully inspected for imperfections or faults such as nails that might cause damage to the cable as it is unreeled.

All necessary precautions shall be taken to protect reeled cable from vandals or other sources of possible damage while unattended. Any damage to reeled cable or the reel itself shall necessitate replacement of the entire cable section at no additional cost to the State.

Whenever unreeled cable is placed on the pavement or surface above a pull box, the Contractor shall provide means of preventing vehicular or pedestrian traffic through the area in accordance with the safe maintenance of traffic provisions.

The cable shall be kept continuous throughout the pull. Cable breaks and reel end splices are permitted only in Type 5 pull boxes and occur at a minimum of 10,000 feet.

Where a cable ends in an underground fiber optic closure, all unused fibers and buffer tubes shall be secured and stored in splice trays in preparation for future reel end splicing and continuation.

907-657.03.4--Cable Storage. The Contractor shall properly store all cable to minimize susceptibility to damage. The proper bend radius shall be maintained, both short and long term, during cable storage.

Storage coils shall be neat in even length coils, with no cross over or tangling.

Storage coils of different cables shall be kept completely separate except when the cables terminate in the same splice closure.

Storage coils shall be secured to cable racking hardware with tie wraps, Velcro straps, or non-metallic cable straps with locking/buckling mechanism. No adhesive or self-adhering tapes, metal wires and straps, or rope/cord shall be used to secure coils.

Unless otherwise noted on the plans, the following are the requirements for cable storage for underground applications:

- Trunk cable in Type 4 pull box 25 feet
- Trunk cable in Type 5 pull box 200 feet
- Drop cable in Type 4 pull box 10 feet
- Drop cable in Type 5 pull box, not terminated in a splice closure 10 feet
- Drop cable in Type 5 pull box, terminated in a splice closure with the trunk cable 100 feet
- Trunk cable end in Type 5 pull box 200 feet
- Drop cable terminated in same splice closure as trunk cable end 200 feet

The Contractor shall label each pull box with a numbered disk obtained from the traffic engineering department. The disk shall be installed in accordance with the manufactures specification on the lid of each pull box. Numbers shall be noted on the As-Built plans for each pull box.

No slack cable shall be stored inside the communications hub building or Control Center.

907-657.03.5--Cable Labels. Cable labels shall be installed on all trunk and drop fiber optic cables. The installed cable shall be cleaned of all dirt and grease before applying any label.

The Contractor shall label all cables in or at every location where the cable is exposed outside of a conduit, innerduct or pole using the cable IDs for trunk cables or the device number for drop cables.

As a minimum, cable labels shall be installed in the following locations:

- Within 12 inches of every cable entry to a pull box, equipment cabinet, communications hub, or the TMC
- Within 12 inches of the exterior entry point of every fiber optic splice closure, termination cabinet and drop panel
- Every 30 feet for the entire length of cable in any storage coil in pull boxes
- Within one (1) foot of every pole attachment
- On every riser
- On every splice enclosure

907-657.03.6--Conduit Detection Wire. The Contractor shall install one conduit detection wire

in all conduit banks. Conduit detection wire is required in all conduit banks installed by any installation method, including trenching, directional boring or plowing.

Only one conduit detection wire is required per installed conduit bank regardless of the number of conduits installed in that segment. Conduit detection wire shall be installed inside the conduit.

Conduit detection wire is not required for structure mounted conduit, except where underground segments of structure mounted conduit are greater than 20 feet in length.

The conduit detection wire shall be continuous and unspliced between pull boxes and shall enter the pull boxes at the same location as the conduit with which it is installed, entering under the lower edge of the pull box.

Four (4) feet of conduit detection wire shall be coiled and secured in each pull box or vault.

When two or more detection wires are in any pull box, the Contractor shall mechanically splice all detection wire together.

Conduit detection wire is required in drop cable conduits.

A detection wire surge protection system shall be furnished and installed. Detection wires shall be attached to surge protection systems designed to dissipate high transient voltages or other electrical surges. The detection wire surge protection system shall be grounded to a driven rod within 10 feet of the system using AWG #6 single conductor wire. Grounding shall be done through a stand alone system not connected to power or ITS device grounding. The surge protection system shall normally allow signals generated by locate system to pass through the protection system without going to ground.

907-657.03.7--Splicing into Existing Fiber Optic Cable. At some locations, the Contractor may be required to splice new drop cable into existing fiber optic cable at existing pull boxes. The Contractor is responsible to protect all existing fiber during this work. No separate payment shall be made for splicing into the existing fiber. The cost for all fiber optic work and equipment shall be included in the bid price for pay items 907-657-A and 907-657-B.

The Contractor must notify the Project Engineer in writing no less than ten (10) days in advance of doing any work to existing fiber optic cable. Before any work can begin the Contractor must have obtain approval from the Project Engineer.

907-657.03.8--Fiber Optic Connections at Existing Communication Nodes. In some locations, the Contractor shall be required to pull new fiber optic cable into an existing communications huts. No separate payment will be made for this work. The cost for pulling the fiber into the hut, providing and installing the termination equipment, and terminating all the fibers shall be included in the cost of pay items 907-657-A and 907-657-B.

907-657.03.9--Drop and Insert Applications. The signal from the TMC to local controllers, cameras, and/or dynamic message signs will be conveyed via the backbone and branch cables.

The appropriate closure (Subsection 907-657.02.8) shall be used.

A 12-port fiber distribution cabinet and appropriate jumper shall be installed within the cabinet at locations approved by the Engineer.

At each device, the applicable fibers will be routed in and out of the equipment cabinet using a pre-terminated drop cable.

Only fibers required for the drop and insert shall be cut, no other fibers in the cable shall be cut without the approval of the Engineer.

The fibers shall be connected to the transmission equipment via LC/LC fiber optic patch cables.

The drop cable shall be routed in a position that will allow access to all installed components without movement of the cable.

In traffic signal control boxes the drop cable shall be routed up the left rear corner to a shelf mounted fiber optic termination cabinet.

In ITS equipment or communication cabinets the cable shall be routed neatly allowing for service of all installed components.

907-657.03.10--Testing.

907-657.03.10.1--General Requirements. The project testing program for fiber optic infrastructure shall include but is not limited to the specific requirements in this subsection.

All test results shall confirm physical and performance compliance with this TSP including but not limited to optical fibers and fusion splices. No event in any given fiber may exceed 0.10 dB. Any event measured above 0.10 dB shall be replaced or repaired at the event point.

The Contractor shall provide the tentative date, time and location of fiber optic infrastructure testing no less than seven (7) days in advance of the test. The Contractor shall provide confirmed date, time and location of fiber optic infrastructure testing no less than 48 hours before conducting the test.

The Contractor shall provide test results documentation in electronic format (3 copies) and printed format (3 copies). Electronic formats shall be readable in Microsoft Excel or other approved application. Printed copies shall be bound and organized by cable segment.

- Two sets are for the Traffic Engineering ITS Department
- One set are for the Engineer

All test results shall be provided in English units of measure of length.

All test results documentation shall be submitted to the Engineer within 14 days of completion of the tests.

The ITS Engineer, Project Engineer and/or their designee(s) are only responsible for attending and observing each test, and reviewing and approving the Contractor's test results documentation. The ITS Engineer, Project Engineer and/or their designee(s) reserve the right to attend and observe all tests. The Contractor is required to perform the Pre-Installation test and the Standalone Acceptance test with the MDOT ITS Engineer or his designee present.

907-657.03.10.2--Pre-Installation Test (PIT). The Contractor shall perform a PIT on all FO Cable prior to any cable removal from the shipping reels.

The Contractor shall perform a PIT on each cable reel delivered to the job site.

The PIT for FO Cable shall include but is not limited to:

- A visual inspection of each cable and reel
- An OTDR Test and documentation as required in the Standalone Acceptance Test (SAT) for three randomly selected fibers from each buffer tube

An Optical Attenuation Test is not required. However, if the Contractor decides to perform one of these tests for his or her own protection, it should be documented and provided to the Engineer.

907-657.03.10.3--Standalone Acceptance Test (SAT). The Contractor shall perform an SAT on all fiber optic infrastructures on this project after field installation is complete, including but not limited to all splicing and terminations. All fiber in pull boxes shall be in its final position mounted to the racks prior to the start of testing.

An SAT for each fiber in each cable shall include OTDR Tests and Optical Attenuation Tests.

For the Attenuation Tests, all fibers in all FO Cables and FO Drop Cables shall be tested from termination point to termination point, including:

- Fibers from FO Termination Cabinet to FO Termination Cabinet
- Fibers from FO Termination Cabinet to FO Drop Panel
- Fibers from FO Drop Panel to FO Drop Panel
- Fibers from FO Termination Cabinet to the end of the cable run in the last FO closure

All test results shall confirm compliance with this TSP including but not limited to optical fibers and fusion splices. No event in any given fiber may exceed 0.10 dB. Any event measured above 0.10 dB shall be replaced or repaired at the event point.

Test documentation shall include but is not limited to:

- Cable & fiber identification
- Cable & fiber ID and location - Physical location (device ID and station number of FO Termination Cabinet, FO Drop Panel, or cable end FO closure), fiber number, and truck or drop cable ID for both the beginning and end point
- Operator name

- Engineer's representative
- Date & time
- Setup and test conditions parameters
- Wavelength
- Pulse width Optical Time Domain Reflectometer (OTDR)
- Refractory index (OTDR)
- Range (OTDR)
- Scale (OTDR)
- Ambient temperature
- Test results for OTDR test (each direction and averaged)
- Total fiber trace (miles)
- Splice loss/gain (dB)
- Events > 0.05 dB
- Measured length (cable marking)
- Total length (OTDR measurement)
- Test results for attenuation test (each direction and averaged)
- Measured cable length (cable marking)
- Total length (OTDR measurement from OTDR test)
- Number of splices (determined from as-builts)
- Total link attenuation

The OTDR Test shall be conducted using the standard operating procedure and recommended materials as defined by the manufacturer of the test equipment.

The Contractor shall use a factory patch cord ("launch cable") of a length equal to the "dead zone" of the OTDR to connect the OTDR and the fiber under test.

Bi-directional OTDR tests shall be conducted and bi-directional averages calculated for each fiber.

All tests shall be conducted at 1310 and 1550 nm for single mode cable.

The Contractor shall conduct the Optical Attenuation Test using the standard operating procedure and recommended materials as defined by the manufacturer of the test equipment.

Bi-directional Optical Attenuation tests shall be conducted and bi-directional averages calculated for each fiber.

A continuity or tone test shall be performed after installation to confirm that a continuous run of conduit detection wire was installed between pull boxes or vaults.

The Contractor shall prepare a test plan, supply equipment, conduct the test and document the results.

The test plan shall be submitted at least 15 working days prior to the desired testing date.

Testing shall not begin until the Engineer has approved the test plan, and all tests shall be conducted in the presence of the Engineer. The Traffic Engineering ITS Department representative shall be notified of the testing dates and invited to observe all testing.

The Traffic Engineering ITS Department may perform additional testing of any and all infrastructure using their own equipment. The Contractor may observe this testing.

The burn in period can not start until the Traffic Engineering ITS Department is satisfied with the installation.

907-657.03.11--Documentation - As-Built Plans. The Contractor shall provide GPS locations of all pull boxes, splices, termination equipment cabinets, DMS, CCTV, Detectors and all pole locations.

The Contractor shall record the sequential footage markers from the fiber optic trunk and drop cables for each GPS location.

The Contractor shall provide scanned PDF files of all plan sheets with pen and ink markups.

The Contractor shall also provide MDOT with an electronic file containing all of the data and test reports required above in a format that is compatible with Microsoft Excel.

A copy of all documentation shall be provided to the MDOT Traffic Engineering ITS Department and Project Office

The Contractor shall provide a site location inventory of ITS devices to include manufacturer model, serial numbers, and quantity. It shall also include the following:

- OTN Nodes and OTN Cards
- Fiber modems
- Video Encoders and Decoders
- Cameras
- Dome Camera housings
- DMS Signs
- Any other serial numbered devices installed

907-657.03.12--MDOT Employee Training. Minimum training requirements are as follows:

- 1) After the installation is complete, the Contractor shall provide formal classroom training and "hands-on" operations training for proper operation and maintenance of the fiber optic plant. The training shall be provided for up to six personnel designated by the Engineer and shall be a minimum of one day in duration. The training shall cover as a minimum preventive maintenance, troubleshooting techniques, fault isolation and OTDR trace analysis. All training materials shall be provided by the Contractor.
- 2) A Training Plan shall be submitted within 90 days of the Notice-to-Proceed. Approval of the Plan shall be obtained from the Engineer and the Traffic Engineering ITS Department. A detailed explanation of the contents of the course and the time schedule of when the training

shall be given shall be included in the Training Plan.

- 3) Prior to training, the Contractor shall submit resume and references of the training instructor(s) along with an outline of the training course in a Training Plan. Training instructor(s) shall be manufacturer-certified, experienced in the skill of training others. The training shall be conducted by a trainer with a minimum of four years of experience in training personnel on the operation and maintenance of fiber optic systems.
- 4) The Contractor shall furnish all handouts, manuals and product information for the training. The same models of equipment furnished for the project shall be used in the training. The Contractor shall furnish all media and test equipment needed to present the training. Training shall be conducted in the Jackson area.

907-657.04--Method of Measurement. Fiber optic cable of the type specified will be measured by the linear foot, measured horizontally along the conduit or aerially along the messenger cable. No differentiation will be made for cable installed underground or aerially.

Fiber optic drop cable and of the type specified will be measured by the linear foot from the trunk line to the controller cabinet.

The cost for all fiber optic work, equipment and testing shall be included in the bid price for pay items 907-657-A and 907-657-B.

All required cabinet facilities shall not be measured for separate payment. All standard or special fiber optic modems, fan out boxes, connectors, terminations cabinets, patch cords, raceways, splicing devices, splicing, detection wire, warning tape, above ground markers, backplane facilities, twisted pair communications cable interface devices, etc., and any other cabinet modifications required for the fiber optic system shall be included in the price bid for other items of work.

907-657.05--Basis of Payment. Fiber optic cable, fiber optic drop cable, and fiber optic video drop cable, measured as prescribed above, will be paid for at the contract unit price bid per linear foot, which price shall be full compensation for furnishing all materials, for all installing, connecting, cutting, pulling and testing and for all equipment, tools, labor and incidentals necessary to complete the work.

Payment will be made under:

907-657-A: Fiber Optic Cable, 72 SM - per linear foot

907-657-B: Fiber Optic Drop Cable, 12 SM - per linear foot

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-658-6

CODE: (SP)

DATE: 11/21/2012

SUBJECT: Networking Equipment

Section 658, Network Switch, is hereby added to and becomes part of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction as follows:

SECTION 907-658 -- NETWORKING EQUIPMENT

907-658.01--Description. This section specifies the minimum requirements for network switches furnished and installed. Type A, Type B, and Type D shall be hardened. These switches support Intelligent Transportation Elements deployed on arterial streets and the highway system. Elements include but are not limited to traffic signals, dynamic message signs, surveillance cameras, and vehicle detection systems. Type C switches will support the Intelligent Transportation System and be installed in the Traffic Management Center and Communications Huts which are environmentally controlled. Type C switches are not required to be hardened. This Section also specifies the minimum requirements for Terminal Servers and Category 6 cable furnished and installed on this project. The Terminal Servers shall be hardened. The work shall consist of providing all labor, materials, equipment and incidentals necessary to furnish, install and test Terminal Servers. The Terminal Server device, also commonly referred to as a Port Server device, will be used to communicate bi directionally between IP-based Ethernet network systems and existing field devices that communicate or are controlled via a full-duplex serial interface. The Category 6 cable will be installed in conduit between elements that are within 300 feet of each other to eliminate the need for two hardened switches.

907-658.02--Materials. Network Switches Type A, Type B, Type C, Type D, Terminal Servers and associated cabling will be placed in the field device cabinets and shall meet the following requirements:

907-658.02.1--Network Switch Requirements. The Type A, Type B, Type C, and Type D Network switches shall adhere to the following minimum requirements:

- 1) Field switch optical ports shall meet the following:
 - a. The minimum optical budget between transmit and received ports shall be 19dB.
 - b. Shall include LC connector types.
 - c. Optical receiver maximum input power level shall not be exceeded.
 - d. Optical attenuators shall be added as needed; fiber optic attenuator patch cords shall be in accordance with Section 657 of the Mississippi Standard Specifications for Road and Bridge Construction. It is the Contractor's responsibility to determine where attenuators are needed and shall be included in the cost of the switch.

- e. The Contractor shall be required to measure the optical power on each optical port to ensure that power entering the receiver is within the acceptable power budget of the optical port.
 - f. Optical interface equipment shall operate at 1310 nm.
- 2) Operate from 100 VAC to 200 VAC.
 - 3) The field switches shall operate between -34 to +74 degree Celsius, including power supply.
 - 4) The field switches shall operate from 10% to 90% non-condensing humidity.
 - 5) Meet the IEEE 802.3 (10Mbps Ethernet) standard.
 - 6) Meet the IEEE 802.3u (Fast Ethernet 100 Mbps) standard.
 - 7) Meet the IEEE 802.3x (Full Duplex with Flow Control) standard.
 - 8) Meet the IEEE 802.1p (Priority Queuing) standard.
 - 9) Meet the IEEE 802.1Q (VLAN) standard per port for up to four VLAN's.
 - 10) Meet the IEEE 802.1w (Rapid Spanning Tree Protocol) standard.
 - 11) Meet the IEEE 802.3ad (Port Trunking) standard for a minimum of two groups of four ports.
 - 12) The field switches shall meet IEEE 802.3D (Spanning Tree Protocol) standard.
 - 13) Capable of mirroring any port to any other port within the switch.
 - 14) Password manageable through:
 - a. SNMP
 - b. Telnet/CLI
 - c. HTTP (Embedded Web Server) with Secure Sockets Layer (SSL)
 - 16) Full implementation of SNMPv1 and SNMPv2c.
 - 17) Full implementation of GVRP (Generic VLAN Registration Protocol).
 - 18) Full implementation of IGMP and IGMP snooping.
 - 19) Minimum MTBF of 100,000 hrs using Bellcore TS-332 standard.
 - 20) Full implementation of RFC 783 (TFTP) to allow remote firmware upgrades.
 - 21) UL approved.
 - 22) The field switch shall provide status indicators as follows: 1) power on an off, 2) network status per port (transmit, receive, link, speed), and 3) status indicators shall be LED.
 - 23) Unused ports (copper and optical) shall be covered with rubber or plastic dust caps/cover.

907-658.02.2--Type A Network Switch. Type A Network Switch shall meet the following.

- 1) Minimum of six 10/100/1000 Base-TX ports. Each port shall connect via RJ-45 connector.
- 2) Minimum of two 1000 Base Long Reach optical ports.
- 3) Full implementation of RMON I and RMON II.
- 4) Rack, shelf or DIN Rail mountable. If shelf mounted, the Contractor must furnish and install a shelf if shelf space is not available in the facility. Any shelf used shall be ventilated as per the Network Switch manufacturer recommendation.
- 5) All power transformers provided shall be "fastening mechanism" type. No plug-in types shall be permitted. All corded transformers shall be mountable with the ability to neatly secure power cords.

907-658.02.3--Type B Network Switch. Type B Network Switch shall meet the following.

- 1) Minimum of twelve 10/100 Base-TX ports. Each port shall connect via RJ-45 connector.
- 2) Minimum of one 10/100/1000 Base-TX ports. Each port shall connect via RJ-45 connector.
- 3) Full implementation of RMON I and RMON II.
- 4) Minimum of two 1000 Base Long Reach optical ports.
- 5) Rack, shelf or DIN Rail mountable. If shelf mounted, the Contractor must furnish and install a shelf if shelf space is not available in the facility. Any shelf used shall be ventilated as per the Network Switch manufacturer recommendation.
- 6) All power transformers provided shall be "fastening mechanism" type. No plug-in types shall be permitted. All corded transformers shall be mountable with the ability to neatly secure power cords.

907-658.02.4--Type C Network Switch Requirements. The Type C Network Switch will be installed in the Communication Hubs and shall meet the following requirements:

- 1) Each switch shall be populated with the following modules:
 - a. Two redundant switch fabric modules that meet the following minimum requirements:
 - i. Layer 2/3/4 switching and routing services
 - ii. 64Gbps/48Mpps module Bandwidth
 - iii. Min of 2-GE uplinks available per card. The Contractor shall provide an uplink SFP optical module compatible with the interface for the uplink as indicated in the Comm Node notice to bidders for each uplink
 - b. In one (or more) SFP-based module(s): a minimum of 48 ports of 1000Base-X (SFP-based) compatible. The Contractor shall provide whichever is greater between a min number of SFP optic modules to interface to the fiber as indicated in the plans and NTBs, or a min of 14 and shall meet the following minimum requirements:
 - i. Optical budget of 19dB
 - ii. Hot-swappable
 - iii. Same optical wavelength as Type A & B switches
 - iv. Same optical transmitter power as Type A & B switches
 - c. In one (or more) modules: 24 Ethernet 10/100/1000 ports
- 2) Optical receiver maximum input power level shall not be exceeded.
- 3) Optical attenuators shall be added as needed; fiber optic attenuator patch cords shall be in accordance with Section 657 of the Mississippi Standard Specifications for Road and Bridge Construction. It is the Contractor's responsibility to determine where attenuators are needed and shall be included in the cost of the switch.
- 4) 19" rack mountable.
- 5) Operate from 5 to 40 degree Celsius.
- 6) NEBS Level 3 compliant.
- 7) Operate from 5 to 80 non-condensing humidity
- 8) Designed as a chassis with easy to remove modules.
- 9) Chassis backplane shall be passive.
- 10) All modules shall be hot-swappable.
- 11) Meet the IEEE 802.1d (Virtual Bridge) standard.
- 12) Meet the IEEE 802.1x (authentication) standard.
- 13) Meet the requirements of :
 - a. IEEE 802.3z

- b. IEEE 802.3ah
- c. GR-20-CORE: Generic requirements for Optical Fiber and Optical Fiber Cable
- d. GR-326-CORE: Generic Requirements for Singlemode
- 14) Full implementation of RIP protocol as outlined by RFCs: 1058, 1723, 1812
- 15) Full implementation of OSPF protocol as outlined by RFCs: 2178, 1583, 1587, 1745, 1765, 1850, 2154, 2328, 1850, 1997, 2385, 2439, 2842, 2918, 2370.
- 16) Capable of mirroring any port to any other port within the switch.
- 17) Password manageable through:
 - a. SSHv2 (Secure Shell)
- 18) Full implementation of GMRP (Generic Multicast Registration Protocol).
- 19) Full implementation of IGMPv2.
- 20) Full implementation of PIM-SM and PIM-DM.
- 21) Full implementation of DVMRPv3.
- 22) Full implementation of VRRP.
- 23) Comply with FCC 47 CRF Part 15 Class A emissions.
- 24) Bandwidth flow rate limiting policing support per port.
- 25) Full security implementation of
 - a. Support SSH2, 802.1x (rel 2)
 - b. Access Control Lists (ACL's)
 - c. RADIUS
 - d. TACACS
- 26) Have redundant power supplies installed.
- 27) The power supply units shall be hot swappable.
- 28) Switch chassis shall have a minimum of 6 module slots.
- 29) Blank covers for all remaining slots.

907-658.02.5--Type D Network Switch Requirements. The Type D Network Switch shall be of chassis design. The switch shall be able to accept a minimum of 4 different type modular cards and have Layer 2 switch and Layer 3 routing capabilities. The Type D Network Switch shall meet the minimum requirements specified below:

- 1) The switch shall be chassis designed with a minimum of 4 module slots.
- 2) Each switch shall be able to accept the following type modules:
 - a. Ethernet module:
 - i. A minimum number of six (6) 10/100/1000Base-TX compatible RJ45 ports.
 - ii. The Contractor shall provide the minimum number of modules necessary to meet or exceed the required number of ports as indicated in the plans and NTBs.
 - iii. Total required bandwidth shall per chassis shall not exceed 10 Gbps
 - b. Fiber based modules:
 - i. The module shall accept SFP type fiber modules
 - ii. The Contractor shall supply any necessary fiber modules that meet the requirements of speed, type of fiber, and link budget connection.
 - iii. The Contractor shall provide the minimum number of modules necessary to meet or exceed the required number of ports as indicated in the plans and NTB
 - c. WAN module:

- i. T1 Interface
 - 1) The Interface shall be T1
 - 2) The ports shall connect via RJ45 connector.
- ii. Cellular Interface
 - 1) Contractor shall provide information to the Project Engineer to enable activation of the modem.
 - 2) Contractor shall get prior approval from the Project Engineer on selection of cellular radio type (HSPA/EVDO)
- d. Power Supply module:
 - i. The power module provided shall be "screw terminal block" type. No pluggable terminal block.
 - ii. Input power: Same as Type A and Type B switches.
 - iii. Power module shall be hot-swappable.
 - iv. The Contractor shall supply the necessary amount of power supplies to meet power requirements for all cards installed and the chassis itself
- 3) Software license shall provided to match functionality of installed modules.
- 4) Shall be DIN or Panel mountable.
- 5) The switch shall provide layer 2 and 3 switching and routing services
- 6) Meet the IEEE 802.1d (Virtual Bridge) standard.
- 7) Meet the IEEE 802.1x (authentication) standard.
- 8) Password manageable through:
 - a. SSHv2 (Secure Shell)
- 9) Full implementation of GMRP (Generic Multicast Registration Protocol).
- 10) Full implementation of IGMPv2.
- 11) Full implementation of PIM-SM and PIM-DM.
- 12) Full implementation of DVMRPv3.
- 13) Full implementation of VRRP.
- 14) Comply with FCC 47 CRF Part 15 Class A emissions.
- 15) Bandwidth flow rate limiting policing support per port.
- 16) Full security implementation of
 - a. Support SSH2, 802.1x (rel 2)
 - b. Access Control Lists (ACL's)
 - c. RADIUS
 - d. TACACS
- 17) Blank covers for all remaining slots.
- 18) Electronic surfaces shall be covered with conformal coating for additional environmental protection.

907-658.02.6--Terminal Server. Terminal Server shall meet the following.

- 1) 10/100 Base-T Ethernet port connection
- 2) RJ-45/DB9 Serial port connection
- 3) RS-232/422/485 selectable serial connections
- 4) Baud rates up to 230 Kbps
- 5) Full Modem and hardware flow control
- 6) TCP/UDP Socket Services
- 7) UDP Multicast
- 8) Telnet and Reverse Telnet

- 9) Modem emulation
- 10) SNMP (Read/Write)
- 11) PPP
- 12) Port buffering
- 13) HTTP
- 14) Remote management
- 15) DHCP/RARP/ARP-Ping for IP address assignment
- 16) LED status for link and power
- 17) The Terminal Server shall support a minimum of Four (4) bi-directional serial communications over Ethernet 10/100 Base-TX.
- 18) Each Terminal Server shall have a minimum of four (4) EIA-232/422/485 serial interface ports. These ports shall be individually and independently configurable, directly or over the network, to EIA-232/422/485 mode of operation as defined by the EIA for data format, data rate and data structure (e.g., the number of bits, parity, stop bits, etc.). Each serial port shall support up to 230 Kbps.
- 19) Each serial port shall support IP addressing and socket number selection.
- 20) The equipment shall provide the capability to establish an IP connection directly from a workstation to any encoder IP address and socket number transport serial data.
- 21) Each Terminal Server shall have an Ethernet Interface (10/100Base-TX protocol, Full/Half-Duplex, Auto Sense (802.3), RJ-45).

907-658.02.7--Category 6 Cable. Category 6 Cable shall meet the following.

- 1) 4 Pair #24 AWG UTP Category 6 Cable
- 2) This item is paid for Category 6 cables installed between cabinets and does not apply to other patch cords installed inside cabinets or huts.
- 3) Supplied Category 6 cable shall be suitable for use outdoors in duct and as a minimum meet the following requirements:
- 4) Fully water blocked
- 5) Conforms to the National Electrical Code Article 800
- 6) UL 1581 certified
- 7) Voltage Rating 300 Volts or greater
- 8) Operating and installation temperature (-4°F to 140°F)
- 9) Bend Radius 10 x Cable OD or smaller
- 10) Recommended for 1000Base-T applications for a distance of 100 meters.

907-658.02.8--Category 6 Patch Cords. The Cat 6 Patch Cords shall be furnished and installed as needed to connect the Network Switches with other equipment. Cat 6 Patch Cords shall be considered an incidental component for this project and furnished and installed as needed to provide a functional system. Cat 6 Patch Cords shall meet the following minimum requirements:

- 1) All patch cords shall be from the same manufacturer.
- 2) Shall incorporate four (4) pair 24 AWG stranded PVC Category 6.
- 3) Shall be factory made; Contractor or vendor assembled patch cords are not permitted.
- 4) Shall be TIA/EIA 568-B.2-1 compliant. Patch Cords shall be compliant to T568B pin configuration (which ever is used).
- 5) Certified by the manufacturer for Category 6 performance criteria.
- 6) Length as needed. Excessive slack is not permitted.

907-658.02.9--Project Submittal Program Requirements. The Contractor shall provide project submittals for network switches including scheduling requirements. The project submittals for network switches and terminal servers shall include but are not limited to the specific requirements in this subsection.

- 1) The Contractor shall submit detailed cut sheets which document compliance with all parameters required in this section. If a parameter is not covered in the cut sheet a signed statement from the manufacturer on letterhead shall be submitted as an attachment. Failure to address all requirements will result in rejection of the submittal.
- 2) The Contractor shall submit documentation and proof of manufacturer-recommended training and certification for the installation and configuration of network switches.
- 3) The Contractor shall submit technical specifications for the minimum transmitter port to receiver port optical attenuation required for the switches to function in accordance with this specification for the optical links shown on the plans.

907-658.03--Installation Requirements. All Networking Equipment shall be installed according to the manufacturer's recommendations, the Plans and as follows:

- 1) Network switches shall only be configured and installed by the switch manufacturer trained personnel.
- 2) Network switches shall be installed in accordance with manufacturer's guidelines and requirements.
- 3) The Contractor shall request from the Department, switch configuration information (such as IP address, VLAN Tag values, etc.) not more than 30 days after the switch submittals have been approved.
- 4) The Contractor shall provide as needed the necessary Cat 6 patch cords and fiber optic patch cords for a complete and functional installation.
- 5) Category 6 cable installed in conduit shall be installed and terminated per the manufacturers recommended procedures. Five feet of spare slack shall be provided in the pull boxes nearest each Type B or Type C cabinet.
- 6) The Contractor shall provide training for proper management of the equipment installed. This training should cover daily operation as well as maintenance and configuration of the switching equipment installed as part of this project and meet the requirements of subsection 658.03.3 of this document.
- 7) The Contractor shall provide the MDOT with a written inventory of items received and the condition in which they were received. Inventory shall be inclusive of make, model, and serial numbers, MAC address, and installation GPS coordinates. All equipment shall be installed according to the manufacturer's recommendations or as directed by the MDOT.
- 8) Any new, additional or updated drivers required for the existing ATMS software to communicate and control new Networking Equipment installed by the Contractor shall be the responsibility of the Contractor.

907-658.03.1--Switch Configuration Requirements. The Contractor shall configure Network Switches as follows:

- 1) All 100 Base-TX ports shall be configured as follows:
 - a. RSTP/STP – Off.

- b. Unused TX ports shall be disabled.
- c. Operating TX ports shall be programmed to filter only for the MAC address of the connected device.
- 2) All 1000 Base-FX ports shall be configured as follows:
 - a. RSTP/STP – On.
 - b. IGMP Snooping – On.
- 3) The Type D switch configuration shall be as outline in the Project plans and details.
- 4) All network switches shall be installed and configured with the same firmware configuration. The optimum settings shall be used consistently system-wide. Any locations that require different settings for optimum performance shall be approved by the Engineer.
- 5) The Switches shall be configured to enable multicasting of video.
- 6) The Contractor may submit an alternate switch configuration to the ITS Engineer for review and approval; The ITS Engineer will review alternate switch configuration documentation. The goal of the switch configuration is to reduce the network delay, as well as provide network redundancy.
- 7) The Contractor shall submit an electronic copy of all final and approved configurations of all switches to the Project engineer and to the ITS Engineer.

907-658.03.2--Documentation. The Contractor shall submit documentation and proof of manufacturer-recommended training and certification for the installation and configuration of network switches.

As-built Plans showing switch configuration and connections shall be provided to the Project Engineer and ITS Engineer in electronic format.

The Contractor shall submit documentation and proof of measured optical power budgets to all optical links of all type switches.

907-658.03.3--MDOT Employee Training. After the installation is complete, the Contractor shall provide formal classroom training and "hands-on" operations training for proper operation and maintenance of the network switch. The training shall be provided for up to six personnel designated by the ITS Engineer and shall be a minimum of four hours in duration. The training shall cover as a minimum preventive maintenance, troubleshooting techniques, fault isolation and circuit analysis. All training materials shall be provided by the Contractor.

- 1) Prior to training, submit resume and references of instructor(s). Also submit an outline of the training course in a Training Plan. Submit the Training Plan within 90 days of Contract Notice-to-Proceed. Obtain approval of the Plan from the Engineer and the Traffic Engineering ITS Department. Explain in detail the contents of the course and the time schedule of when the training will be given.
- 2) Furnish all handouts, manuals and product information.
- 3) For the training, use the same models of equipment furnished for the project. Furnish all media and test equipment needed to present the training.
- 4) Training shall be conducted in the Jackson area.
- 5) Training instructor(s) shall be manufacturer-certified, experienced in the skill of training others.

- 6) The training shall be conducted by a trainer with a minimum of four years of experience in training personnel on the operation and maintenance of fiber optic systems.

907-658.04--Method of Measurement. Network Switches of the type specified will be measured per each installation as specified in the Project plans. Such measurement shall be inclusive of furnishing, installing, system integration and testing of a Network Switch including all chassis, modules, power cables, power supplies, software, license, fiber optic patch cords, fiber optic attenuator patch cords, Cat 6 patch cords, and all incidental components, attachment hardware, mounting shelf and hardware, testing and training requirements, and all work, equipment and appurtenances as required to provide a fully functional switch ready for use. Type D Network Switch module cards shall be specified per Project plans for each site location. It shall also include all system documentation including: shop drawings, operations and maintenance manuals, wiring diagrams, block diagrams, and other material necessary to document the operation of the switch and network.

Terminal Server will be measured per each installation. Such measurement shall be inclusive of furnishing, installing, system integration and testing of a Terminal Server including all incidental components, attachment hardware, mounting shelf and hardware, testing and training requirements, and all work, equipment and appurtenances as required to provide a fully functional Terminal Server ready for use.

Category 6 cable installed between cabinets will be paid for by linear foot measured horizontally.

907-658.05--Basis of Payment. Network Switches, measured as prescribed above, will be paid for at the contract unit price bid per each. The price shall be full compensation for all labor, tools, materials, equipment and incidentals necessary to complete the work.

Terminal Servers, measured as prescribed above, will be paid for at the contract unit price bid per each. The price shall be full compensation for all labor, tools, materials, equipment and incidentals necessary to complete the work.

Category 6 cable installed between cabinets will be paid for by linear foot measured horizontally.

Payment will be made under:

907-658-A: Network Switch, Type __	-per each
907-658-B: Terminal Server	- per each
907-658-C Category 6 Cable, Installed in Conduit	per linear foot

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-681-2

CODE: (IS)

DATE: 12/02/2004

SUBJECT: Submittal Data

Section 681, Roadway Lighting System, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

Delete the first paragraph of Subsection 681.04.2 on page 568 and substitute the following:

907-681.04--Basic Materials and Methods. The Contractor shall submit to the Engineer eight (8) copies of submittal data for all electrical materials and equipment proposed for use not later than forty-five (45) days prior to beginning any lighting work.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-699-4

CODE: (IS)

DATE: 02/15/2012

SUBJECT: Construction Stakes

Section 699, Construction Stakes, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-699.01--Description. After the first paragraph of Subsection 699.01 on page 585, add the following:

This work may be performed utilizing Automated Machine Guidance technologies and systems in accordance with the standard specifications and contract documents. Automated Machine Guidance (AMG) is defined as the utilization of positioning technologies such as Global Positioning Systems (GPS), Robotic Total Stations, lasers, and sonic systems to automatically guide and adjust construction equipment according to the intended design requirements. The Contractor may use any type of AMG system(s) that result in compliance with the contract documents and applicable Standard Specifications.

Automated Machine Guidance (AMG) is not a mandatory requirement. Automated Machine Guidance (AMG), conventional staking, or a combination of both may be used at the Contractor's option for staking on this project.

907-699.02--Materials. After the last sentence of the first paragraph of Subsection 699.02 on page 585, add the following.

All equipment required to accomplish automated machine guidance shall be provided by the Contractor. The Contractor may use any type of AMG equipment that achieves compliance with the contract documents and applicable Standard Specifications.

907-699.03--Construction Requirements. Delete the first sentence of Subsection 699.03 on page 585 and substitute the following:

The Department will establish, one time only, secondary control points with elevations at distances not to exceed 1500 feet or that minimum distance necessary to maintain inter-visibility.

Delete the third sentence of the fourth paragraph of Subsection 699.03 on page 587, and substitute the following.

The duties performed by said Registrant shall conform to the definitions under the "practice of engineering" and practice of "land surveying" in Mississippi Law and the latest edition of the MDOT Survey Manual. The MDOT Survey Manual can be obtained online at the following address.

<http://www.gomdot.com/Divisions/Highways/Resources.aspx?Div=RoadwayDesign>.

After the last paragraph of Subsection 699.03 on page 587, add the following.

907-699.03.1--Automated Machine Guidance.

907-699.03.1.1--Automated Machine Guidance Work Plan. The Contractor shall submit a comprehensive written Automated Machine Guidance Work Plan to the Engineer for review at least 30 days prior to use. The submittal of a AMG Work Plan shall be an indication of the Contractor's intention to utilize AMG instead of conventional methods on the project areas and elements stated in the Work Plan. The Engineer shall review the Automated Machine Guidance Work Plan to ensure that the requirements of this special provision are addressed. The Contractor shall assume total responsibility for the performance of the system utilized in the Work Plan. Any update or alteration of the Automated Machine Guidance Work Plan in the course of the work shall be approved and submitted to MDOT for determination of conformance with requirements of this special provision.

The Automated Machine Guidance Work Plan shall describe how the automated machine guidance technology will be integrated into other technologies employed on the project. This shall include, but not limited to, the following:

1. A description of the manufacturer, model, and software version of the AMG equipment.
2. Information on the Contractor's experience in the use of Automated Machine Guidance system (or Related Technologies) to be used on the project, including formal training and field experience of project staff.
3. A single onsite staff person as the primary contact, and up to one alternate contact person for Automated Machine Guidance technology issues.
4. A definition of the project boundaries and scope of work to be accomplished with the AMG system.
5. A description of how the project proposed secondary control(s) is to be established. It shall also include a list and map detailing control points enveloping the site.
6. A description of site calibration procedures including, but not limited to, equipment calibration and the frequency of calibration as well as how the equipment calibration and information will be documented to MDOT and the Project Engineer. The documentation shall contain a complete record of when and where the tests were performed and the status of each equipment item tested within or out of the ranges of required tolerances.
7. A description of the Contractor's quality control procedures for checking mechanical calibration and maintenance of equipment. It shall also include the frequency and type of checks to be performed.
8. A description of the method and frequency of field verification checks and the submission schedule of results to the Project Engineer.
9. A description of the Contractor's contingency plan in the event of failure/outage of the AMG system.
10. A schedule of Digital Terrain Models (DTM) intended for use on the project. This shall be submitted to the Engineer for review, feedback, and communication.

The Contractor and MDOT will agree on the quantity and schedule of Contractor-provided training on the utilized AMG system required under Subsection 907-699.03.1.3.

907-699.03.1.2--State's Responsibilities. The District Surveyor will set the primary horizontal

and vertical control points in the field for the project as per latest edition of the MDOT Survey Manual. The control points shall be in Mississippi State Plane coordinate system.

MDOT will provide an electronic alignment file and primary control file for the project. This file will be based on the appropriate Mississippi State Plane Coordinate Zone either West or East. These files will be created with the computer software applications MicroStation (CADD software) and GEOPAK (civil engineering software). The data files will be provided in the native formats. The Contractor shall perform necessary conversion of the files for their selected grade control equipment, field verify the data for accuracy, and immediately report any errors to MDOT.

MDOT will provide design data, if available, in an electronic format to the Contractor. These files will be created with the computer software applications MicroStation (CADD software) and GEOPAK (civil engineering software). The data files will be provided in the native formats as specified in the Data Format section of this specification. No guarantee is made to the data accuracy or completeness, or that the data systems used by MDOT will be directly compatible with the systems used by the Contractor. Information shown on the paper plans marked with the seal (official plans as advertised) shall govern.

The Engineer will perform spot checks as necessary of the Contractor's machine control grading results, surveying calculations, records, field procedures, and actual staking. If the Engineer determines that the work is not being performed in accordance with the Specifications, the Engineer shall order the Contractor to re-construct the work to the requirements of the contract documents at no additional cost to the Department.

907-699.03.1.3--Contractor's Responsibilities The Contractor shall provide formal training, if requested, on the use of the Automated Machine Guidance Equipment and the Contractor's systems to MDOT project personnel prior to the start of construction activities utilizing AMG. This training is for providing MDOT project personnel with an understanding of the equipment, software, and electronic data being used by the Contractor.

The Contractor shall use the alignment and control data provided by MDOT.

The Contractor shall bear all costs, including but not limited to the cost of actual reconstruction work that may be incurred due to errors in application of Automated Machine Guidance techniques or manipulation of MDOT design data in Digital Terrain Models (DTM).

The Contractor shall be responsible for converting the information on the plans and/or electronic data file provided by MDOT into a format compatible with the Contractor's AMG system.

The Contractor shall establish secondary control points at locations along the length of the project and outside the project limits and/or where work is performed beyond the project limits as required by the Automated Machine Guidance system utilized. The Contractor shall establish this secondary control using survey procedures as outlined in the latest edition of the MDOT Survey Manual. A copy of all new control point information shall be provided to the Engineer prior to construction activities. The Contractor shall be responsible for all errors resulting from their efforts and shall correct deficiencies to the satisfaction of the Engineer and at no additional cost to the State.

The Contractor shall preserve all reference points and monuments that are established by the District Surveyor outside the construction limits. If the Contractor fails to preserve these items, they shall be re-established by the Contractor to their original quality at no additional cost to the State.

The Contractor shall set grade stakes at the top of the finished sub-grade and base course at all hinge points on the typical sections at 2000-foot maximum intervals on mainline, critical points such as, but not limited to, PC's, PT's, beginning and ending super elevation transition sections, middle of the curve, and at least two locations on each of the side roads and ramps, and at the beginning and end of each cross slope transition where Automated Machine Guidance is used. These grade stakes shall be established using conventional survey methods for use by the Engineer to check the accuracy of the construction.

The Contractor shall meet the same accuracy requirements as detailed in the Mississippi Standard Specifications for Road and Bridge Construction. Grade stakes shall be established as per Section 699 of the Mississippi Standard Specifications for Road and Bridge Construction for use by the Engineer to check the accuracy of the construction.

The Contractor shall be responsible for implementing the AMG system using the Mississippi State Plane Coordinate System. No localization methods will be accepted.

907-699.03.1.4--Data Format. It is the Contractor's responsibility to produce the Digital Terrain Model(s) and/or 3D line work needed for Automated Machine Guidance. MDOT does not produce this data in its design process. MDOT does provide CADD files created in the design process to the Contractor. The CADD files provided by MDOT are provided in the native software application formats in which they are created with no conversions, and their use in developing 3D data for machine guidance is at the discretion of the Contractor. The CADD files that may be available are listed below. Cross-Sections are one of the items provided but are not necessarily created at critical design locations. Therefore their use in Digital Terrain Models (DTM) for AMG is limited.

1. Project Control - Microstation DGN file and ASCII file
2. Existing Topographic Data - Microstation DGN file(s)
3. Preliminary Surveyed Ground Surface - GeoPak TIN, if available
4. Horizontal and Vertical alignment information - GeoPak GPK file and/or Microstation DGN file(s)
5. 2D Design line work (edge of pavement, shoulder, etc.) - Microstation DGN file(s)
6. Cross sections - Microstation DGN file(s), GeoPak format
7. Superelevation - Microstation DGN file(s), GeoPak format
8. Form Grades - Microstation DGN file(s)
9. Design Drainage - Microstation DGN file(s)

It is expressly understood and agreed that MDOT assumes no responsibility in respect to the sufficiency or accuracy of these CADD files. These files are provided for convenience only and the contract plans are the legal document for constructing the project.

907-699.05--Basis of Payment. Add the "907" prefix to the pay items listed on page 588.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SPECIAL PROVISION NO. 907-701-4

CODE: (IS)

| DATE: 11/09/2010

SUBJECT: Hydraulic Cement

Section 701, Hydraulic Cement, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

Delete Subsection 701.01 on pages 595 & 596, and substitute the following:

907-701.01--General. The following requirements shall be applicable to hydraulic cement:

Only hydraulic cements conforming to Section 701 shall be used. Hydraulic cements shall not be listed or designated as meeting more than one AASHTO or Department type.

Different brands of hydraulic cement, or the same brand of hydraulic cement from different mills, shall not be mixed or used alternately in any one class of construction or structure, without written permission from the Engineer; except that this requirement will not be applicable to hydraulic cement treatment of design soils, or bases.

The Contractor shall provide suitable means for storing and protecting the hydraulic cement against dampness. Hydraulic cement, which for any reason, has become partially set or which contains lumps of caked hydraulic cement will be rejected. Hydraulic cement salvaged from discarded or used bags shall not be used.

The temperature of bulk hydraulic cement shall not be greater than 165°F at the time of incorporation in the mix.

Acceptance of hydraulic cement will be based on the certification program as described in the Department's Materials Division Inspection, Testing, and Certification Manual and job control sampling and testing as established by Department SOP.

Retests of hydraulic cement may be made for soundness and expansion within 28 days of test failure and, if the hydraulic cement passes, it may be accepted. Hydraulic cement shall not be rejected due to failure to meet the fineness requirements if upon retests after drying at 212°F for one hour, it meets such requirements.

Delete Subsection 701.02 on page 596, and substitute the following:

907-701.02--Portland Cement.

907-701.02.1--General.

907-701.02.1.1--Types of Portland Cement. Portland cement (cement) shall be either Type I or Type II conforming to AASHTO Designation: M85 or Type I(MS), as defined by the description below Table 1. Type III cement conforming to AASHTO Designation: M85 or Type III(MS), as defined by the description below Table 1, may be used for the production of precast or precast-prestressed concrete members.

907-701.02.1.2--Alkali Content. All cement types in this Subsection shall meet the Equivalent alkali content requirement for low-alkali cements listed in AASHTO Designation: M85, Table 2.

907-701.02.2--Replacement by Other Cementitious Materials. The maximum replacement of cement by weight is 25% for fly ash or 50% for ground granulated blast furnace slag (GGBFS). The minimum tolerance for replacement shall be 5% below the maximum replacement content. Replacement contents below this minimum tolerance by fly ash or GGBFS may be used, but shall not be given any special considerations, like the maximum acceptance temperature for Portland cement concrete containing pozzolans. Special considerations shall only apply for replacement of cement by fly ash or GGBFS.

907-701.02.2.1--Portland Cement Concrete Exposed to Soluble Sulfate Conditions or Seawater. When Portland cement concrete is exposed to moderate or severe soluble sulfate conditions, or to seawater, cement types and replacement of cement by Class F fly ash, GGBFS, or silica fume shall be as follows in Table 1.

Table 1- Cementitious Materials for Soluble Sulfate Conditions

Sulfate Exposure	Water-soluble sulfate (SO ₄) in soil, % by mass	Sulfate (SO ₄) in water, ppm	Cementitious material required*
Moderate and Seawater	0.10 - 0.20	150 - 1,500	Type II **, ***, **** cement, or Type I cement with one of the following replacements of cement by weight: 25% Class F fly ash, 50% GGBFS, or 8% silica fume
Severe	0.20 - 2.00	1,500 - 10,000	Type I cement with a replacement by weight of 50% GGBFS, or Type II ** cement with one of the following replacements of cement by weight: 25% Class F fly ash, 50% GGBFS, or 8% silica fume

- * The values listed in this table for replacement of Portland cement by the cementitious materials listed are maximums and shall not be exceeded. The minimum tolerance for replacement shall be 0.5% below the maximum replacement content. Replacement contents below this minimum tolerance by the cementitious materials listed in this table do not meet the requirements for the exposure conditions listed and shall not be allowed.
- ** Type I cement conforming to AASHTO Designation: M85 with a maximum 8% tricalcium aluminate (C₃A) may be used in lieu of Type II cement; this cement is given the designation "Type I(MS)". Type III cement conforming to AASHTO Designation: M85 with a maximum 8% tricalcium aluminate (C₃A) may be used in lieu of Type II cement as allowed in Subsection 907-701.02.1; this cement is given the designation "Type III(MS)".
- *** Blended cement meeting the sulfate resistance requirements of Subsection 907-701.04 may be used in lieu of Type II as allowed in Subsection 907-701.04. No additional cementitious materials shall be added to or as a replacement for blended cement.
- **** Class F fly ash or GGBFS may be added as a replacement for cement as allowed in Subsection 907-701.02.2.

Class C fly ash shall not be used as a replacement for cement in any of the sulfate exposure conditions listed above.

907-701.02.2.2--Cement for Soil Stabilization Exposed to Soluble Sulfate Conditions or Seawater. When Portland cement for use in soil stabilization is exposed to moderate or severe soluble sulfate conditions, or to seawater, cement types and replacement of cement by Class F fly ash or GGBFS shall meet the requirements of Subsection 907-701.02.2.1. Neither metakaolin nor silica fume shall be used to bring the cementitious materials into compliance with the requirements of Table 1.

Delete Subsection 701.03 on page 596, and substitute the following:

907-701.03--Masonry Cement. Masonry cement shall conform to ASTM Designation: C 91 and shall only be used in masonry applications.

Delete Subsection 701.04 on page 596, and substitute the following:

907-701.04--Blended Hydraulic Cement.

907-701.04.1--General.

907-701.04.1.1--Types of Blended Cement. Blended hydraulic cements (blended cements) shall be of the following types and conform to AASHTO Designation: M 240:

- Type I(SM) – Slag-modified Portland cement
- Type IS – Portland blast-furnace slag cement
- Type I(PM) – Pozzolan-modified Portland cement
- Type IP – Portland-pozzolan cement

Blended cement for use in Portland cement concrete or soil stabilization exposed to the moderate soluble sulfate condition or exposure to seawater as defined in Table 1 shall meet the Sulfate resistance requirement listed in AASHTO Designation: M 240, Table 2 and the “(MS)” suffix shall be added to the type designation.

907-701.04.1.2--Alkali Content. All blended cement types in this Subsection shall meet the Mortar expansion requirements listed in AASHTO Designation: M 240, Table 2.

907-701.04.2--Replacement by Other Cementitious Materials. No additional cementitious materials, such as Portland cement, performance hydraulic cement, fly ash, GGBFS, metakaolin, or others, shall be added to or as a replacement for blended cement.

907-701.04.3--Exposure to Soluble Sulfate Conditions or Seawater. When Portland cement concrete or blended cement for soil stabilization is exposed to moderate soluble sulfate conditions or to seawater, where the moderate soluble sulfate condition is defined in Table 1, the blended cement shall meet the sulfate resistance requirement listed in AASHTO Designation: M 240, Table 2.

When Portland cement concrete or blended cement for soil stabilization is exposed to severe soluble sulfate conditions, where the severe soluble sulfate condition is defined in Table 1, blended cements shall not be used.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-702-3

CODE: (SP)

DATE: 05/08/2012

SUBJECT: Polyphosphoric Acid (PPA) Modification of Petroleum Asphalt Cement

Section 702.05, Petroleum Asphalt Cement, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-702.05--Petroleum Asphalt Cement. Delete the third paragraph of Subsection 702.05 on page 598, and substitute the following.

The bituminous material used in all types of asphalt mixtures shall conform to AASHTO Designation: M 320, Performance Grade PG 67-22, as modified in the table below, except that Polyphosphoric Acid (PPA) may be used at low dosage rates as a modifier to enhance the physical properties of a base binder to meet the requirements for Performance Grade PG 67-22. In addition, PPA may be used as a catalyst or mixing agent at low dosage rates in the production of Polymer Modified, Performance Grade PG 76-22.

When PPA is used as a modifier, in no case shall the PPA modifier be used to adjust the physical properties of the binder a full binder grade. For example: the base binder (unmodified) is graded as a PG 64-22 and should only be modified by the addition of PPA to a modified binder grade of PG 67-22.

When petroleum asphalt cement is modified by PPA, the following dosage limits shall be applied.

Grade	Dosage Limit
PG 67-22	0.75% by weight of binder
PG 76-22	0.50% by weight of binder

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO SPECIAL PROVISION NO. 907-703-10

DATE: 1/08/2013

SUBJECT: Aggregates

Before Subsection 907-703.06.1.2 on page 1, add the following.

907-703.06.1--Coarse Aggregates. Delete the third paragraph of Subsection 703.06.1 on page 613, and substitute the following.

When tested in accordance with AASHTO Designation: T 19, the dry rodded unit weight of all aggregates except expanded clay and shale shall not be less than 70 pounds per cubic foot.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SPECIAL PROVISION NO. 907-703-10

CODE: (SP)

| DATE: 06/06/2012

SUBJECT: Aggregates

Section 703, Aggregates, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-703.03.2.4--Gradation. Delete the last sentence of the last paragraph of Subsection 703.03.2.4 on page 611.

907-703.04--Aggregate for Crushed Stone Courses.

907-703.04.1--Coarse Aggregate. Delete the first paragraph of Subsection 703.04.1 on page 611, and substitute the following.

Coarse aggregate, defined as material retained on No. 8 sieve, shall be either crushed limestone, steel slag, granite, concrete, or combination thereof. Crushed concrete is defined as recycled concrete pavement, structural concrete, or other concrete sources that can be crushed to meet the gradation requirements for Size No. 825 B as modified below. In no case shall waste from concrete production (wash-out) be used as a crushed stone base.

907-703.04.2--Fine Aggregate. Delete the first sentence of the first paragraph of Subsection 703.04.2 on page 612, and substitute the following.

Fine aggregate, defined as material passing No. 8 sieve, shall be material resulting from the crushing of limestone, steel slag, granite, concrete, or combination thereof.

Delete the third paragraph of Subsection 703.04.2 on page 612.

907-703.04.3--Gradation. After the table in Subsection 703.04.3 on page 613, add the following.

If crushed concrete is used, the crushed material shall meet the gradation requirements of Size No. 825 B with the exception that the percent passing by weight of the No. 200 sieve shall be 2 – 18.

907-703.06--Aggregates for Hot Mix Asphalt.

907-703.06.1.2--Fine Aggregates. Delete the last sentence of Subsection 703.06.1.2 on page 614.

907-703.20.3--Gradation. Delete the table and notes in Subsection 703.20.3 at the top of page 626, and substitute the following.

PERCENT PASSING BY WEIGHT

Square Mesh Sieves	Shell	Coarse			Medium	Fine
		Size I	Size II Note (1)	Size III Note (3)		
3 inch	90-100			100		
2 1/2 inch				90-100		
2 inch		100				
1 1/2 inch		90-100	100	25-60		
1 inch		80-100	97-100			
3/4 inch		55-100	55-100	0-10		
1/2 inch		35-85	35-85	0-5	100	
3/8 inch	12-65	12-65		97-100		
No. 4, Note (2)	0-30	0-30		92-100		
No. 10	0-8	0-8		80-100	100	
No. 40				10-40	80-100	
No. 60				0-20	30-100	
No. 100					15-80	
No. 200	0-5	0-4	0-4	0-5	0-30	
PI Material Passing No. 40				6 or less	0	

Note (1): Size II is intended for use in bases in which portland cement is used.

Note (2): Ground shell shall contain at least 97% passing the No. 4 sieve.

Note (3): Size III is intended for use in stabilized construction entrances.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-707-4

CODE: (SP)

DATE: 04/24/2012

SUBJECT: Rubber Type Gaskets

Section 707, Joint Materials, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-707.04--Rubber Type Gaskets for Joining Conduit. In the first sentence of Subsection 707.04 on page 636, delete the reference to “AASHTO Designation: M 315” and substitute “ASTM Designation: C 443”.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-711-4

CODE: (IS)

DATE: 06/26/2009

SUBJECT: Synthetic Structural Fiber Reinforcement

Section 711, Reinforcement and Wire Rope, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

After Subsection 711.03.4.3 on page 665, add the following:

907-711.04--Synthetic Structural Fiber. The synthetic structural fibers shall be approved for listing in the Department's "Approved Sources of Materials" prior to use. The synthetic structural fibers shall be added to the concrete and mixed in accordance with the manufacturer's recommended methods.

907-711.04.1--Material Properties. The fibers shall meet the requirements of ASTM Designation: C 1116, Section 4.1.3. The fibers shall be made of polypropylene, polypropylene/polyethylene blend, nylon, or polyvinyl alcohol (PVA).

907-711.04.2--Minimum Dosage Rate. The dosage rate shall be such that the average residual strength ratio ($R_{150,3.0}$) of fiber reinforced concrete beams is a minimum of 20.0 percent when the beams are tested in accordance with ASTM Designation: C 1609. The dosage rate for fibers shall be determined by the following.

The fiber manufacturer shall have the fibers tested by an acceptable, independent laboratory acceptable to the Department and regularly inspected by the Cement and Concrete Reference Laboratory of the National Institutes of Standards and Technology and approved to perform ASTM Designations: C 39, C 78, and C192.

The laboratory shall test the fibers following the requirements of ASTM Designation: C 1609 in a minimum of three (3) test specimens cast from the same batch of concrete, molded in 6 x 6 x 20-inch standard beam molds meeting the requirements of ASTM Designation: C 31. The beams shall be tested on an 18-inch span. The tests for $R_{150,3.0}$ shall be performed when the average compressive strength of concrete used to cast the beams is between 3500 and 4500 psi. The tests for compressive strength shall follow the requirements of ASTM Designation: C 39. The average compressive strength shall be determined from a minimum of two (2) compressive strength cylinders.

The value for $R_{150,3}$ shall be determined using the following equation:

$$R_{150,3.0} = \frac{f_{150,3.0}}{f_1} \times 100$$

The residual flexural strength ($f_{150,3.0}$) shall be determined using the following equation:

$$f_{150,3.0} = \frac{P_{150,3.0} \times L}{b \times d^2}$$

where:

$f_{150,3.0}$ is the residual flexural strength at the midspan deflection of $L/150$, (psi),

$P_{150,3.0}$ is the residual load capacity at the midspan deflection of $L/150$, (lbf),

L is the span, (in),

b is the width of the specimen at the fracture, (in), and

d is the depth of the specimen at the fracture, (in).

For a 6 x 6 x 20-inch beam, the $P_{150,3.0}$ shall be measured at a midspan deflection of 0.12 inch.

Additionally, $R_{150,3.0}$, $f_{150,3.0}$, and $P_{150,3.0}$ may also be referred to as R_{150}^{150} , f_{150}^{150} , and P_{150}^{150} respectively.

At the dosage rate required to achieve the minimum $R_{150,3}$, the mixture shall both be workable and the fibers shall not form clumps.

The manufacturer shall submit to the State Materials Engineer certified test reports from the independent laboratory showing the test results of each test specimen.

907-711.04.3--Job Control Requirements. The synthetic structural fibers shall be one from the Department's "Approved Sources of Materials."

At the required dosage rate, the mixture shall both be workable and the fibers shall not form clumps to the satisfaction of the Engineer. If the mixture is determined by the Engineer to not be workable or have clumps of fibers, the mixture may be rejected.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO SPECIAL PROVISION NO. 907-713-2

DATE: 04/04/2012

SUBJECT: Admixtures for Concrete

After the last sentence of the first paragraph of Subsection 907-713.02 on page 1, add the following.

Admixtures providing a specific performance characteristic(s) other than those of water reduction or set retardation shall meet the minimum requirements for Type S. For admixtures meeting the requirements for Type S, the manufacturer shall provide data to substantiate the specific performance characteristic(s) to the satisfaction of the State Materials Engineer.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SPECIAL PROVISION NO. 907-713-2

CODE: (IS)

| DATE: 11/09/2010

SUBJECT: Admixtures for Concrete

Section 713, Concrete Curing Materials and Admixtures, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

After the second paragraph of Subsection 713.01.2 on page 676, add the following.

Type 1-D compound may be used on bridge rails, median barriers, and other structures requiring a spray finish. When Type 1-D compound is used, it will be the Contractor's responsibility to assure that the compound has dissipated from the structure prior to applying the spray finish and that the spray finish adheres soundly to the structure.

Delete Subsection 713.02 on pages 676 & 677, and substitute the following:

907-713.02--Admixtures for Concrete. Air-entraining admixtures used in Portland cement concrete shall comply with AASHTO Designation: M 154. Set-retarding, accelerating, and/or water-reducing admixtures shall comply with AASHTO Designation: M 194. Water-reducing admixture shall meet the minimum requirements for Type A. Set-retarding admixtures shall meet the minimum requirements for Type D.

In order to obtain approval of an admixture, the State Materials Engineer shall have been furnished certified test reports, made by an acceptable independent laboratory regularly inspected by the Cement and Concrete Reference Laboratory of the National Institutes of Standards and Technology, which show that the admixture meets all the requirements of the applicable AASHTO Standard Specification.

The Department reserves the right to sample, for check tests, any shipment or lot of admixture delivered to a project.

The Department reserves the right to require tests of the material to be furnished, using the specific cement and aggregates proposed for use on the project, as suggested in AASHTO Designation: M 154 and outlined in AASHTO Designation: M 194.

After an admixture has been approved, the Contractor shall submit to the State Materials Engineer, with each new lot of material shipped, a certification from the manufacturer in accordance with the requirements of Subsection 700.05.1 and stating the material is of the same composition as originally approved and has not been changed or altered in any way. The requirement in Subsection 700.05.1(b) is not required on the certification from the manufacturer.

Admixtures containing chlorides will not be permitted.

Failure to maintain compliance with any requirement of these specifications shall be cause for rejection of any previously approved source or brand of admixture.

Admixtures shall only be used in accordance with the manufacturer's recommended dosage range as set forth in the manufacturer's approval request correspondence. When an admixture is used in Portland cement concrete, it shall be the responsibility of the Contractor to produce satisfactory results.

907-713.02.1--Source Approval. In order to obtain approval of an admixture, the Producer/Suppliers shall submit to the State Materials Engineer the following for review: certified test reports, made by an acceptable independent laboratory regularly inspected by the Cement and Concrete Reference Laboratory of the National Institutes of Standards and Technology, which show that the admixture meets all the requirements of the applicable AASHTO or Department Specification for the specific type and the dosage range for the specific type of admixture.

907-713.02.2--Specific Requirements. Admixtures containing chlorides will not be permitted.

907-713.02.3--Acceptance. The Department reserves the right to sample, for check tests, any shipment or lot of admixture delivered to a project.

The Department reserves the right to require tests of the material to be furnished, using the specific cement and aggregates proposed for use on the project, as suggested in AASHTO Designation: M 154 and outlined in AASHTO Designation: M 194.

Failure to maintain compliance with any requirement of these specifications shall be cause for rejection of any previously approved source or brand of admixture.

With each new lot of material shipped the Contractor shall submit to the State Materials Engineer, a notarized certification from the manufacturer showing that the material complies with the requirements of the applicable AASHTO or Department Specification.

When an admixture is used, it shall be the responsibility of the Contractor to produce satisfactory results.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SPECIAL PROVISION NO. 907-714-6

CODE: (IS)

| DATE: 11/09/2010

SUBJECT: Miscellaneous Materials

Section 714, Miscellaneous Materials, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-714.05--Fly Ash. Delete Subsections 714.05.1 & 714.05.2 on pages 680 & 681, and substitute the following:

907-714.05.1--General. The fly ash source must be approved for listing in the Department's "Approved Sources of Materials" prior to use. The acceptance of fly ash shall be based on certified test reports, certification of shipment from the supplier, and tests performed on samples obtained after delivery in accordance with the Department's Materials Division Inspection, Testing, and Certification Manual and Department SOP.

Different classes of fly ash or different sources of the same class shall not be mixed or used in the construction of a structure or unit of a structure without written permission from the Engineer.

The Contractor shall provide suitable means for storing and protecting the fly ash from dampness. Separate storage silos, bins, or containers shall be provided for fly ash. Fly ash which has become partially set or contains lumps of caked fly ash shall not be used.

The temperature of the bulk fly ash shall not be greater than 165°F at the time of incorporation into the work.

All classes of fly ash shall meet the supplementary option chemical requirement for available alkalis listed in AASHTO Designation: M 295, Table 2. Class F fly ash shall have a calcium oxide (CaO) content of less than 6.0%. Class C fly ash shall have a CaO content of greater than or equal to 6.0%.

The replacement of Portland cement with fly ash shall be in accordance with the applicable replacement content specified in Subsection 907-701.02.2.

In addition to these requirements, fly ash shall meet the following specific requirements for the intended use.

907-714.05.2--Fly Ash for Use in Concrete. When used with Portland cement in the production of concrete or grout, the fly ash shall meet the requirements of AASHTO Designation: M 295, Class C or F, with the following exception:

| The loss on ignition shall not exceed 6.0 percent.

No additional cementitious materials, such as blended hydraulic cement, GGBFS, metakaolin, or others, shall be added to or as a replacement for Portland cement when used with fly ash.

907-714.06--Ground Granulated Blast Furnace Slag (GGBFS). Delete Subsection 714.06.1 on page 681, and substitute the following:

907-714.06.1--General. The GGBFS source must be approved for listing in the Department's "Approved Sources of Materials" prior to use. The acceptance of GGBFS shall be based on certified test reports, certification of shipment from the supplier, and tests performed on samples obtained after delivery in accordance with the Department's Materials Division Inspection, Testing, and Certification Manual and Department SOP.

The Contractor shall provide suitable means for storing and protecting the GGBFS against dampness and contamination. Separate storage silos, bins, or containers shall be provided for GGBFS. GGBFS which has become partially set, caked or contains lumps shall not be used.

The State Materials Engineer shall be notified in writing of the nature, amount and identity of any processing or other additions made to the GGBFS during production.

GGBFS from different mills shall not be mixed or used alternately in any one class of construction or structure without written permission from the Engineer; except that this requirement will not be applicable to cement treatment of design soils or bases.

No additional cementitious materials, such as blended hydraulic cement, fly ash, metakaolin, or others, shall be added to or as a replacement for Portland cement when used with GGBFS in the production of concrete. The replacement of Portland cement with GGBFS shall be in accordance with the applicable replacement content specified in Subsection 907-701.02.2.

Delete Subsection 714.07 on page 682, and substitute the following:

907-714.07--Additional Cementitious Materials.

907-714.07.1--Metakaolin.

907-714.07.1.1--General. Metakaolin shall only be used as a supplementary cementitious material in Portland cement concrete for compliance with the requirements for cementitious materials exposed to soluble sulfate conditions. Metakaolin from different sources shall not be mixed or used alternately in any one class of construction or structure without written permission from the Engineer. No additional cementitious materials, such as blended hydraulic cement, fly ash, GGBFS, or others, shall be added to or as a replacement for Portland cement when used with metakaolin in the production of concrete.

The State Materials Engineer shall be notified in writing of the nature, amount and identity of any processing, or other additions made to the metakaolin during production.

907-714.07.1.2--Source Approval. The approval of each metakaolin source shall be on a case by case basis as determined by the State Materials Engineer. In order to obtain approval of a metakaolin source, the Producer/Suppliers shall submit to the State Materials Engineer the

following for review: certified test reports, made by an acceptable, independent laboratory regularly inspected by the Cement and Concrete Reference Laboratory of the National Institutes of Standards and Technology, which show that the metakaolin meets all the requirements of AASHTO Designation: M295, including the Effectiveness in contributing to sulfate resistance, Procedure A, listed in AASHTO Designation: M295, Table 4 for Supplementary Optional Physical Requirements, and other requirements listed herein.

In order to demonstrate effectiveness in contributing to sulfate resistance, included in this test data shall be results of metakaolin from the proposed source tested in accordance with ASTM Designation: C 1012. There shall be two sets of test specimens per the following:

- a. One set of test specimens shall be prepared using a Type I Portland cement meeting the requirements of AASHTO Designation: M85 and having a tricalcium aluminate (C_3A) content of more than 8.0%,
- b. One set of test specimens shall be prepared using a Type II Portland cement meeting the requirements of AASHTO Designation: M85.
- c. The proposed metakaolin shall be incorporated at the rate of 10% cement replacement in each set of test specimens and shall meet both of the acceptance criteria listed below for source approval.

The requirement for acceptance of the test sample using Type I Portland cement is an expansion of 0.10% or less at the end of six months. The requirement for acceptance of the test sample using Type II Portland cement is an expansion of 0.05% or less at the end of six months.

907-714.07.1.3--Storage. The Contractor shall provide suitable means for storing and protecting the metakaolin against dampness and contamination. Metakaolin which has become partially set, caked, or contains lumps shall not be used.

907-714.07.1.4--Specific Requirements. Metakaolin shall meet the requirements of AASHTO Designation: M 295, Class N with the following modifications:

1. The sum of $SiO_2 + Al_2O_3 + Fe_2O_3$ shall be at least 85%. The Material Safety Data Sheet shall indicate that the amount of crystalline silica, as measured by National Institute of Occupation Safety and Health (NIOSH) 7500 method, after removal of the mica interference, is less than 1.0%.
2. The loss on ignition shall be less than 3.0%.
3. The available alkalies, as equivalent Na_2O , shall not exceed 1.0%.
4. The amount of material retained on a No. 325 mesh sieve shall not exceed 1.0%.
5. The strength activity index at seven (7) days shall be at least 85%.

907-714.07.1.5--Acceptance. With each new lot of material shipped the Contractor shall submit to the State Materials Engineer a certified test report from the manufacturer showing that the material meets the requirements AASHTO Designation: M295, Class N and the requirements of this Subsection.

The Department reserves the right to sample, for check tests, any shipment or lot of metakaolin delivered to a project.

907-714.07.2--Silica Fume.

907-714.07.2.1--General. Silica fume shall only be used as a supplementary cementitious material in Portland cement concrete for compliance with the requirements for cementitious materials exposed to soluble sulfate conditions. Silica fume from different sources shall not be mixed or used alternately in any one class of construction or structure without written permission from the Engineer. No additional cementitious materials, such as blended hydraulic cement, performance hydraulic cement, fly ash, GGBFS, or others, shall be added to or as a replacement for Portland cement when used with silica fume in the production of concrete.

The State Materials Engineer shall be notified in writing of the nature, amount and identity of any processing, or other additions made to the silica fume during production.

907-714.07.2.2--Source Approval. The approval of each silica fume source shall be on a case by case basis as determined by the State Materials Engineer. In order to obtain approval of a silica fume source, the Producer/Suppliers shall submit to the State Materials Engineer the following for review: certified test reports, made by an acceptable, independent laboratory regularly inspected by the Cement and Concrete Reference Laboratory of the National Institutes of Standards and Technology, which show that the silica fume meets all the requirements of AASHTO Designation: M307, Table 3, including the Sulfate resistance expansion, listed in the table for Optional Physical Requirements, and other requirements listed herein.

In order to demonstrate effectiveness in contributing to sulfate resistance, included in this test data shall be results of silica fume from the proposed source tested in accordance with ASTM Designation: C 1012. There shall be two sets of test specimens per the following:

- a. One set of test specimens shall be prepared using a Type I Portland cement meeting the requirements of AASHTO Designation: M85 and having a tricalcium aluminate (C_3A) content of more than 8.0%,
- b. One set of test specimens shall be prepared using a Type II Portland cement meeting the requirements of AASHTO Designation: M85.
- c. The proposed silica fume shall be incorporated at the rate of 8% cement replacement in each set of test specimens and shall meet both of the acceptance criteria listed below for source approval.

The requirement for acceptance of the test sample using Type I Portland cement is an expansion of 0.10% or less at the end of six months. The requirement for acceptance of the test sample using Type II Portland cement is an expansion of 0.05% or less at the end of six months.

907-714.07.2.3--Storage. The Contractor shall provide suitable means for storing and protecting the silica fume against dampness and contamination. Silica fume which has become partially set, caked, or contains lumps shall not be used.

907-714.07.2.4--Acceptance. With each new lot of material shipped, the Contractor shall submit to the State Materials Engineer a certified test report from the manufacturer showing that the material meets the Chemical and Physical Requirements of AASHTO Designation: M307.

The Department reserves the right to sample, for check tests, any shipment or lot of silica fume

delivered to a project.

Delete Subsection 714.11.6 on pages 690 and 691, and substitute the following:

907-714.11.6--Rapid Setting Cementitious Patching Compounds for Concrete Repair.

Rapid setting concrete patching compounds must be approved for listing in the Department's "Approved Sources of Materials" prior to use. Upon approval, a product must be recertified every four (4) years to remain on the "Approved Sources of Materials" list. Each product shall be pre-measured and packaged dry by the manufacturer. All liquid solutions included by the manufacturer as components of the packaged material shall be packaged in a watertight container. The manufacturer may include aggregates in the packaged material or recommend the addition of Contractor furnished aggregates.

The type, size and quantity of aggregates, if any, to be added at the job site shall be in accordance with the manufacturer's recommendations and shall meet the requirements of Subsection 703.02 for fine aggregate and Subsection 703.03 for coarse aggregate. Required mixing water to be added at the job site shall meet the requirements of Subsection 714.01.2.

Only those bonding agents, if any, recommended by the manufacturer of the grout or patching compounds may be used for increasing the bond to old concrete or mortar surfaces.

Patching compounds containing soluble chlorides will not be permitted when in contact with steel.

Site preparation, proportioning of materials, mixing, placing and curing shall be performed in accordance with the manufacturer's recommendation for the specific type of application, and the Contractor shall furnish a copy of these recommendations to the Engineer.

Rapid setting cementitious concrete patching compounds, including components to be added at the job site, shall conform to the following physical requirements:

Non-shrink cementitious grouts shall not be permitted for use.

Compressive strength shall equal or exceed 3000 psi in 24 hours in accordance with ASTM C 928 for Type R2 concrete or mortar.

Bond strength shall equal or exceed 1000 psi in 24 hours in accordance with ASTM C 928 for Type R2 concrete or mortar.

The material shall have a maximum length change of $\pm 0.15\%$ in accordance with ASTM C 928 for Type R2 concrete or mortar.

The Contractor shall furnish to the Engineer three copies of the manufacturer's certified test report(s) showing results of all required tests and certification that the material meets the specifications when mixed and placed in accordance with the manufacturer's instructions. When the mixture is to be placed in contact with steel, the certification shall further state that the packaged material contains no chlorides. Certified test report(s) and certification shall be furnished for each lot in a shipment.

The proportioning of materials must be approved by the State Materials Engineer and any subsequent change in proportioning must also be approved. A sample of each component shall be submitted to the Engineer along with the quantity or percentage of each to be blended. At least 45 days must be allowed for initial approval.

The proportioning of materials for subsequent lots may be approved by the State Materials Engineer upon receipt of certification from the manufacturer that the new lot of material is the same composition as that originally approved by the Department and that the material has not been changed or altered in any way.

907-714.11.7--Commercial Grout for Anchoring Doweled Tie Bars in Concrete. Before Subsection 714.11.7.1 on page 691, add the following:

Approved Non-“Fast Set” Epoxy anchor systems as specified below may be used for the repair of concrete pavements that do not involve permanent sustained tension applications or overhead applications.

“*Fast Set Epoxy*” may not be used for any Adhesive Anchor Applications. Adhesive Anchor Systems (Fast Set epoxy or otherwise) shall not be used for permanent sustained tension applications or overhead applications. “Fast Set Epoxy” refers to an epoxy produced by the Sika Corporation called Sikadur AnchorFix-3 and repackaged for sale under a variety of names/companies listed at the Federal Highway Administration web site at the following link:

<http://www.fhwa.dot.gov/Bridge/adhesives.cfm>

907-714.11.7.4--Acceptance Procedure. After the last sentence of the first paragraph of Subsection 714.11.4 on page 691, add the following:

Upon approval, a product must be recertified every four (4) years to remain on the “Approved Sources of Materials” list.

907-714.11.8--Epoxy Joint Repair System.

907-714.11.8.1--General. After the last sentence of the first paragraph of Subsection 714.11.8.1 on page 692, add the following:

Upon approval, a product must be recertified every four (4) years to remain on the “Approved Sources of Materials” list.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO SPECIAL PROVISION NO. 907-715-3

DATE: 06/14/2012

SUBJECT: Roadside Development Materials

Add the following to the table in Subsection 907-715.03.2 on page 1.

Wheat	-	80	98
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MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-715-3

CODE: (IS)

DATE: 01/25/2008

SUBJECT: Roadside Development Materials

Section 715, Roadside Development Materials, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-715-02.2.1--Agricultural Limestone. Delete the first sentence of Subsection 715-02.2.1 on page 704 and substitute the following.

Agricultural limestone shall be either a hard-rock limestone material or a marl or chalk agricultural liming material as addressed in the latest amendment to the Mississippi Agricultural Liming Material Act of 1993, published by the Mississippi Department of Agriculture and Commerce.

907-715.02.2.1.1--Screening Requirements. Delete the first sentence of Subsection 715.02.2.1.1 on page 704.

Delete Subsection 715.02.2.1.2 on page 704 and substitute the following:

907-715-02.2.1.2--Calcium Carbonate Equivalent. Marl or chalk liming material shall not have less than 70% calcium and magnesium carbonate calculated as calcium carbonate equivalent when expressed on a dry weight basis.

907-715-02.2.1.3--Neutralizing Values. Hard-rock limestone material shall have a minimum Relative Neutralizing Value (RNV) of 63.0%, which is determined as follows:

$$\% \text{ RNV} = \text{CCE} \times (\% \text{ passing \#10 mesh} + \% \text{ passing \#50 mesh})/2$$

Where: CCE = Calcium Carbonate Equivalent

907-715.03--Seed.

907-715.03.2--Germination and Purity Requirements. Add the following to Table B on page 705.

Name (Kind)	Name (Variety)	Percent Germination	Percent Purity
GRASSES			
Rye Grass	Annual	80	98

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO SPECIAL PROVISION NO. 907-720-1

DATE: 10/04/2012

SUBJECT: Pavement Marking Material

Before Subsection 907-720.02 on page 1, add the following.

907-720.01--Glass Beads. After the first sentence of Subsection 720.01 on page 729, add the following.

The glass beads shall contain no more than 200 ppm (mg/kg) total concentration for lead, arsenic, or antimony. The manufacture shall furnish the Engineer with a certified test report indicating that the glass beads meet the above requirement.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-720-1

CODE: (IS)

DATE: 3/17/2008

SUBJECT: Pavement Markings Materials

Section 720, Pavement Marking Materials, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-720.02--Thermoplastic Pavement Markings. Delete the first paragraph of Subsection 720.02 on page 730 and substitute the following:

The thermoplastic material shall be lead free and conform to AASHTO Designation: M 249 except the glass beads shall be moisture resistant coated.

After the first sentence of the second paragraph of Subsection 720.02 on page 730, add the following:

In addition, the certification for the thermoplastic material shall state that the material is lead free.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-723-1

CODE: (SP)

DATE: 08/16/2007

SUBJECT: High Mast Lighting Wind Velocity

Section 723, Materials For Roadway Lighting Installation, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-723.04--High Mast Lighting Assembly.

907-723.04.1--Pole. Delete the last sentence of the first paragraph of Subsection 723.04.1 on page 792 and substitute the following.

Designed wind velocity shall be in accordance with the 2001 AASHTO Standard Specifications for Structural Supports for High Signs, Luminaires and Traffic Signals to support the number and type luminaires and lowering device required on the different assembly types. Design wind velocities shall be as follows:

- 140 MPH----- Hancock, Harrison & Jackson Counties
- 130 MPH----- Pearl River, Stone, & George Counties
- 120 MPH----- Lamar, Forrest, Perry & Greene Counties
- 110 MPH----- Pike, Walthall, Marion, Jefferson Davis, Covington, Jones & Wayne Counties
- 100 MPH----- Wilkinson, Amite, Adams, Franklin, Lincoln,, Lawrence, Simpson, Smith, Jasper & Clarke Counties
- 90 MPH----- All counties north of and including Jefferson, Copiah, Rankin, Scott, Newton, & Lauderdale

Ice Loading shall be considered in the design for structures in all counties above and including Washington, Humphreys, Holmes, Attala, Winston, & Noxubee.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO SPECIAL PROVISION NO. 907-804-13

| **DATE:** **08/28/2012**

SUBJECT: **Concrete Bridges And Structures**

After the second paragraph of Subsection 907-804.02.10 on page 2, add the following.

After the first paragraph of Subsection 804.02.10 on page 850, add the following.

If the Contractor chooses to cure the concrete in accordance with the requirements listed under **Length of Time Defined by Development of Compressive Strength** in Subsection 907-804.03.17, the compressive strength/maturity relationship shall be developed for the mixture design for a minimum of 28 days following the requirements of Subsection 907-804.03.15. The compressive strength/maturity relationship information shall be submitted with the mixture design information.

In the ** Note of Subsection 907-804.02.10 on page 2, delete “metakaolin” from the list of other cementitious materials.

After the first sentence of the last paragraph of Subsection 907-804.02.10 on page 3, add the following.

Mixture designs containing accelerating admixtures will not be approved. Admixtures providing a specific performance characteristic other than those of water reduction or set retardation may be used in accordance with the manufacturer’s recommended dosage range.

After Subsection 907-804.02.10.1.1 on page 3, add the following.

907-804.02.10.1.2--Proportioning on the Basis of Laboratory Trial Mixtures. Delete subparagraph d) of Subsection 804.02.10.1.2 on pages 852 & 853, and substitute the following.

- d) For each proposed mixture, at least three compressive test cylinders shall be made and cured in accordance with AASHTO Designation: T 126. Each change of water-cementitious ratio shall be considered a new mixture. The cylinders shall be tested for strength in accordance with AASHTO Designation: T 22 and shall be tested at 28 days.

After Subsection 907-804.02.10.3 on page 4, add the following.

After Subsection 804.02.10.3 on page 853, add the following.

907-804.02.10.3.1--Slump Retention of Class DS Concrete Mixture Designs. Prior to concrete placement, the Contractor shall provide test results of a slump loss test using approved methods to demonstrate that the mixture meets the four hour requirement in Subsection 907-803.02.7.1. These tests shall be conducted successfully by an approved testing laboratory within

30 days prior to installation of the trial shaft, with personnel from the Department's Central Laboratory present. The slump loss test shall be conducted at temperatures and conditions similar to those expected at the job site at the time of the installation of the trial shaft. The sample for the slump loss test shall be from a minimum batch size of four cubic yards of concrete. If the time between the previous successful slump loss test and the installation of the trial shaft exceeds 30 days, another successful slump loss test shall be performed on the first truckload of concrete as part of the installation of the trial shaft. This requirement limiting the time between the previous slump loss test and an installation of the trial shaft also applies to Class DS concrete mixture designs being transferred from another project. During any shaft installation a slump loss test shall be conducted by the Contractor at the direction of the Engineer from the concrete at the site for verification of slump loss requirements using a sample from a minimum batch size of four cubic yards of concrete.

Before Subsection 907-804.02.12.3 on page 5, add the following.

907-804.02.12.1.1--Elements of Plan. After item 3) in Subsection 804.02.12.1.1 on page 855, add the following.

4) Job Site Batch Adjustments by Addition of Chemical Admixtures:

The Plan shall address if the Contractor intends to adjust either the slump and/or total air content of a batch on the job site by adding chemical admixture(s) to a batch. The Contractor shall include the names of the personnel designated to perform this batch adjustment, the equipment used to add the chemical admixture(s), and the procedure by which the batch adjustment will be accomplished. Only the Contractor's designated personnel shall adjust a batch. Only calibrated dispensing equipment shall be used to add chemical admixture(s) to a batch. Only the procedure described in section of the Plan shall be utilized.

If the maximum permitted slump or total air content is exceeded after the addition of admixtures at the job site, the concrete shall be rejected.

If the Contractor elects to utilize Job Site Batch Adjustments by Addition of Chemical Admixture within Item 2, Procedures for Corrective Actions for Non Compliance of Specifications, to adjust batches which do not meet the minimum specification requirements for slump and/or total air content, no more than three batches on any one project shall be allowed to be adjusted.

5) Construction of Concrete Bridge Decks, including the following:

- the description of the equipment used for placing concrete on the bridge deck in accordance with Subsection 907-804.03.6 and, as applicable, Subsections 907-804.03.7 and 907-804.03.8 including any accessories added to the pump to ensure the entrained air in the concrete mixture remains entrained during pumping and depositing of the concrete mixture,
- the description of and the number of pieces of equipment used to consolidate the concrete in accordance with Subsection 907-804.03.6.2,

- the description of the equipment used to finish the bridge deck in accordance with Subsection 907-804.03.19.7,
- the plan for ensuring a continuous rate of finishing the bridge deck without delaying the application of curing materials within the time specified in Subsection 907-804.03.17, including ensuring a continuous supply of concrete throughout the placement with an adequate quantity of concrete to complete the deck and filling diaphragms and end walls in advance of deck placement,
- the plan for applying the curing materials within the time specified in Subsection 907-804.03.17,
- the description of the powered fogging equipment in accordance with Subsection 907-804.03.17,
- a sample of the documentation used as the daily inspection report for ensuring maintenance of the continuous wet curing in accordance with Subsection 907-804.03.17, as required,
- the description of the equipment used to apply the liquid membrane, including but not limited to, the nozzles, pumping/pressurization equipment, and liquid membrane tanks, in accordance with Subsection 907-804.03.17,
- the method for determining the rate of applied liquid membrane meets the application rate requirements in accordance with Subsection 907-804.03.17,
- a sample of the documentation used for the application rate verification of the liquid membrane in accordance with Subsection 907-804.03.17.

After Subsection 907-804.03.6.2 on page 7, add the following.

907-804.03.8--Pumping Concrete. Delete the second paragraph of Subsection 804.03.8 on page 866, and substitute the following.

Where concrete mixture is conveyed and placed by mechanically applied pressure (pumping), the equipment shall be suitable in kind and adequate in capacity for the work. The Contractor shall select concrete mixture proportions such that the concrete mixture is pumpable and placeable with the selected equipment.

The pumping equipment shall be thoroughly cleaned prior to concrete placement. Excess form release agent shall be removed from the concrete pump hopper. The Contractor shall prime the pump at no additional cost to the Department by pumping and discarding enough concrete mixture to produce a uniform mixture exiting the pump. At least 0.25 cubic yard of concrete mixture shall be pumped and discarded to prime the pump. This shall be accomplished by using the pump to fill a commercially-available six (6) cubic foot wheelbarrow to overflowing or filling a commercially-available eight (8) cubic foot wheel barrow to level. Only concrete mixture shall be added directly into the concrete pump hopper after placement has commenced. If anything other than concrete mixture is added to the concrete pump hopper, all concrete mixture in the concrete pump hopper and pump line shall be discarded and the pump re-primed at no additional cost to the Department.

The discharge end of the pump shall be of such a configuration that the concrete does not move in the pump line under its own weight. The intent of this requirement is to ensure that entrained air in the concrete mixture remains entrained during pumping and depositing the concrete mixture. This shall be accomplished with one or both of the following:

- a minimum 10-foot flexible hose attached to the discharge end of a steel reducer having a minimum length of three (3) feet and a minimum reduction in area of 20% which is attached to the discharge end of the pump line, or
- a flexible reducing hose to the discharge end of the pump line with a minimum reduction in area of 20% over a minimum 10-foot hose length.

Regardless of the configuration chosen, the Contractor shall ensure that the concrete is pumped and does not free-fall more than five (5) feet within the entire length of pump line and after discharge from the end of pump line.

The Contractor shall not have any type of metal elbow, metal pipe, or other metal fitting within five (5) feet of any person during discharge of concrete mixture.

Boom pumps shall have a current Concrete Pump Manufacturers Association's ASME/ANSI B30.27 certification. Equipment added to the boom and pump line shall meet the pump manufacturer's specifications and shall not exceed the manufacturer's maximum recommended weight limit for equipment added to the boom and pump line.

The operation of the pump shall be such that a continuous stream of concrete without air pockets is produced. When pumping is completed, the concrete remaining in the pipe line, if it is to be used, shall be ejected in such a manner that there will be no contamination of the concrete or separation of the ingredients. After this operation, the entire equipment shall be thoroughly cleaned.

Before Subsection 907-804.03.15 on page 7, add the following.

907-804.03.14.2--Stay-In-Place Metal Forms. Delete the sentence in Subsection 804.03.14.2 on page 871 and substitute the following.

Stay-in-place (SIP) metal forms are corrugated metal sheets permanently installed between the supporting superstructure members. After the concrete has cured, these forms shall remain in place as permanent, non-structural members of the bridge.

Pay quantities for bridge deck concrete will be computed from the dimensions shown in the Contract Plans with no allowance for changes in deflection and /or changes in dimensions necessary to accommodate the SIP metal forms.

There will be no direct payment for the cost of the forms and form supports, or any material, tools, equipment, or labor incidental thereto, but the cost shall be considered absorbed in the contract unit price for bridge deck concrete.

Before fabricating any material, three (3) complete sets of SIP metal form shop drawings and design calculations, bearing the Design Engineer's Seal, shall be submitted to the Director of Structures, State Bridge Engineer, through the Project Engineer, for review. The Contractor's SIP metal form Design Engineer shall be a MS Registered Professional Engineer who is knowledgeable in the field of structural design.

In no case shall additional dead load produced by the use of SIP metal forms overstress any bridge component. Design calculations shall indicate any additional dead load from SIP metal form self-weight, form support hangers, concrete in flutes, concrete due to form deflection, etc. not included in the Contract Plans. The additional dead loads shall be clearly labeled and tabulated on the shop drawings. Bridge Division will evaluate the additional load for overstress of the bridge components. In the event that the additional dead load produces an overstress in any bridge component, Bridge Division will reject the Contractor's design. Deflection and loads produced by deflection of the SIP metal forms shall be considered and indicated in the design calculations.

The cambers and deflections provided in the Contract Plans do not consider the effects of SIP metal forms. The Contractor's Engineer shall take into account the weight of the forms and any additional dead load when developing the "Bridge Superstructure Construction Plan".

For the purpose of reducing any additional dead load produced by the SIP metal forms, the flutes of SIP metal forms may be filled with polystyrene foam. When polystyrene foam is used to fill the forms, the form flutes shall be filled completely; no portion of the polystyrene foam shall extend beyond the limits of the flutes. The Contractor shall ensure that the polystyrene foam remains in its required position within flutes during the entire concrete placement process. The Contractor shall not use reinforcing steel supports or other accessories in such a manner as to cause damage to the polystyrene foam. All damaged polystyrene foam shall be replaced to the satisfaction of the Project Engineer. All welding of formwork shall be completed prior to placement of polystyrene foam.

For bridges not located in horizontal curves, the Contractor may reduce the additional dead load by matching the flute spacing with the transverse steel spacing of the bottom layer. The bottom longitudinal layer of steel shall have one (1) inch of minimum concrete cover measured from the bottom of the reinforcing to the top of the flute. The Contractor will not be allowed to vary the reinforcing steel spacing or size from the Contract Plans for the purpose of matching flute spacing.

907-804.03.14.2.1--Materials. SIP metal forms and supports shall meet the requirements of ASTM Designation: A653 having a coating designation G165. Form materials that are less than 0.03-inch uncoated thickness shall not be allowed.

907-804.03.14.2.2--Certification. The Contractor shall provide written certification from the manufacturer stating the product meets the requirements of this specification to the Project Engineer along with the delivery of the coated forms to the job site.

907-804.03.14.2.3--Polystyrene Foam. The polystyrene foam shall be comprised of expanded polystyrene manufactured from virgin resin of sufficient density to support the weight of concrete without deformation. The polystyrene foam shall be extruded to match the geometry of the flutes and provide a snug fit. The polystyrene foam shall have a density of not less than 0.8 pounds per cubic foot. The polystyrene foam shall have water absorption of less than 2.6% when tested according to ASTM Designation: C272. The Contractor shall provide written certification from the manufacturer stating the polystyrene foam product meets the requirements of this specification to the Project Engineer along with the delivery of the coated forms to the job site.

907-804.03.14.2.4--Design. The design of the SIP metal forms shall meet the following criteria.

1. The maximum self-weight of the stay in place metal forms, plus the weight of the concrete or expanded polystyrene required to fill the form flutes (where used), shall not exceed 20 psf.
2. The forms shall be designed on the basis of dead load of form, reinforcement, and plastic concrete plus 50 pounds per square foot for construction loads. The design shall use a unit working stress in the steel sheet of not more than 0.725 of the specified minimum yield strength of the material furnished, but not to exceed 36,000 psi.
3. Deflection under the weight of the forms, reinforcement, and plastic concrete shall not exceed 1/180 of the form span or 1/2 inch, whichever is less, for form spans of 10 feet or less, or 1/240 of the form span or 3/4 inch, whichever is less, for form spans greater than 10 feet.
4. The design span of the form shall equal the clear span of the form plus two (2) inches. The span shall be measure parallel to the form flutes.
5. Physical design properties shall be computed in accordance with requirements of the AISI Specifications for the Design of Cold Formed Steel Structural Members, latest published edition.
6. The design concrete cover required by the plans shall be maintained for all reinforcement.
7. The plan dimensions of both layers of primary deck reinforcement from the top surface of the concrete deck shall be maintained.
8. The SIP metal form shall not be considered as lateral bracing for compression flanges of supporting structural members.
9. SIP metal forms shall not be used under closure pours or in bays where longitudinal slab construction joints are located. SIP metal forms shall not be used under cantilevered slabs such as the overhang outside of fascia members.
10. Forms shall be secured to the supporting members by means other than welding directly to the member. Welding to the top flanges of steel stringers and/or girders shall not be allowed. Alternate installation procedures shall be submitted addressing this condition.

907-804.03.14.2.5--Construction. SIP metal form sheets shall not rest directly on the top of the stringer or floor beam flanges. Sheets shall be fastened securely to form supports, and maintain a minimum bearing length of one (1) inch at each end for metal forms. Form supports shall be placed in direct contact with the flange of the stringer or floor beam. All attachments for coated metal forms shall be made by bolts, clips, screws, or other approved means.

907-804.03.14.2.6--Form Galvanizing Repairs. Where forms or their installation are unsatisfactory in the opinion of the Project Engineer, either before or during placement of the concrete, the Contractor shall correct the defects before proceeding with the construction work. The

cost of such corrective work shall be at the sole expense of the Contractor. Minor heat discoloration in areas of welds shall not be touched up.

907-804.03.14.2.7--Placing of Concrete. The Contractor shall insure that concrete placement does not damage the SIP metal forms. The concrete shall be vibrated to avoid honeycomb and voids, especially at construction joints, expansion joints, valleys and ends of form sheets. Approved pouring sequences shall be used. Calcium chloride or any other admixture containing chloride salts shall not be used in the concrete. The completed SIP metal form system shall be sufficiently tight to prevent leakage of mortar or concrete.

907-804.03.14.2.8--Inspection. The Project Engineer will observe the Contractor's method of construction during all phases of the construction of the bridge deck slab, including the installation of the SIP metal form system; location and fastening of the reinforcement; composition of concrete items; mixing procedures, concrete placement, and vibration; and finishing of the bridge deck. Should the Project Engineer determine that the procedures used during the placement of the concrete warrant inspection of the underside of the deck, at least one section of the metal forms shall be removed in each span for this purpose. This shall be done as soon after placing the concrete as practical in order to provide visual evidence that the concrete mix and the procedures are obtaining the desired results. An additional section shall be removed in any span if the Project Engineer determines that there has been any change in the concrete mix or in the procedures warranting additional inspection.

If, in the Project Engineer's judgment, inspection is needed to check for defects in the bottom of the deck or to verify soundness, the SIP metal forms shall be sounded with a hammer after the deck concrete has been in place a minimum of two days. If sounding discloses areas of doubtful soundness to the Project Engineer, the SIP metal forms shall be removed from such areas for visual inspection after the concrete has attained adequate strength. The SIP metal bridge deck forms shall be removed at no expense to the State.

At locations where sections of the metal forms have been removed, the Project Engineer will not require the Contractor to replace the metal forms. The adjacent metal forms and supports shall be repaired to present a neat appearance and to ensure their satisfactory retention. As soon as the form is removed, the Project Engineer will examine the concrete surfaces for cavities, honeycombing, and other defects. If irregularities are found and the Project Engineer determines that these irregularities do not justify rejection of the work, the concrete shall be repaired as directed by the Project Engineer. If the Project Engineer determines that the concrete where the form is removed is unsatisfactory, additional metal forms as necessary shall be removed to inspect and repair the slab, and the Contractor's method of construction shall be modified as required to obtain satisfactory concrete in the slab. All unsatisfactory concrete shall be removed and replaced as directed at no expense to the State.

If the method of construction and the results of the inspections as outlined above indicate that sound concrete has been obtained throughout the slabs, the amount of sounding and form removal may be reduced when approved by the Project Engineer.

The Contractor shall provide a safe and convenient means of conducting of the inspection.

Delete Table 6 of Subsection 907-804.03.15 on page 8, and substitute the following.

Table 6
Minimum Compressive Strength Requirements for Form Removal

Forms:

Columns	1000 psi
Side of Beams	1000 psi
Walls not under pressure	1000 psi
Other Parts	1000 psi

Centering:

Under Beams	2400 psi
Under Bent Caps	2000 psi

Limitation for Placing Beams on:

Pile Bents, pile under beam	2000 psi
Frame Bents, two or more columns	2200 psi
Frame Bents, single column	2400 psi

Forms for bridge deck slabs overhead and bridge deck slabs between beams shall be removed with the approval of the Engineer, between two weeks and four weeks after the removal of the wet burlap applied in accordance with Subsection 907-804.03.17.1, or application of liquid membrane applied in accordance with Subsection 907-804.03.17.2.

Delete the second paragraph of Subsection 907-804.03.16.1 on page 9, and substitute the following.

At the option of the Contractor with the approval of the Engineer, when concrete is placed during cold weather and there is a probability that the ambient temperatures will be lower than 40°F, an approved maturity meter may be used to determine concrete strengths by inserting probes into concrete placed in a structure. The minimum number of maturity meter probes required for each structural component shall be in accordance with Table 7. An approved insulating blanketing material shall be used to protect the work when ambient temperatures are less than 40°F and shall remain in place until the required concrete strength in Table 6 is achieved. Within 30 minutes of removal of the insulating blanketing material in any area, the Contractor shall have curing of the concrete established in accordance with the requirements in Subsection 907-804.03.17. Procedures for using the maturity meter and developing the strength/maturity relationship shall follow the requirements of AASHTO Designation: T 325 and ASTM Designation: C 1074 specifications. Technicians using the maturity meter or calculating strength/maturity graphs shall be required to have at least two hours of training prior to using the maturity equipment.

Before Subsection 907-804.03.19 on page 9, add the following.

907-804.03.17--Curing Concrete. Delete Subsection 804.03.17 on pages 874 & 875, and substitute the following.

Curing is defined as all actions taken to ensure the moisture and temperature conditions of freshly placed concrete exist so the concrete may develop its potential properties. Curing shall take place from the time of placement until its potential properties have developed. The Contractor shall use the guidance in ACI 308R-01 to:

- a) cure the concrete in such a manner as to prevent premature moisture loss from the concrete,
- b) supply additional moisture to the concrete as required in order to ensure sufficient moisture within the concrete, and
- c) maintain a concrete temperature beneficial to the concrete.

Curing in accordance with the requirements in either Subsection 907-804.03.17.1 or Subsection 907-804.03.17.2 shall be completely established within 20 minutes after finishing, except as noted for bridge decks. Finishing is complete when the pan drag, burlap drag, or other is complete.

The length of time for curing shall be maintained in accordance with either of the following:

1. Prescribed Length of Time:

- a) Curing following the requirements of Subsection 804.03.17.1 shall continue uninterrupted for at least 14 days.
- b) Curing following the requirements of Subsection 804.03.17.2 shall continue uninterrupted for at least 10 days.

OR

2. Length of Time Defined by Development of Compressive Strength:

Curing following the application requirements of Subsection 907-804.03.17.1 or Subsection 907-804.03.17.2 shall continue uninterrupted for each day's production until the compressive strength of the concrete exceeds 75% of the 28-day compressive strength submitted as the Basis of Proportioning per Subsection 907-804.02.10.1. Therefore, if an area is being cured in accordance with Subsection 907-804.03.17.1, the curing by wet burlap shall continue until the concrete in that area has attained a minimum of 75% of the 28-day compressive strength submitted as the Basis of Proportioning per Subsection 907-804.02.10.1. Likewise, if an area is being cured in accordance with Subsection 907-804.03.17.2, the curing by liquid membrane shall continue until the concrete in that area has attained a minimum of 75% of the 28-day compressive strength submitted as the Basis of Proportioning per Subsection 907-804.02.10.1.

The compressive strength of the concrete may be determined by the use of maturity meter in accordance with Subsection 907-804.03.15.

907-804.03.17.1--Water With Waterproof Cover. All burlap shall be completely saturated and wet prior to placing it on the concrete. The burlap shall have been fully soaked in water for a minimum of 12 hours prior to placement on the concrete.

For bridge decks, the Contractor shall apply one (1) layer of saturated burlap within 20 minutes of the initial strike-off for bridges without a skew and 25 minutes of the initial strike-off for bridges

with a skew. For all other concrete, the Contractor shall apply one (1) layer of saturated burlap within 20 minutes of completing finishing.

Following the first layer of burlap, the Contractor shall apply a second layer of saturated burlap within five (5) minutes of applying the first layer. The concrete surface shall not be allowed to dry after strike-off or at any time during the curing period.

The Contractor shall maintain the burlap in a fully wet condition using powered fogging equipment capable of producing a fog spray of atomized droplets of water until the concrete has gained sufficient strength to allow foot traffic without the foot traffic marring the surface of the concrete. Burlap shall not be maintained in the fully wet condition using equipment which does not produce a fog spray of atomized droplets of water or by use of manually pressurized sprayers. For bridge decks, once the concrete has gained sufficient strength to allow foot traffic which does not mar the surface of the concrete, soaker hoses shall be placed on the burlap. The soaker hoses shall then be supplied with running water continuously to maintain continuous saturation of all burlap and the entire concrete surface.

If there is a delay in the placement of the first layer of saturated burlap outside the time limit, the struck-off and finished concrete shall be kept wet by use of the powered fogging equipment used to keep the burlap wet.

White polyethylene sheets shall be placed on top of the wet burlap and, as applicable, soaker hoses covering the entire concrete surface as soon as practical and not more than 12 hours after the placement of the concrete. White polyethylene sheets of the widest practical width shall be used, overlapping adjacent sheets a minimum of six inches (6") and tightly sealed with an adhesive like pressure sensitive tape, mastic, glue, or other approved methods to form a complete waterproof cover of the entire concrete surface. White polyethylene sheets which overlap a minimum of two feet (2') may be held in place using means other than an adhesive. The white polyethylene sheets shall be secured so that wind will not displace them. The Contractor shall immediately repair the broken or damaged portions or replace sections that have lost their waterproof qualities.

If burlap and/or white polyethylene sheets are temporarily removed for any reason during the curing period, the Contractor shall keep the entire exposed area continuously wet. The saturated burlap and white polyethylene sheets shall be replaced, resuming the specified curing conditions, as soon as possible.

The Contractor shall inspect the concrete surface once every 8 hours for the entirety of the curing period, so that all areas remain wet for the entire curing period and all curing requirements are satisfied and document the inspection in accordance with Subsection 907-804.03.17.1.1.

At the end of the curing period, one coating of liquid membrane shall be applied following the requirements of Subsection 907-804.03.17.1.2. The purpose of the coating of liquid membrane is to allow for slow drying of the concrete. The application of liquid membrane to any area shall be complete within 30 minutes of the beginning of removal of the white polyethylene sheets, soaker hoses, and burlap from this area.

907-804.03.17.1.1--Documentation. The Contractor shall provide the Engineer with a daily inspection report that includes:

- documentation that identifies any deficiencies found (including location of deficiency);
- documentation of corrective measures taken;
- a statement of certification that all areas are wet and all curing material is in place on the entire bridge deck;
- documentation showing the time and date of all inspections and the inspector's signature;
- documentation of any temporary removal of curing materials including location, date and time, length of time curing was removed, and means taken to ensure exposed area was kept continuously wet.

907-804.03.17.1.2--Liquid Membrane. At the end of the 14-day wet curing period the wet burlap and polyethylene sheets shall be removed and within 30 minutes, the Contractor shall apply white liquid membrane to the deck. The liquid membrane shall be thoroughly mixed within the time recommended by the liquid membrane producer but no more than an hour before use. If the use of liquid membrane results in a streaked or blotched appearance, the method shall be stopped and water curing applied until the cause of defective appearance is corrected.

The liquid membrane shall be applied when no free water remains on the surface but while the surface is still wet. The liquid membrane shall be applied according to the manufacturer's instructions with a minimum spreading rate per coat of one (1) gallon per 200 square feet of concrete surface. If the concrete is dry or becomes dry, the Contractor shall thoroughly wet it with water applied as a fog spray by means of approved equipment.

The application of liquid membrane shall be accomplished by the use of power applied spray equipment using nozzles and other equipment recommended by the liquid membrane producer. Manually pressurized or manual pump-up type sprayers shall not be used to apply the first application of liquid membrane.

As a visual guide, the color of concrete covered with the required amount of liquid membrane should be indistinguishable from a sheet of commercially available standard "letter" size white copier paper placed on top of it when viewed from a distance of about five feet (5') away horizontally if standing on the same grade as the concrete. The appearance of the concrete does not supersede applying the minimum spreading rate.

The coating shall be protected against marring for at least seven (7) days after the application of the curing compound. The coating on bridge decks shall receive extra attention and may require additional protection as required by the Engineer. All membrane marred or otherwise disturbed shall be given an additional coating. Manually pressurized or manual pump-up type sprayers may be used for giving marred areas the required additional application of liquid membrane. Should the surface coating be subjected repeatedly to injury, the Engineer may require that the water curing method be applied at once.

The 7-day period during which the liquid membrane is applied and protected shall not be reduced even if the period of wet curing is extended past the required 14 days.

907-804.03.17.1.2.1--Liquid Membrane Documentation. The Contractor shall make available to the Engineer an application rate verification method and any information necessary during application of the liquid membrane to verify that the rate of application meets the prescribed rate

for the various surfaces of the concrete, including, but not limited to, the top surface of the bridge deck and exposed sides of the bridge deck after any forms are removed. The Contractor shall submit this application verification method to the Engineer in accordance with Subsection 907-804.02.12.1.1.

One method of verifying the rate of application is as follows:

1. Determine the volume of liquid membrane in the container. For a container with a uniform cross-sectional area, for example a 55-gallon drum, determine the area of the cross-section. Determine the height of the surface of the liquid membrane from the bottom of the container. This may be accomplished by inserting a sufficiently long, clean dip-stick parallel with the axis of the container into the liquid membrane until the inserted end of the dip-stick contacts the bottom of the container. On removing the dip-stick, measure the length from the end which was inserted to the point on the dip-stick where the liquid membrane ceases to coat the dip-stick. Multiply the area of the cross-section by the height of the level of liquid membrane, maintaining consistent units, to determine the volume.
2. Perform step 1 prior to beginning applying the liquid membrane to establish the initial volume.
3. During the period of application, perform step 1 each 100 square feet of bridge deck.
4. In order to meet the required application rate of one (1) gallon per 200 square feet, the amount in the container shall be at least 0.5 gallon less than the previous volume in the previous 100 square feet. Other changes in volume may apply depending on the manufacturer's recommended application rate.
5. Additional applications to an area shall be applied until the required rate is satisfied. Areas which are not visually satisfactory to the Engineer shall have additional liquid membrane applied as directed by the Engineer.

The amount of liquid membrane applied shall be determined each day using the application verification method. This information shall be submitted to the Engineer within 24 hours of applying the liquid membrane.

907-804.03.17.2--Liquid Membrane Method. Surfaces on which curing is to be by liquid membrane shall be given the required surface finish prior to the application of liquid membrane. Concrete surfaces cured by liquid membrane shall receive two applications of white liquid membrane. Neither application shall be made from a position supported by or in contact with the freshly placed concrete. Both applications shall be applied perpendicularly to the surface of the concrete.

When using liquid membrane, the liquid membrane shall be thoroughly mixed within the time recommended by the liquid membrane producer but no more than an hour before use. If the use of liquid membrane results in a streaked or blotched appearance, the method shall be stopped and water curing applied until the cause of defective appearance is corrected.

The application of liquid membrane shall accomplished by the use of power applied spray equipment using nozzles and other equipment recommended by the liquid membrane producer. Manually pressurized or manual pump-up type sprayers shall not be used to apply the first two applications of liquid membrane.

The liquid membrane shall be applied when no free water remains on the surface but while the surface is still wet. The liquid membrane shall be applied according to the manufacturer's instructions with a minimum spreading rate per coat of one (1) gallon per 200 square feet of concrete surface. If the concrete is dry or becomes dry, the Contractor shall thoroughly wet it with water applied as a fog spray by means of approved equipment.

The first application of the liquid membrane shall be made as the work progresses. For bridge decks, the first application shall be completed in each area of the deck within 20 minutes of initial strike-off for bridges with no skew and within 25 minutes of initial strike-off for bridges with skew. For all other concrete, the first application of the liquid membrane shall be completed within 20 minutes of finishing.

The second application shall be applied within 30 minutes after the first application. The liquid membrane shall be uniformly applied to all exposed concrete surfaces.

As a visual guide, the color of concrete covered with the required amount of liquid membrane should be indistinguishable from a sheet of commercially available standard "letter" size white copier paper placed on top of it when viewed from a distance of about five feet (5') away horizontally if standing on the same grade as the concrete. The appearance of the concrete does not supersede applying the minimum spreading rate.

The Contractor shall make available to the Engineer an application rate verification in accordance with Subsection 907-804.03.17.1.2.1.

The coating shall be protected against marring for at least 10 days after the application of the curing compound. The coating on bridge decks shall receive extra attention and may require additional protection as required by the Engineer. All membrane marred or otherwise disturbed shall be given an additional coating. Manually pressurized or manual pump-up type sprayers may be used for giving marred areas the required additional application of liquid membrane. Should the surface coating be subjected repeatedly to injury, the Engineer may require that the water curing method be applied at once.

Delete Subsection 907-804.19.7 on page 9, and substitute the following.

907-804.03.19.7--Finishing Bridge Decks.

907-804.03.19.7.1--General. Delete the third paragraph of Subsection 804.03.19.7.1 on page 884, and substitute the following.

Except when indicated otherwise on the plans, the finish of the bridge deck shall be either a belt finish, a broom finish, or one of the following drag methods: pan, double pan, burlap, or pan and burlap. Manual finishing of the bridge deck shall be performed only in areas inaccessible by the finishing equipment mounted to the strike-off screed, but shall not hinder the requirements for curing in accordance with Subsection 907-804.03.17.1. The surface texture specified and surface requirements shall be in accordance with the applicable requirements of Subsections 501.03.17 and 501.03.18 modified only as the Engineer deems necessary for bridge deck construction operations.

At no time shall water on the surface of the concrete from bleeding, fogging, curing, or other sources be worked into the concrete or used as an aid for finishing.

Regardless of the method of finishing selected, requirements for curing per Subsection 907-804.03.17 shall be completed within the specified time limits. If the requirements in Subsection 907-804.03.17 are not completed within the specific time limits, the Contractor shall cease operations, revise his operations up to and including acquiring new or additional equipment or additional personnel in order to satisfy the requirements in Subsection 907-804.03.17, and, on approval from the Engineer, resume operations

907-804.03.19.7.2--Longitudinal Method. Before the first paragraph of Subsection 804.03.19.7.2 on page 884, add the following.

The longitudinal method may be used for repairs to bridge decks or bridge widening projects. For bridge widening projects, the time for establishing curing in accordance with Subsections 907-804.03.17 shall be increased to within 30 minutes for bridges without skew and within 35 minutes for bridges with skew.

907-804.03.19.7.3--Transverse Method. Delete the first sentence of the second paragraph of Subsection 804.03.19.7.3 on page 885, and substitute the following.

The machine shall be so constructed and operated as to produce a bridge deck of uniform density with minimum manipulation of the fresh concrete and achieved in the shortest possible time.

Delete the fourth paragraph of Subsection 804.03.19.7.3 on page 885, and substitute the following.

At least one dry run shall be made the length of each pour with a "tell-tale" device attached to the screed carriage to assure the specified clearance to the reinforcing steel.

Delete the last sentence of the fifth paragraph of Subsection 804.03.19.7.3 on page 885, and substitute the following.

The screed shall be mechanically actuated to deliver the screeding action and for travel in a longitudinal direction at a uniform rate along the bridge deck.

Delete the last paragraph of Subsection 804.03.19.7.3 on page 886, and substitute the following.

Other finishing requirements shall be in accordance with the general requirements in Subsection 907-804.03.19.7.1 and as specified on the plans.

Regardless of the finish, the requirements for curing per Subsection 907-804.03.17 shall be completed within the specified time limits.

After Subsection 907-804.03.19.7.4 on page 9, add the following.

Delete the title of Subsection 804.03.19.7.4.1.3 on page 888, and substitute the following.

907-804.03.19.7.4.1.3--Final Surface Texture.

907-804.03.20--Opening Bridges.

907-804.03.20.2--Construction Traffic. Delete the paragraph in Subsection 804.03.20.2 on page 889, and substitute the following:

Unless otherwise specified, the concrete bridge decks shall be closed to construction traffic for the time required for curing in Subsection 907-804.03.17 and until the required compressive strength for the concrete is obtained.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-804-13

CODE: (IS)

DATE: 11/09/2010

SUBJECT: Concrete Bridges And Structures

Section 804, Concrete Bridges And Structures, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-804.02-- Materials.

907-804.02.1--General. Delete the third and fourth sentences of the first paragraph of Subsection 804.02.1 on page 846, and substitute the following:

For projects with 1000 cubic yards and more, quality control and acceptance shall be achieved through statistical evaluation of test results. For projects of more than 200 but less than 1000 cubic yards, quality control and acceptance shall be achieved by individual test results.

Add the following materials to the list of materials in Subsection 804.02.1 on page 847.

- Blended Cement..... 907-701.01 and 907-701.04
- Ground Granulated Blast Furnace Slag (GGBFS)..... 907-714.06
- Silica Fume 907-714.07.2

907-804.02.8--Laboratory Accreditation. In Table 1 of Subsection 804.02.8 on page 849, substitute AASHTO: R 39 - Making and Curing Concrete Test Specimens in the Laboratory for AASHTO: T 126 - Making and Curing Concrete Test Specimens in the Laboratory.

907-804.02.9--Testing Personnel. Delete Table 2 in this subsection and replace it with the following.

Table 2

Concrete Technician's Tasks	Test Method Required	Certification Required**
Sampling or Testing of Plastic Concrete	AASHTO Designation:T 23, T 119, T 121, T 141, T 152, T 196, and ASTM Designation: C 1064	MDOT Class I certification
Compressive Strength Testing of Concrete Cylinders	AASHTO Designation: T 22 and T 231	MDOT Concrete Strength Testing Technician certification
Sampling of Aggregates	AASHTO Designation: T 2	Work under the supervision of an MDOT Class II certified technician

Testing of Aggregates	AASHTO Designation: T 19, T 27, T 84, T 85, T 248, and T 255	MDOT Class II certification
Proportioning of Concrete Mixtures*	AASHTO Designation: M 157 and R 39	MDOT Class III
Interpretation and Application of Maturity Meter Readings	AASHTO Designation: T 325 and ASTM Designation: C 1074	MDOT Class III or Two hours maturity method training

* Technicians making concrete test specimens for meeting the requirements of Subsection 804.02.10.1.2 shall be MDOT Class I certified and under the direct supervision of an MDOT Class III certified technician.

** MDOT Class I certification encompasses the same test procedures and specifications as ACI Concrete Field Testing Technician Grade I. MDOT Class II certification encompasses the same test procedures and specifications as ACI Aggregate Testing Technician - Level 1. MDOT Concrete Strength Testing Technician encompasses the same test procedures and specifications as ACI Concrete Strength Testing certification.

For specifics about the requirements for each level of certification, please refer to the latest edition of the Department’s *Concrete Field Manual*. Technicians holding current MDOT Class I, MDOT Class II and/or MDOT Class III certifications shall be acceptable until those certifications expire. Upon a current certification expiration, recertification with the certifications listed in Table 2 shall be required. Technicians currently performing either specific gravity testing of aggregates or compressive strength tests shall be required to either:

- have the required MDOT certification listed in Table 2, or
- have a current MDOT Class III certification or work under the direct supervision of current MDOT Class III technician, and have demonstrated the specific gravity and/or compressive strength test during the inspection of laboratory equipment by the Materials Division, Concrete Section.

907-804.02.10--Portland Cement Concrete Mix Design. Delete the first sentence of the first paragraph of Subsection 804.02.10 on page 850 and substitute the following:

At least 30 days prior to production of concrete, the Contractor shall submit to the Engineer proposed concrete mixture designs complying with the Department’s *Concrete Field Manual*.

Delete the Notes under Table 3 of Subsection 804.02.10 on pages 850 & 851, and substitute the following:

- * Maximum size aggregate shall conform to the concrete mix design for the specified aggregate.
- ** The replacement limits of Portland cement by weight by other cementitious materials (such as fly ash, GGBFS, metakaolin, silica fume, or others) shall be in accordance with the values in Subsection 907-701.02. Other hydraulic cements may be used in accordance with the specifications listed in Section 701.

*** The slump may be increased up to eight (8) inches with :

- an approved water-reducing admixture,
- an approved water-reducing/set-retarding admixture, or
- a combination of an approved water-reducing admixture and an approved set-retarding admixture, in accordance with 907-713.02. Minus slump requirements shall meet those set forth in Table 3 of AASHTO Designation: M157.

**** Entrained air is not required except for concrete exposed to seawater. For concrete exposed to seawater, the total air content shall be 3.0 % to 6.0%. For concrete not exposed to seawater, the total air content shall not exceed 6.0%.

***** Class DS Concrete for drilled shafts shall have an 8±1-inch slump.

Delete the last paragraph of Subsection 804.02.10 on page 851 and substitute the following:

At least one water-reducing admixture shall be used in all classes of concrete in accordance with the manufacturer's recommended dosage range. Any combinations of admixtures shall be approved by the Engineer before their use.

907-804.02.10.1.1--Proportioning on the Basis of Previous Field Experience of Trial Mixtures. Delete the first sentence of the first paragraph of Subsection 804.02.10.1.1 on page 851, and substitute the following:

Where a concrete production facility has a record, based on at least 10 consecutive strength tests from at least 10 different batches within the past 12 months from a mixture not previously used on Department projects, the standard deviation shall be calculated.

907-804.02.10.3--Field Verification of Concrete Mix Design. Delete the first sentence of the third paragraph of Subsection 804.02.10.3 on page 853 and substitute the following:

For all Classes of concrete, the mixture shall be verified to yield within 2.0% of the correct volume when all the mix water is added to the batch.

For all Classes of concrete other than DS, F, and FX, the mixture shall produce a slump within a minus 1½-inch tolerance of the maximum permitted for mixtures with a maximum permitted slump of three inches (3") or less or within a minus 2½-inch tolerance of the maximum permitted for mixtures with a maximum permitted slump of greater than three inches (3"), and producing a total air content within a minus 1½ percent tolerance of the maximum allowable air content in Table 3.

For Class DS, the slump shall be within the requirements in Note ***** below Table 3. For Class DS exposed to seawater, the total air content shall be within a minus 1½ percent tolerance of the maximum allowable air content in Note **** below Table 3. For Class DS not exposed to seawater the total air content shall be within the requirements in Note **** below Table 3.

For Classes F and FX, the slump shall be within a minus 1½-inch tolerance of the maximum permitted for mixtures with a maximum permitted slump of three inches (3") or less or within a minus 2½-inch tolerance of the maximum permitted for mixtures with a maximum permitted

slump of greater than three inches (3"). For Classes F and FX exposed to seawater, the total air content shall be within a minus 1½ percent tolerance of the maximum allowable air content in Note **** below Table 3. For Classes F and FX not exposed to seawater the total air content shall be within the requirements in Note **** below Table 3.

Delete the third sentence of the third paragraph of Subsection 804.02.10.3 on page 853, and substitute the following:

If the requirements of yield, slump, or total air content are not met within three (3) production days after the first placement, subsequent field verification testing shall not be permitted on department projects, and the mix design shall not be used until the requirements listed above are met

907-804.02.10.4--Adjustments of Mixture Proportions. Delete the paragraph in Subsection 804.02.10.4 on page 854, and substitute the following:

The mixture may be adjusted by the Class III Certified Technician representing the Contractor in accordance with the allowable revisions listed in the Department's Concrete Field Manual, paragraph 5.7. Written notification shall be submitted to the Engineer a minimum of seven (7) days prior to any source or brand of material change, aggregate size change, allowable material type change, or decrease in any cementitious material content. Any adjustments of the concrete mixture design shall necessitate repeat of field verification procedure as described in Subsection 804.02.10.3 and approval by the Engineer.

907-804.02.11--Concrete Batch Plants. Delete the first three paragraphs of Subsection 804.02.11 on page 854, and substitute the following:

The concrete batch plant shall meet the requirements of the National Ready Mixed Concrete Association *Quality Control Manual, Section 3, Plant Certification Checklist* as outlined in the latest edition of the Department's *Concrete Field Manual*. The Contractor shall submit a copy of the approved checklist along with proof of calibration of batching equipment, i.e., scales, water meter, and admixture dispenser, to the Engineer 30 days prior to the production of concrete.

For projects with 1000 cubic yards and more, the concrete batch plant shall meet the requirements for an automatic system capable of recording batch weights. It shall also have automatic moisture compensation for the fine aggregate. For projects of more than 200 but less than 1000 cubic yards the plant can be equipped for manual batching with a fine aggregate moisture meter visible to the plant operator.

The concrete batch plant shall have available adequate facilities to cool concrete during hot weather.

Mixer trucks to be used on the project are to be listed in the checklist and shall meet the requirements of the checklist.

907-804.02.12--Contractor's Quality Control. Delete the fourth paragraph of Subsection 804.02.12 on page 854 & 855, and substitute the following:

The Contractor's Quality Control program shall encompass the requirements of AASHTO Designation: M 157 into concrete production and control, equipment requirements, testing, and batch ticket information. The requirement of AASHTO Designation: M 157, Section 11.7 shall be followed except, on arrival to the job site, a maximum of 1½ gallons per cubic yard is allowed to be added. Water shall not be added at a later time. If the maximum permitted slump is exceeded after the addition of water at the job site, the concrete shall be rejected.

907-804.02.12.3--Documentation. After the second sentence of the second paragraph of Subsection 804.02.12.3 on page 856, add the following:

Batch tickets and gradation data shall be documented in accordance with Department requirements. Batch tickets shall contain all the information in AASHTO Designation: M157, Section 16 including the additional information in Subsection 16.2 with the following exception: the information listed in paragraphs 16.2.7 and 16.2.8 is not required. Batch tickets shall also contain the concrete producer's permanent unique mix number assigned to the concrete mix design.

907-804.02.12.5--Non-Conforming Materials. In Table 4 of Subsection 804.02.12.5 on page 857, delete “/ FM” from the requirements on line B.3.a.

In Table 4 of Subsection 804.02.12.5 on page 857, replace “One set (two cylinders) for 0-100 yd³ inclusive” with “A minimum of one set (two cylinders) for each 100 yd³,”

907-804.02.13--Quality Assurance Sampling and Testing. Delete subparagraph c) in Subsection 804.02.13 on page 858 and substitute the following:

- c) For concrete, the Contractor's QC and Department's QA testing of concrete compressive strengths compare when using the data comparison computer program with an alpha value of 0.01 for projects with 1000 cubic yards and more; or, strength comparisons are within 990 psi for projects of more than 200 but less than 1000 cubic yards.

In Table 5 of Subsection 804.02.13 on page 858, delete “and FM” from the requirements on line A.3.

Delete Subsection 907-804.02.13.1 beginning on page 859 and substitute the following:

907-804.02.13.1--Basis of Acceptance.

907-804.02.13.1.1--Sampling. Sampling of concrete mixture shall be performed in accordance with the latest edition of the Department's *Concrete Field Manual*.

907-804.02.13.1.2--Slump. Slump of plastic concrete shall meet the requirements of Table 3: MASTER PROPORTION TABLE FOR STRUCTURAL CONCRETE DESIGN. A check test shall be made on another portion of the sample before rejection of any load.

907-804.02.13.1.3--Air. Total air content of concrete shall be within the specified range for the class of concrete listed in Table 3: MASTER PROPORTION TABLE FOR STRUCTURAL CONCRETE DESIGN. A check test shall be made on another portion of the sample before rejection of any load.

907-804.02.13.1.4--Yield. If the yield of the concrete mix design is more than plus or minus 3% of the designed volume, the mix shall be adjusted by a Class III Certified Technician representing the Contractor to yield the correct volume plus or minus three percent (±3%). If batching of the proportions of the mix design varies outside the batching tolerance range of the originally approved proportions by more than the tolerances allowed in Subsection 804.02.12.1, the new proportions shall be field verified per Subsection 804.02.10.3.

907-804.02.13.1.5--Temperature. Cold weather concreting shall follow the requirements of Subsection 907-804.03.16.1. Hot weather concreting shall follow the requirements of Subsection 804.03.16.2 with a maximum temperature of 95°F for Class DS concrete or for concrete mixes containing cementitious materials meeting the requirements of Subsection 907-701.02.2 as a replacement of Portland cement. For other concrete mixes, the maximum concrete temperature shall be 90°F. Concrete with a temperature more than the maximum allowable temperature shall be rejected and not used in Department work.

907-804.02.13.1.6--Compressive Strength. Laboratory cured concrete compressive strength tests shall conform to the specified strength (f'_c) listed in the specifications. Concrete represented by compressive strength test below the specified strength (f'_c) may be removed and replaced by the Contractor. If the Contractor elects not to remove the material, it will be evaluated by the Department as to the adequacy for the use intended. All concrete evaluated as unsatisfactory for the intended use shall be removed and replaced by the Contractor at no additional cost to the Department. For concrete allowed to remain in place, reduction in payment will be as follows:

Projects with 1000 Cubic Yards and More. When the evaluation indicates that the work may remain in place, a statistical analysis will be made of the QC and QA concrete test results. If this statistical analysis indicates at least 93% of the material would be expected to have a compressive strength equal to or greater than the specified strength (f'_c) and 99.87% of the material would be expected to have a compressive strength at least one standard deviation above the allowable design stress (f_c), the work will be accepted. If the statistical analysis indicates that either of the two criteria are not met, the Engineer will provide for an adjustment in pay as follows for the material represented by the test result.

Total Pay on Material in Question = Unit Price - (Unit Price x % Reduction)

$$\% \text{ Reduction} = \frac{(f'_c - X)}{f'_c - (f_c + s)} \times 100$$

where:

f'_c = Specified 28-day compressive strength, psi

- X = Individual compressive strength below f'_c , psi
- s = standard deviation, psi*
- f_c = allowable design stress, psi

* Standard deviation used in the above reduction of pay formula shall be calculated from the applicable preceding compressive strengths test results plus the individual compressive strength below f'_c . If below f'_c strengths occur during the project's first ten compressive strength tests, the standard deviation shall be calculated from the first ten compressive strength tests results.

Projects of More Than 200 but Less Than 1000 Cubic Yards. When the evaluation indicates that the work may remain in place, a percent reduction in pay will be assessed based on a comparison of the deficient 28-day test result to the specified strength. The Engineer will provide for an adjustment in pay as follows for the material represented by the test result.

Total Pay on Material in Question = Unit Price - (Unit Price x % Reduction)

$$\% \text{ Reduction} = \frac{(f'_c - X)}{f'_c} \times 100$$

where:

- f'_c = Specified 28-day compressive strength, psi
- X = Individual compressive strength below f'_c , psi

907-804.03--Construction Requirements.

907-804.03.6--Handling and Placing Concrete.

907-804.03.6.2--Consolidation. After the last sentence of Subsection 804.03.6.2 on page 864, add the following:

If the Department determines that there is an excessive number of projections, swells, ridges, depressions, waves, voids, holes, honeycombs or other defects in the completed structure, removal of the entire structure may be required as set out in Subsection 105.12.

907-804.03.15--Removal of Falsework, Forms, and Housing. Delete the first sentence of the second paragraph of Subsection 804.03.15 on page 871, and substitute the following:

Concrete in the last pour of a continuous superstructure shall have attained a compressive strength of 2,400 psi, as determined by cylinder tests or maturity meter probe, prior to striking any falsework.

Delete the first sentence of the third paragraph of Subsection 804.03.15 on page 871, and substitute the following:

At the Contractor's option and with the approval of the Engineer, the time for removal of forms may be determined by cylinder tests, in accordance with the requirements listed in Table 6, in which case the Contractor shall furnish facilities for testing the cylinders.

Delete the fourth and fifth paragraphs of Subsection 804.03.15 on pages 871 & 872, and substitute the following:

The cylinders shall be cured under conditions which are not more favorable than those existing for the portions of the structure which they represent.

Delete the table in Subsection 804.03.15 on page 872, and substitute the following:

Table 6
Minimum Compressive Strength Requirements for Form Removal

Forms:

Columns	1000 psi
Side of Beams	1000 psi
Walls not under pressure	1000 psi
Floor Slabs, overhead	2000 psi
Floor Slabs, between beams	2000 psi
Slab Spans	2400 psi
Other Parts	1000 psi

Centering:

Under Beams	2400 psi
Under Bent Caps	2000 psi

Limitation for Placing Beams on:

Pile Bents, pile under beam	2000 psi
Frame Bents, two or more columns	2200 psi
Frame Bents, single column	2400 psi

In lieu of using concrete strength cylinders to determine when falsework, forms, and housings can be removed, an approved maturity meter may be used to determine concrete strengths by inserting probes into concrete placed in a structure. The minimum number of maturity meter probes required for each structural component shall be in accordance with Table 7. Falsework, forms, and housings may be removed when maturity meter readings indicate that the required concrete strength is achieved. Procedures for using the maturity meter and developing the strength/maturity relationship shall follow the requirements of AASHTO Designation: T 325 and ASTM Designation: C 1074 specifications. Technicians using the maturity meter or calculating strength/maturity graphs shall be required to have at least two hours of training prior to using the maturity equipment.

**Table 7
Requirements for use of Maturity Meter Probes**

Structure Component	Quantity of Concrete	No. of Probes
Slabs, beams, walls, & miscellaneous items	0 - 30 yd ³	2
	> 30 to 60 yd ³	3
	> 60 to 90 yd ³	4
	> 90 yd ³	5
Footings, Columns & Caps	0 - 13 yd ³	2
	> 13 yd ³	3
Pavement, Pavement Overlays	1200 yd ²	2
Pavement Repairs	Per repair or 900 yd ² Whichever is smaller	2

907-804.03.16--Cold or Hot Weather Concreting.

907-804.03.16.1--Cold Weather Concreting. After the third paragraph of Subsection 804.03.16.1 on page 873, add the following:

In lieu of the protection and curing of concrete in cold weather, at the option of the Contractor with the approval of the Engineer, when concrete is placed during cold weather and there is a probability of ambient temperatures lower than 40°F, an approved maturity meter may be used to determine concrete strengths by inserting probes into concrete placed in a structure. The minimum number of maturity meter probes required for each structural component shall be in accordance with Table 7. An approved insulating blanketing material shall be used to protect the work when ambient temperatures are less than 40°F and shall remain in place until the required concrete strength in Table 6 is achieved. Procedures for using the maturity meter and developing the strength/maturity relationship shall follow the requirements of AASHTO Designation: T 325 and ASTM Designation: C 1074 specifications. Technicians using the maturity meter or calculating strength/maturity graphs shall be required to have at least two hours of training prior to using the maturity equipment.

Rename the Table in Subsection 804.03.16.1 on page 874 from “Table 6” to “Table 8”.

907-804.03.19--Finishing Concrete Surfaces.

907-804.03.19.7--Finishing Bridge Floors.

907-804.03.19.7.4--Acceptance Procedure for Bridge Deck Smoothness. After the first sentence of the second paragraph of Subsection 804.03.19.7.4 on page 886, add the following:

Auxiliary lanes, tapers, shoulders and other areas that are not checked with the profilograph, shall meet a 1/8 inch in 10-foot straightedge check made transversely and longitudinally across the deck or slab.

907-804.05--Basis of Payment. Add the "907" prefix to the pay items listed on page 898.

S E C T I O N 9 0 5 - P R O P O S A L

Date _____

Mississippi Transportation Commission
Jackson, Mississippi

Sirs: The following proposal is made on behalf of _____
_____ of _____

for constructing the following designated project(s) within the time(s) hereinafter specified.

The plans are composed of drawings and blue prints on file in the offices of the Mississippi Department of Transportation, Jackson, Mississippi.

The Specifications are the current Standard Specifications of the Mississippi Department of Transportation approved by the Federal Highway Administration, except where superseded or amended by the plans, Special Provisions and Notice(s) to Bidders attached hereto and made a part thereof.

I (We) certify that I (we) possess a copy of said Standard and Supplemental Specifications.

Evidence of my (our) authority to submit the Proposal is hereby furnished. The proposal is made without collusion on the part of any person, firm or corporation. I (We) certify that I (we) have carefully examined the Plans, the Specifications, including the Special Provisions and Notice(s) to Bidders, herein, and have personally examined the site of the work. On the basis of the Specifications, Special Provisions, Notice(s) to Bidders, and Plans, I (we) propose to furnish all necessary machinery, tools, apparatus and other means of construction and do all the work and furnish all the materials in the manner specified. I (We) understand that the quantities mentioned herein are approximate only and are subject to either increase or decrease, and hereby propose to perform any increased or decreased quantities of work at the unit prices bid, in accordance with the above.

Attached hereto is a certified check, cashier's check or Proposal Guaranty Bond in the amount as required in the Advertisement (or, by law).

INSTRUCTION TO BIDDERS: Alternate and Optional Items on Bid Schedule.

1. Two or more items entered opposite a single unit quantity WITHOUT DEFINITE DESIGNATION AS "ALTERNATE ITEMS" are considered as "OPTIONAL ITEMS". Bidders may or may not indicate on bids the Optional Item proposed to be furnished or performed WITHOUT PREJUDICE IN REGARD TO IRREGULARITY OF BIDS.
2. Items classified on the bid schedule as "ALTERNATE ITEMS" and/or "ALTERNATE TYPES OF CONSTRUCTION" must be preselected and indicated on bids. However, "Alternate Types of Construction" may include Optional Items to be treated as set out in Paragraph 1, above.
3. Optional items not preselected and indicated on the bid schedule MUST be designated in accordance with Subsection 102.06 prior to or at the time of execution of the contract.
4. Optional and Alternate items designated must be used throughout the project.

I (We) further propose to perform all "force account or extra work" that may be required of me (us) on the basis provided in the Specifications and to give such work my (our) personal attention in order to see that it is economically performed.

SECTION 905 -- PROPOSAL (CONTINUED)

I (We) further propose to execute the attached contract agreement (Section 902) as soon as the work is awarded to me (us), and to begin and complete the work within the time limit(s) provided for in the Specifications and Advertisement. I (We) also propose to execute the attached contract bond (Section 903) in an amount not less than one hundred (100) percent of the total of my (our) part, but also to guarantee the excellence of both workmanship and materials until the work is finally accepted.

I (We) enclose a certified check, cashier's check or bid bond for **five percent (5%) of total bid** and hereby agree that in case of my (our) failure to execute the contract and furnish bond within Ten (10) days after notice of award, the amount of this check (bid bond) will be forfeited to the State of Mississippi as liquidated damages arising out of my (our) failure to execute the contract as proposed. It is understood that in case I am (we are) not awarded the work, the check will be returned as provided in the Specifications.

Respectfully Submitted,

DATE _____

Contractor

BY _____
Signature

TITLE _____

ADDRESS _____

CITY, STATE, ZIP _____

PHONE _____

FAX _____

E-MAIL _____

(To be filled in if a corporation)

Our corporation is chartered under the Laws of the State of _____ and the names, titles and business addresses of the executives are as follows:

President Address

Secretary Address

Treasurer Address

The following is my (our) itemized proposal.

Interchange Improvements at I-10 and Gautier/Vancleave Road, known as Federal Aid Project No. NH-0010-01(045) / 104273301 in Jackson County.

Line No.	Item Code	Adj Code	Quantity	Units	Description [Fixed Unit Price]
Roadway Items					
0010	202-B042		2	Each	Removal of Flared End Section, All Sizes
0020	202-B057		3	Each	Removal of Inlets, All Sizes
0030	202-B064		60	Linear Feet	Removal of Pipe, 8" And Above
0040	202-B076		500	Linear Feet	Removal of Traffic Stripe
0050	202-B078		2,923	Square Yard	Removal of Pavement, All Types and Depths
0060	202-B134		700	Linear Feet	Removal of Guard Rail, Including Rails & Posts
0070	203-EX013	(E)	1,992	Cubic Yard	Borrow Excavation, AH, FME, Class B7
0080	203-G004	(E)	1,012	Cubic Yard	Excess Excavation, LVM, AH
0090	206-A001	(S)	1	Cubic Yard	Structure Excavation
0100	206-B001	(E)	1	Cubic Yard	Select Material for Undercuts, Contractor Furnished, FM
0110	209-A004		3,678	Square Yard	Geotextile Stabilization, Type V, Non-Woven
0120	211-A001		7,219	Square Yard	Topsoil for Slope Treatment, From Right-of-Way
0130	213-C001		1	Ton	Superphosphate
0140	221-A001	(S)	9	Cubic Yard	Portland Cement Concrete Paved Ditch
0150	234-A001		2,000	Linear Feet	Temporary Silt Fence
0160	406-A001		2,170	Square Yard	Cold Milling of Bituminous Pavement, All Depths
0170	503-C007		690	Linear Feet	Saw Cut, Full Depth
0180	603-CA088	(S)	44	Linear Feet	18" Reinforced Concrete Pipe, Class III, Rubber Type Gaskets
0190	603-CA089	(S)	28	Linear Feet	24" Reinforced Concrete Pipe, Class III, Rubber Type Gaskets
0200	603-CB001	(S)	2	Each	18" Reinforced Concrete End Section
0210	603-CB002	(S)	1	Each	24" Reinforced Concrete End Section
0220	609-B001	(S)	323	Linear Feet	Concrete Curb, Header
0230	615-A004	(S)	497	Linear Feet	Concrete Special Design Median Barrier
0240	615-B001	(S)	2,045	Linear Feet	Precast Concrete Median Barrier
0250	616-A001	(S)	34	Square Yard	Concrete Median and/or Island Pavement, 4-inch
0260	616-A003	(S)	55	Square Yard	Concrete Median and/or Island Pavement, 10-inch
0270	618-A001		1	Lump Sum	Maintenance of Traffic
0280	619-D1001		62	Square Feet	Standard Roadside Construction Signs, Less than 10 Square Feet
0290	619-D2001		144	Square Feet	Standard Roadside Construction Signs, 10 Square Feet or More
0300	619-G4001		36	Linear Feet	Barricades, Type III, Single Faced
0310	619-G4005		36	Linear Feet	Barricades, Type III, Double Faced
0320	619-G5001		120	Each	Free Standing Plastic Drums

Line No.	Item Code	Adj Code	Quantity	Units	Description [Fixed Unit Price]
0330	620-A001		1	Lump Sum	Mobilization
0340	627-K001		6	Each	Red-Clear Reflective High Performance Raised Markers
0350	627-L001		135	Each	Two-Way Yellow Reflective High Performance Raised Markers
0360	629-A005		2	Each	Vehicular Impact Attenuator, 55 MPH
0370	635-A001		1,398	Linear Feet	Vehicle Loop Assemblies
0380	636-A005		7,113	Linear Feet	Shielded Cable, AWG #14, 2 Conductor
0390	638-A005		6	Each	Loop Detector Amplifier, Card Rack Mounted, 4 Channel
0400	640-A016		14	Each	Traffic Signal Heads, Type 1 LED
0410	640-A019		1	Each	Traffic Signal Heads, Type 5 LED
0420	640-A022		3	Each	Traffic Signal Heads, Type 7 LED
0430	640-A045		3	Each	Traffic Signal Heads, Type 3L, LED
0440	642-A001		2	Each	Solid State Traffic Actuated Controllers, Type 8M
0450	643-A001		1	Each	Closed Loop On-Street Master System
0460	644-A001		9	Each	Optical Detector
0470	644-B001		2,826	Linear Feet	Optical Detector Cable
0480	644-C002		3	Each	Phase Selector, 4 Channel
0490	647-A001		7	Each	Pullbox, Type 1
0500	647-A002		2	Each	Pullbox, Type 3
0510	647-A005		10	Each	Pullbox, Type 2
0520	648-A001		1	Each	Radio Interconnect, Installed in New Controller Cabinet
0530	666-B015		892	Linear Feet	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 5 Conductor
0540	666-B016		2,309	Linear Feet	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 7 Conductor
0550	666-B025		310	Linear Feet	Electric Cable, Underground in Conduit, IMSA 26-3, AWG 6, 2 Conductor
0560	666-B026		436	Linear Feet	Electric Cable, Underground in Conduit, IMSA 26-3, AWG 8, 2 Conductor
0570	668-A018		2,074	Linear Feet	Traffic Signal Conduit, Underground, Type 4, 2"
0580	668-A020		285	Linear Feet	Traffic Signal Conduit, Underground, Type 4, 3"
0590	668-B024		503	Linear Feet	Traffic Signal Conduit, Underground Drilled or Jacked, Rolled Pipe, 2"
0600	668-B025		314	Linear Feet	Traffic Signal Conduit, Underground Drilled or Jacked, Rolled Pipe, 3"
0610	682-A001		1,540	Linear Feet	Underground Branch Circuit, AWG 1, 3 Conductor
0620	682-A005		225	Linear Feet	Underground Branch Circuit, AWG 1/0, 4 Conductor
0630	682-A015		2,510	Linear Feet	Underground Branch Circuit, AWG 2, 3 Conductor
0640	682-A016		335	Linear Feet	Underground Branch Circuit, AWG 2, 4 Conductor
0650	682-A031		3,375	Linear Feet	Underground Branch Circuit, AWG 6, 3 Conductor
0660	682-D001		12	Each	Underground Pull Box
0670	682-F001		1	Each	Secondary Power Controllers

Line No.	Item Code	Adj Code	Quantity	Units	Description [Fixed Unit Price]
0680	683-A014		1	Each	Lighting Assembly, High Mast, Type 100-6-A
0690	683-A032		1	Each	Lighting Assembly, High Mast, Type 110-6-A
0700	683-A051		4	Each	Lighting Assembly, High Mast, Type 120-6-S
0710	683-A072		2	Each	Lighting Assembly, High Mast, Type 130-8-S
0720	683-B051		9	Each	Lighting Assembly, Low Mast, Type 40-1-10-400
0730	683-B058		2	Each	Lighting Assembly, Low Mast, Type 40-1-20-400
0740	683-D001		1	Each	Portable Electric Power Units
0750	684-A004		8	Cubic Yard	Pole Foundation, 36" Diameter
0760	684-A006		48	Cubic Yard	Pole Foundation, 48" Diameter
0770	684-A007		14	Cubic Yard	Pole Foundation, 30" Diameter
0780	684-B004		14	Linear Feet	Slip Casing, 36" Diameter
0790	684-B006		17	Linear Feet	Slip Casing, 48" Diameter
0800	684-B007		7	Linear Feet	Slip Casing, 30" Diameter
0810	907-225-A001		2	Acre	Grassing
0820	907-225-B001		4	Ton	Agricultural Limestone
0830	907-225-C001		4	Ton	Mulch, Vegetative Mulch
0840	907-237-A003		200	Linear Feet	Wattles, 20"
0850	907-304-F004	(GT)	55	Ton	Size 825B Crushed Stone Base
0860	907-407-A001	(A2)	640	Gallon	Asphalt for Tack Coat
0870	907-601-B003	(S)	2	Cubic Yard	Class "B" Structural Concrete, Minor Structures
0880	907-626-A004		727	Linear Feet	6" Thermoplastic Traffic Stripe, Skip White
0890	907-626-G004		1,875	Linear Feet	Thermoplastic Detail Stripe, White
0900	907-626-G005		6,886	Linear Feet	Thermoplastic Detail Stripe, Yellow
0910	907-626-H004		235	Linear Feet	Thermoplastic Legend, White
0920	907-626-H005		511	Square Feet	Thermoplastic Legend, White
0930	907-631-B001		13	Cubic Yard	Flowable Fill, Non-Excavatable
0940	907-637-A001		1	Each	Equipment Cabinet, Type B
0950	907-639-A002		2	Each	Traffic Signal Equipment Pole, Type II, 17' Shaft, 50' Arm
0960	907-639-A007		1	Each	Traffic Signal Equipment Pole, Type II, 17' Shaft, 40' Arm
0970	907-639-A048		1	Each	Traffic Signal Equipment Pole, Type V, 18' Shaft
0980	907-639-A062		1	Each	Traffic Signal Equipment Pole, Type IV, 30' Shaft, 35' & 40' Arms
0990	907-639-A065		1	Each	Traffic Signal Equipment Pole, Type III, 17' Shaft, 35' & 40' Arms
1000	907-639-A096		1	Each	Traffic Signal Equipment Pole, Type III, 17' Shaft, 35' & 50' Arms
1010	907-639-C002		13	Cubic Yard	Pole Foundations, 36" Diameter
1020	907-639-C003		1	Cubic Yard	Pole Foundations, 24" Diameter

Line No.	Item Code	Adj Code	Quantity	Units	Description [Fixed Unit Price]
1030	907-639-D001		45	Linear Feet	Slip Casing, 36" Diameter
1040	907-639-D003		5	Linear Feet	Slip Casing, 24" Diameter
1050	907-639-E001		1	Each	Camera Pole with Foundation, 50' Pole
1060	907-650-A002		2	Each	On Street Video Equipment, Fixed Type
1070	907-650-A003		1	Each	On Street Video Equipment, PTZ Type
1080	907-657-B001		205	Linear Feet	Fiber Optic Drop Cable, 12 SM
1090	907-658-A001		1	Each	Hardened Network Switch, Type A
1100	907-658-B001		1	Each	Terminal Server
1110	907-699-A002		1	Lump Sum	Roadway Construction Stakes
ALTERNATE GROUP AA NUMBER 1					
1120	907-403-A010	(BA1)	436	Ton	Hot Mix Asphalt, MT, 9.5-mm mixture
ALTERNATE GROUP AA NUMBER 2					
1130	907-403-M006	(BA1)	436	Ton	Warm Mix Asphalt, MT, 9.5-mm mixture
ALTERNATE GROUP BB NUMBER 1					
1140	907-403-A006	(BA1)	582	Ton	Hot Mix Asphalt, MT, 12.5-mm mixture
ALTERNATE GROUP BB NUMBER 2					
1150	907-403-M002	(BA1)	582	Ton	Warm Mix Asphalt, MT, 12.5-mm mixture
ALTERNATE GROUP CC NUMBER 1					
1160	907-403-A007	(BA1)	1,473	Ton	Hot Mix Asphalt, MT, 19-mm mixture
ALTERNATE GROUP CC NUMBER 2					
1170	907-403-M007	(BA1)	1,473	Ton	Warm Mix Asphalt, MT, 19-mm mixture

CONDITIONS FOR COMBINATION BID

If a bidder elects to submit a combined bid for two or more of the contracts listed for this month's letting, the bidder must complete and execute these sheets of the proposal in each of the individual proposals to constitute a combination bid. In addition to this requirement, each individual contract shall be completed, executed and submitted in the usual specified manner.

Failure to execute this Combination Bid Proposal in each of the contracts combined will be just cause for each proposal to be received and evaluated as a separate bid.

COMBINATION BID PROPOSAL

I. This proposal is tendered as one part of a Combination Bid Proposal utilizing option ___* of Subsection 102.11 on the following contracts:

* Option to be shown as either (a), (b), or (c).

<u>Project No.</u>	<u>County</u>	<u>Project No.</u>	<u>County</u>
1. _____	_____	6. _____	_____
2. _____	_____	7. _____	_____
3. _____	_____	8. _____	_____
4. _____	_____	9. _____	_____
5. _____	_____	10. _____	_____

A. If option (a) has been selected, then go to II, and sign Combination Bid Proposal.

B. If option (b) has been selected, then complete the following, go to II, and sign Combination Bid Proposal.

SECTION 905 - COMBINATION BID PROPOSAL (Continued)

Project Number	Pay Item Number	Unit	Unit Price Reduction	Total Item Reduction	Total Contract Reduction
1. _____	_____ _____	_____ _____	_____ _____	_____ _____	
2. _____	_____ _____	_____ _____	_____ _____	_____ _____	
3. _____	_____ _____	_____ _____	_____ _____	_____ _____	
4. _____	_____ _____	_____ _____	_____ _____	_____ _____	
5. _____	_____ _____	_____ _____	_____ _____	_____ _____	
6. _____	_____ _____	_____ _____	_____ _____	_____ _____	
7. _____	_____ _____	_____ _____	_____ _____	_____ _____	
8. _____	_____ _____	_____ _____	_____ _____	_____ _____	

SECTION 905 - COMBINATION BID PROPOSAL (Continued)

Project Number	Pay Item Number	Unit	Unit Price Reduction	Total Item Reduction	Total Contract Reduction
9. _____	_____ _____	_____ _____	_____ _____	_____ _____	
10. _____	_____ _____	_____ _____	_____ _____	_____ _____	

C. If option (c) has been selected, then initial and complete one of the following, go to II. and sign Combination Bid Proposal.

_____ I (We) desire to be awarded work not to exceed a total monetary value of \$ _____.

_____ I (We) desire to be awarded work not to exceed _____ number of contracts.

II. It is understood that the Mississippi Transportation Commission not only reserves the right to reject any and all proposals, but also the right to award contracts upon the basis of lowest separate bids or combination bids most advantageous to the State.

It is further understood and agreed that the Combination Bid Proposal is for comparison of bids only and that each contract shall operate in every respect as a separate contract in accordance with its proposal and contract documents.

I (We), the undersigned, agree to complete each contract on or before its specified completion date.

SIGNED _____

**Certification with regard to the Performance of Previous
Contracts or Subcontracts subject to the Equal Opportunity
Clause and the filing of Required Reports**

The Bidder ____, proposed Subcontractor ____, hereby certifies that he has ____, has not ____, participated in a previous contract or subcontract subject to the Equal Opportunity Clause, as required by Executive Orders 10925, 11114, or 11246, and that he has ____, has not ____, filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

(COMPANY)

BY _____

(TITLE)

DATE: _____

NOTE: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7 (b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the Equal Opportunity Clause. Contracts and Subcontracts which are exempt from the Equal Opportunity Clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime Contractors and Subcontractors who have participated in a previous contract or subcontract subject to the Executive orders and have not filed the required reports should note that 41 CFR 60-1.7 (b) (1) prevents the award of contracts and subcontracts unless such Contractors submit a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U. S. Department of Labor.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

CERTIFICATION (Execute in duplicate)

I, _____,
(Name of person signing certification)

individually, and in my capacity as _____ of
(Title)

_____ do hereby certify under
(Name of Firm, Partnership, or Corporation)

penalty of perjury under the laws of the United States and the State of Mississippi that _____

_____, Bidder
(Name of Firm, Partnership, or Corporation)

on Project No. **NH-0010-01(045) / 104273301**,

in **Jackson** County(ies), Mississippi, has not either

directly or indirectly entered into any agreement, participated in any collusion; or otherwise taken any action in restraint of free competitive bidding in connection with this contract; nor have any of its corporate officers or principal owners.

Except as noted hereafter, it is further certified that said legal entity and its corporate officers, principal owners, managers, auditors and others in a position of administering federal funds:

- a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in (b) above; and
- d) Have not within a three-year period preceding this application/ proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

Initial here "_____" if exceptions are attached and made a part thereof. Any exceptions shall address to whom it applies, initiating agency and dates of such action.

Note: Exceptions will not necessarily result in denial of award but will be considered in determining bidder responsibility. Providing false information may result in criminal prosecution or administrative sanctions.

The bidder further certifies that the certification requirements contained in Section XI of Form FHWA 1273, will be or have been included in all subcontracts, material supply agreements, purchase orders, etc. except those procurement contracts for goods or services that are expected to be less than the Federal procurement small purchase threshold fixed at 10 U.S.C. 2304(g) and 41 U.S.C. 253(g) (currently \$25,000) which are excluded from the certification requirements.

The bidder further certifies, to the best of his or her knowledge and belief, that:

- 1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- 2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this contract, Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions will be completed and submitted.

The certification contained in (1) and (2) above is a material representation of fact upon which reliance is placed and a prerequisite imposed by Section 1352, Title 31, U.S. Code prior to entering into this contract. Failure to comply shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000. The bidder shall include the language of the certification in all subcontracts exceeding \$100,000 and all subcontractors shall certify and disclose accordingly.

All of the foregoing and attachments (when indicated) is true and correct.

Executed on _____
Signature

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

CERTIFICATION
(Execute in duplicate)

I, _____,
(Name of person signing certification)

individually, and in my capacity as _____ of
(Title)

_____ do hereby certify under
(Name of Firm, Partnership, or Corporation)

penalty of perjury under the laws of the United States and the State of Mississippi that _____
_____, Bidder
(Name of Firm, Partnership, or Corporation)

on Project No. **NH-0010-01(045) / 104273301**

in **Jackson** County(ies), Mississippi, has not either

directly or indirectly entered into any agreement, participated in any collusion; or otherwise taken any action in restraint of free competitive bidding in connection with this contract; nor have any of its corporate officers or principal owners.

Except as noted hereafter, it is further certified that said legal entity and its corporate officers, principal owners, managers, auditors and others in a position of administering federal funds:

- a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in (b) above; and
- d) Have not within a three-year period preceding this application/ proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

Initial here "_____" if exceptions are attached and made a part thereof. Any exceptions shall address to whom it applies, initiating agency and dates of such action.

Note: Exceptions will not necessarily result in denial of award but will be considered in determining bidder responsibility. Providing false information may result in criminal prosecution or administrative sanctions.

The bidder further certifies that the certification requirements contained in Section XI of Form FHWA 1273, will be or have been included in all subcontracts, material supply agreements, purchase orders, etc. except those procurement contracts for goods or services that are expected to be less than the Federal procurement small purchase threshold fixed at 10 U.S.C. 2304(g) and 41 U.S.C. 253(g) (currently \$25,000) which are excluded from the certification requirements.

The bidder further certifies, to the best of his or her knowledge and belief, that:

- 1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- 2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this contract, Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions will be completed and submitted.

The certification contained in (1) and (2) above is a material representation of fact upon which reliance is placed and a prerequisite imposed by Section 1352, Title 31, U.S. Code prior to entering into this contract. Failure to comply shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000. The bidder shall include the language of the certification in all subcontracts exceeding \$100,000 and all subcontractors shall certify and disclose accordingly.

All of the foregoing and attachments (when indicated) is true and correct.

Executed on _____
Signature

S E C T I O N 9 0 2

CONTRACT FOR NH-0010-01(045) / 104273301

LOCATED IN THE COUNTY(IES) OF Jackson

STATE OF MISSISSIPPI,
COUNTY OF HINDS

This contract entered into by and between the Mississippi Transportation Commission on one hand, and the undersigned contractor, on the other witnesseth;

That, in consideration of the payment by the Mississippi Transportation Commission of the prices set out in the proposal hereto attached, to the undersigned contractor, such payment to be made in the manner and at the time of times specified in the specifications and the special provisions, if any, the undersigned contractor hereby agrees to accept the prices stated in the proposal in full compensation for the furnishing of all materials and equipment and the executing of all the work contemplated in this contract.

It is understood and agreed that the advertising according to law, the Advertisement, the instructions to bidders, the proposal for the contract, the specifications, the revisions of the specifications, the special provisions, and also the plans for the work herein contemplated, said plans showing more particularly the details of the work to be done, shall be held to be, and are hereby made a part of this contract by specific reference thereto and with like effect as if each and all of said instruments had been set out fully herein in words and figures.

It is further agreed that for the same consideration the undersigned contractor shall be responsible for all loss or damage arising out of the nature of the work aforesaid; or from the action of the elements and unforeseen obstructions or difficulties which may be encountered in the prosecution of the same and for all risks of every description connected with the work, exceptions being those specifically set out in the contract; and for faithfully completing the whole work in good and workmanlike manner according to the approved Plans, Specifications, Special Provisions, Notice(s) to Bidders and requirements of the Mississippi Department of Transportation.

It is further agreed that the work shall be done under the direct supervision and to the complete satisfaction of the Executive Director of the Mississippi Department of Transportation, or his authorized representatives, and when Federal Funds are involved subject to inspection at all times and approval by the Federal Highway Administration, or its agents as the case may be, or the agents of any other Agency whose funds are involved in accordance with those Acts of the Legislature of the State of Mississippi approved by the Governor and such rules and regulations issued pursuant thereto by the Mississippi Transportation Commission and the authorized Federal Agencies.

The Contractor agrees that all labor as outlined in the Special Provisions may be secured from list furnished by

It is agreed and understood that each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and this contract shall be read and enforced as though it were included herein, and, if through mere mistake or otherwise any such provision is not inserted, then upon the application of either party hereto, the contract shall forthwith be physically amended to make such insertion.

The Contractor agrees that he has read each and every clause of this Contract, and fully understands the meaning of same and that he will comply with all the terms, covenants and agreements therein set forth.

Witness our signatures this the _____ day of _____, _____.

Contractor (s)

By _____

MISSISSIPPI TRANSPORTATION COMMISSION

Title _____

By _____

Signed and sealed in the presence of:
(names and addresses of witnesses)

Executive Director

Secretary to the Commission

Award authorized by the Mississippi Transportation Commission in session on the ____ day of _____, _____, Minute Book No. _____, Page No. _____.

S E C T I O N 9 0 3
PERFORMANCE AND PAYMENT BOND

CONTRACT BOND FOR: NH-0010-01(045) / 104273301

LOCATED IN THE COUNTY(IES) OF: Jackson

STATE OF MISSISSIPPI,

COUNTY OF HINDS

Know all men by these presents: that we, _____
(Contractor)

_____ Principal, a _____

residing at _____ in the State of _____

and _____
(Surety)

residing at _____ in the State of _____,

authorized to do business in the State of Mississippi, under the laws thereof, as surety, are held and firmly bound unto the State of Mississippi in the sum of _____

(\$ _____) Dollars, lawful money of the United States of America, to be paid to it for which payment well and truly to be made, we bind ourselves, our heirs, administrators, successors, or assigns jointly and severally by these presents.

Signed and sealed this the _____ day of _____ A.D. _____.

The conditions of this bond are such, that whereas the said _____

principal, has (have) entered into a contract with the Mississippi Transportation Commission, bearing the date of _____ day of _____ A.D. _____ hereto annexed, for the construction of certain projects(s) in the State of Mississippi as mentioned in said contract in accordance with the Contract Documents therefor, on file in the offices of the Mississippi Department of Transportation, Jackson, Mississippi.

Now therefore, if the above bounden _____

_____ in all things shall stand to and abide by and well and truly observe, do keep and perform all and singular the terms, covenants, conditions, guarantees and agreements in said contract, contained on his (their) part to be observed, done, kept and performed and each of them, at the time and in the manner and form and furnish all of the material and equipment specified in said contract in strict accordance with the terms of said contract which said plans, specifications and special provisions are included in and form a part of said contract and shall maintain the said work contemplated until its final completion and acceptance as specified in Subsection 109.11 of the approved specifications, and save harmless said Mississippi Transportation Commission from any loss or damage arising out of or occasioned by the negligence, wrongful or criminal act, overcharge, fraud, or any other loss or damage whatsoever, on the part of said principal (s), his (their) agents, servants, or employees in

SECTION 903 - CONTINUED

the performance of said work or in any manner connected therewith, and shall be liable and responsible in a civil action instituted by the State at the instance of the Mississippi Transportation Commission or any officer of the State authorized in such cases, for double any amount in money or property, the State may lose or be overcharged or otherwise defrauded of, by reason of wrongful or criminal act, if any, of the Contractor(s), his (their) agents or employees, and shall promptly pay the said agents, servants and employees and all persons furnishing labor, material, equipment or supplies therefor, including premiums incurred, for Surety Bonds, Liability Insurance, and Workmen's Compensation Insurance; with the additional obligation that such Contractor shall promptly make payment of all taxes, licenses, assessments, contributions, damages, any liquidated damages which may arise prior to any termination of said principal's contract, any liquidated damages which may arise after termination of the said principal's contract due to default on the part of said principal, penalties and interest thereon, when and as the same may be due this state, or any county, municipality, board, department, commission or political subdivision: in the course of the performance of said work and in accordance with Sections 31-5-51 et seq. Mississippi Code of 1972, and other State statutes applicable thereto, and shall carry out to the letter and to the satisfaction of the Executive Director of the Mississippi Department of Transportation, all, each and every one of the stipulations, obligations, conditions, covenants and agreements and terms of said contract in accordance with the terms thereof and all of the expense and cost and attorney's fee that may be incurred in the enforcement of the performance of said contract, or in the enforcement of the conditions and obligations of this bond, then this obligation shall be null and void, otherwise to be and remain in full force and virtue.

Witness our signatures and seals this the _____ day of _____ A.D. _____.

_____	_____
(Contractors) Principal	Surety
By _____	By _____
	(Signature) Attorney in Fact
	Address _____

Title _____	_____
(Contractor's Seal)	(Printed) MS Agent

	(Signature) MS Agent
	Address _____

	(Surety Seal)

	Mississippi Insurance ID Number



BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____
Contractor

Address

City, State ZIP

as Principal, hereinafter called the Principal, and _____
Surety

a corporation duly organized under the laws of the state of _____

as Surety, hereinafter called the Surety, are held and firmly bound unto State of Mississippi, Jackson, Mississippi

As Obligee, hereinafter called Obligee, in the sum of **Five Per Cent (5%) of Amount Bid**
Dollars (\$ _____)

for the payment of which sum will and truly to be made, the said Principal and said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for **Interchange Improvements at I-10 and Gautier/Vancleave Road, known as Federal Aid Project No. NH-0010-01(045) / 104273301 in Jackson County.**

NOW THEREFORE, the condition of this obligation is such that if the aforesaid Principal shall be awarded the contract, the said Principal will, within the time required, enter into a formal contract and give a good and sufficient bond to secure the performance of the terms and conditions of the contract, then this obligation to be void; otherwise the Principal and Surety will pay unto the Obligee the difference in money between the amount of the bid of the said Principal and the amount for which the Obligee legally contracts with another party to perform the work if the latter amount be in excess of the former, but in no event shall liability hereunder exceed the penal sum hereof.

Signed and sealed this _____ day of _____, 20____

(Principal) (Seal)

(Witness)

By: _____
(Name) (Title)

(Surety) (Seal)

(Witness)

By: _____
(Attorney-in-Fact)

MS Agent

Mississippi Insurance ID Number

