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SM No. CSP0002060271

PROPOSAL AND CONTRACT DOCUMENTS

FOR THE CONSTRUCTION OF

5

Lighting Repair at the US 78 / US 45 and US 178 / US 145 interchanges, known as State Project No. SP-0002-06(027) / 106908301 in Lee County.

Project Completion: July 16, 2015

(STATE DELEGATED)

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 **the percentage in the contract is 1% or greater**, 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

TABLE OF CONTENTS

PROJECT: SP-0002-06(027) / 106908301 – Lee County

901--Advertisement

904--Notice to Bidders: Governing Specifications - # 1
 Final Cleanup - # 3
 Fiber Reinforced Concrete - # 640
 Errata & Modifications to 2004 Standard Specifications - # 1405
 Federal Bridge Formula - # 1928
 Non-Quality Control / Quality Assurance Concrete - # 2818
 Reduced Speed Limit Signs - # 2937
 Type III Barricade Rails - # 3655
 Petroleum Products Base Price - # 3893
 Safety Apparel - # 4214
 Electronic Addendum Process - # 4526
 Manual on Uniform Traffic Control Devices (MUTCD) - # 4565
 Exposure to Severe Sulfate Areas At Or Near Ground Level - # 4623
 Payroll Requirements - # 4661
 Questions Regarding Bidding - # 5044
 Adjustments for Bituminous Materials - # 5050
 Contractor Correspondence - # 5053
 Contract Time - # 5245
 Specialty Items - # 5246
 Lane Closure Restrictions - # 5247
 Submittal Data - # 5250
 Additional Construction Requirements - # 5253
 Portable Construction Lighting - # 5254

907-101-4: Definitions
907-102-10: Bidding Requirements and Conditions
907-103-8: Award and Execution of Contract
907-104-5: Disposal of Materials
907-105-7: Control of Work, W/Supplement
907-107-13: Legal Relations & Responsibility to Public
907-108-30: Prosecution and Progress
907-109-6: Measurement and Payment, W/Supplement
907-237-4: Wattles
907-618-13: Temporary Construction Signs
907-619-5: Changeable Message Signs
907-680-1: Portable Construction Lighting
907-681-2: Submittal Data

- CONTINUED ON NEXT PAGE -

907-682-12: Branch Circuit Wire
907-701-5: Hydraulic Cement, W/Supplement
907-711-4: Synthetic Structural Fiber Reinforcement
907-713-3: Admixtures for Concrete
907-714-8: Miscellaneous Materials
907-723-1: High Mast Lighting Wind Velocity
907-804-13: Concrete Bridges and Structures, W/Supplement

SECTION 905 - PROPOSAL, PROPOSAL BID ITEMS, COMBINATION BID PROPOSAL,
STATE BOARD OF CONTRACTORS REQUIREMENTS,
STATE CERTIFICATION REGARDING NON-COLLUSION, DEBARMENT AND SUSPENSION(2),
SECTION 902- CONTRACT FORM,
SECTION 903 - CONTRACT BOND FORMS

(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, November 25, 2014, and shortly thereafter publicly opened on the Sixth Floor for:

Lighting Repair at the US 78 / US 45 and US 178 / US 145 interchanges, known as State Project No. SP-0002-06(027) / 106908301 in Lee County.

The attention of bidders is directed to the predetermined minimum wage rate set by the U. S. Department of Labor under the Fair Labor Standards Act.

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.

Plans and specifications are on file in the offices of the Mississippi Department of Transportation.

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 must be purchased online at <https://shopmdot.ms.gov>. Costs of plans will be on a per sheet basis plus a small convenience fee. If you have any questions, you can contact the MDOT Plans Print Shop at (601) 359-7460, or e-mail at plans@mdot.state.ms.us. Plans will be shipped upon receipt of payment. Cash or checks will not be accepted as 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. 3

CODE: (SP)

DATE: 05/03/2004

SUBJECT: Final Clean-Up

Immediately prior to final inspection for release of maintenance, the Contractor shall pick up, load, transport and properly dispose of all litter from the entire highway right-of-way that is within the termini of the project.

Litter shall include, but not be limited to, solid wastes such as glass, paper products, tires, wood products, metal, synthetic materials and other miscellaneous debris.

Litter removal is considered incidental to other items of work and will not be measured for separate payment.

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. 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. 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. 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. 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. 4526

CODE: (SP)

DATE: 06/11/2013

SUBJECT: Electronic Addendum Process

Bidders are advised that hard copies of any addenda for this project will no longer be mailed to prospective bidders. All addenda for this project will be posted to the mdot.ms.gov webpage under the Proposal Addenda column for the current letting and appropriate call number. Bidders will have to download addenda from the webpage and process the addenda in the same manner as previous lettings. Addenda will be posted by 10:00 a.m. on Friday prior to the letting. It will be the Bidder's responsibility to check and see if any addenda have been posted for this project. Any questions regarding the downloading process of the addenda shall be directed to the Contract Administration Division at 601-359-7700. Any questions regarding the content of the addenda shall be submitted as a question in accordance with the Notice To Bidders entitled "Questions Regarding Bidding".

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 4565

CODE: (SP)

DATE: 06/27/2013

SUBJECT: Manual on Uniform Traffic Control Devices

Any reference in the Standard Specifications or contract documents to a particular Section of the Manual on Uniform Traffic Control Devices (MUTCD) it shall mean that Section of the latest version of the Manual on Uniform Traffic Control Devices.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 4623

CODE: (SP)

DATE: 08/27/2013

SUBJECT: Exposure to Severe Sulfate Areas At Or Near Ground Level

Bidders are hereby advised that this project, or portions of this project, is located in areas of severe sulfate exposure and will require certain restrictions on the cementitious materials. The centerline-soil profile investigation has indicated the presence of severe sulfate soils at or near ground level. Therefore, **except for the items listed below**, the cementitious materials used in concrete mixtures for the construction items of work which come in contact with the **native soils** shall conform to the requirements listed in Subsection 907-701.02 for severe sulfate exposure.

Items not requiring restrictions on the cementitious materials are as follows:

<u>Pay Item</u>	<u>Description</u>
221	Paved Ditches
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

Unless otherwise specified, no other restrictions on the cementitious materials shall apply to other concrete items or structures.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SECTION 904 - NOTICE TO BIDDERS NO. 4661

CODE: (IS)

| DATE: 10/16/2013

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 IV 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 or 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. 5044

CODE: (SP)

| DATE: 05/13/2014

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 **the day** prior to the letting. Answers to questions will be posted by 6:00 p.m. on **the day** prior to the letting. 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. Bidders are advised that by signing the contract documents for this project, they agree that the on-line Questions and Answers submitted on this project shall be added to and made part of the official contract.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 5050

CODE: (SP)

DATE: 05/28/2014

SUBJECT: Adjustments for Bituminous Materials

Bidders are advised that Subsection 907-402.03.1.2, Tack Coat, in Special Provision 907-402, allows the Contractor several options for OGFC tack coat. Regardless of the tack coat used, the monthly material adjustment, as referenced in Section 109 of the Standard Specifications, will be made using the base and current prices of tack coat Grade PG 76-22.

Bidders are also advised that the specifications allow the use of RC-70, RC-250, RC-800, RS-1, RS-2, MC-30, MC-250, MS-2h, LD-7, CQS-1h, and CMS-2h in various other construction operations. If the Contractor uses one of these bituminous materials, the monthly material adjustment will be made using the base and current prices of the materials shown below.

Materials Used	Material Adjustment Made Based on Prices For
RC-70, 250, 800	MC-70
RS-1, 2	CRS-2
MC-30, 250	MC-70
MS-2h	SS-1
LD-7, CQS-1h	CSS-1
CMS-2h	SS-1

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 5053

CODE: (SP)

DATE: 06/03/2014

SUBJECT: Contractor Correspondence

Bidders are advised that all correspondence concerning this project, other than correspondence related to the execution of the contract and sub-contracting, shall be sent to the Project Engineer. The Project Engineer will then forward any necessary correspondence to the appropriate Division. This includes general correspondence, submittals, shop drawings, requests for advancement of materials, etc.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 5245

CODE: (SP)

DATE: 10/21/2014

SUBJECT: Contract Time

PROJECT: SP-0002-06(027) / 106908301 – Lee County

The calendar date for completion of work to be performed by the Contractor for this project shall be **July 16, 2015** 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 **December 9, 2014** and the effective date of the Notice to Proceed / Beginning of Contract Time will be **March 12, 2015**.

Should the Contractor request a Notice to Proceed earlier than **March 12, 2015** 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 available productive days for this project are **72**.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 5246

DATE: 10/29/2014

SUBJECT: Specialty Items

PROJECT: SP-0002-06(027) / 106908301 - Lee 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
0030	234-A001	Temporary Silt Fence
0140	907-237-A002	Wattles, 12"

CATEGORY: RIPRAP, MAILBOXES

Line No	Pay Item	Description
0160	907-618-B001	Additional Construction Signs

CATEGORY: TRAFFIC CONTROL - TEMPORARY

Line No	Pay Item	Description
0170	907-619-E3001	Changeable Message Sign

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 5247

CODE: (SP)

DATE: 10/23/2014

SUBJECT: Lane Closure Restrictions

PROJECT: SP- 0002-06(027) / 106908301 – Lee County

Bidders are hereby advised that no lane closures will be permitted on the following holidays or the day preceding them: New Year's Day, Independence Day, Labor Day, Thanksgiving Day or Christmas Day. In the event that one the above mentioned holidays falls during the weekend or on a Monday, no lane closures will be allowed during that weekend or the Friday immediately preceding that holiday.

If the lane closure restriction listed above is violated, no excuses will be accepted by the Department and the Contractor will be charged a fee of \$2,500.00 for each full or partial five minute period until the roadway is back in compliance with the lane closure restriction requirement.

For the purposes of this contract, official time shall be the announced time available at the Tupelo area telephone number (662) 842-8422.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 5250

CODE: (SP)

DATE: 10/22/2014

SUBJECT: Submittal Data

PROJECT: SP-0002-06(027) / 106908301 – Lee County

Bidders are advised that the contract time was calculated based on the contractor beginning the submittal process, getting approval, and ordering of approved materials between the Notice of Award and the Notice to Proceed.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 5253

CODE: (SP)

DATE: 10/23/2014

SUBJECT: Additional Construction Requirements

PROJECT: SP- 0002-06(027) / 106908301 – Lee County

Bidders are advised that lane closures for the purpose of removing and installing high mast lighting will only be allowed Monday through Thursday from 12:00 a.m. to 5:00 a.m. in 30 minute intervals. After the 30-minute closure, traffic must be released for a period of 30 minutes or until all traffic clears.

Daytime and overnight single lane closures for work other than removing and installing high mast lighting will be allowed.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 5254

CODE: (SP)

DATE: 10/23/2014

SUBJECT: Portable Construction Lighting

PROJECT: SP- 0002-06(027) / 106908301 – Lee County

Bidders are hereby advised that portable construction lighting will be required for any and all night work on this project and shall conform to the requirements of Special Provision 907-680, Portable Construction Lighting. No separate payment will be made for this item of work and shall be included in other bid items.

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

SPECIAL PROVISION NO. 907-102-10

CODE: (IS)

DATE: 05/01/2013

SUBJECT: Bidding Requirements and Conditions

Section 102, Bidding Requirements and Conditions, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-102.06--Preparation of Proposal. Delete the first paragraph of Subsection 102.06 on page 17, 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 <http://mdot.ms.gov>. 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.

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 (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. If a Bidder is submitting bids on multiple proposals, the bid data for all proposals can be included on one flash drive and submitted with any of the bid envelopes.

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, <http://mdot.ms.gov>. 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.

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. 907-104-5

CODE: (IS)

DATE: 05/01/2013

SUBJECT: Scope of Work

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. 907-105-7

DATE: 04/02/2014

SUBJECT: Control of Work

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

907-105.04--Coordination of Plans, Specifications, Interim Specifications, Special Provisions and Notice to Bidders. Delete the second full paragraph of Subsection 105.04 on page 35, and substitute the following.

In case of a conflict between plan quantities, advertisement quantities, and/or bid sheet quantities, the bid sheet quantities shall prevail.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SPECIAL PROVISION NO. 907-105-7

CODE: (IS)

| DATE: 05/01/2013

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.

| **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. 907-107-13

CODE: (IS)

| DATE: 05/01/2013

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 [the following](#).

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 of property, the cost of whose services is borne specifically by the Contractor or Governmental authority.

(b) **Contractor's Liability - Railroad**, 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.

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. 907-108-30

CODE: (IS)

| DATE: 05/22/2013

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.

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.

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.

An available productive day will be assessed as follows:

- (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 item(s) of work, as determined by the

Engineer from the Contractor's approved progress schedule. When the Contractor works or could work 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 the Contractor works or could work six or more consecutive hours during the day, one (1.0) available work day will be charged for that day, 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 item(s) of work, as determined by the Engineer from the Contractor's approved progress schedule. 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 the 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.

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.

The Contractor's progress will be determined monthly at the time of each progress estimate and will be based on the percentage of money earned by the Contractor compared to the percentage of elapsed time.

The percentage of money earned will be determined by comparing the total money earned to-date by the Contractor, minus any payment for advancement of materials, to the total dollar amount of the contract. The percentage of time elapsed will be determined by comparing the available productive days assessed to-date on Form CSD-765 to the total available productive days for 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. 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.

If the **specified completion date** 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.

907-108.07--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 Per Calendar Day
From More Than	To and Including	
\$ 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

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. 907-109-6

DATE: 06/03/2014

SUBJECT: Measurement and Payment

Before the first sentence of Subsection 907-109.04 on page 1, add the following.

Delete the first paragraph under Subsection 109.04 on page 91, and substitute the following.

When extra work results for any reason and is not handled as prescribed elsewhere herein, the Engineer and the Contractor will attempt to agree on equitable prices. When such prices are agreed upon, a Supplemental Agreement will be issued by the Engineer.

When the Supplemental Agreement process is initiated, the Contractor will be required to submit to the Engineer a detailed breakdown for Material, Labor, Equipment, Profit and Overhead. The total allowable markup (which includes Prime Contractor and Subcontractor work, if applicable) for Supplemental Agreement work shall not exceed 20%.

The requirement for detailed cost breakdowns may be waived when a Department's Bid Item History exists for the proposed item(s), and the Contractor's requested price, including mark-up, is within 20% of the Department's Bid History cost for that item(s). In any case, the Department reserves the right to request detailed cost breakdowns from the Contractor on any Supplemental Agreement request.

When equitable prices cannot be agreed upon mutually by the Engineer and the Contractor, the Engineer will issue a written order that work will be completed on a force account basis to be compensated in the following manner:

After the last paragraph of Subsection 907-109.07 on page 2, add the following.

Delete the last paragraph of Subsection 109.07 on pages 97 & 98, and substitute the following.

Adjustments herein provided shall not apply to fuels consumed or materials incorporated into the work during any monthly estimate period falling wholly after the expiration of contract time as defined in Subsection 101.02 of the applicable Mississippi Standard Specifications for Road and Bridge Construction, and as determined by checked final quantities..

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SPECIAL PROVISION NO. 907-109-6

CODE: (IS)

| DATE: 05/01/2013

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.

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.

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. 907-237-4

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. 907-618-13

CODE: (SP)

DATE: 06/03/2014

SUBJECT: Temporary Construction Signs

Section 618, Maintenance of Traffic and Traffic Control Plan, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-618.03--Construction Requirements.

907-618.03.2--Barricades, Signs, and Flaggers. Delete the second paragraph of Subsection 618.03.2 on page 414, and substitute the following.

Flaggers shall be stationed at such points as may be deemed necessary.

Temporary construction signs shall be removed as their use becomes inapplicable. However, placing temporary signs and their supports flat on the ground outside the shoulder break line will be allowed.

907-618.05--Basis of Payment. Delete the first two pay items listed on page 418, and substitute the following.

907-618-A: Maintenance of Traffic - lump sum

907-618-B: Additional Construction Signs - per square foot

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-619-5

CODE: (SP)

DATE: 03/09/2009

SUBJECT: Changeable Message Signs

Section 619, Traffic Control for Construction Zones, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-619.02--Material Requirements. After Subsection 619.02.13 on page 424, add the following.

907-619.02.14--Changeable Message Sign. This work shall consist of furnishing, testing, and maintaining a trailer-mounted electronic Portable Changeable Message Sign (PCMS) assembly. The sign display shall be a LED, full matrix sign. If more than one portable changeable message sign is required for this project, they shall all be of the same model and from the same manufacturer. All parts and materials used to construct the portable changeable message signs shall be interchangeable.

The PCMS shall be a trailer-mounted, solar powered, portable changeable message sign.

Each PCMS shall include the following main components:

- a) Sign Housing
- b) LED Modules
- c) LED Drivers
- d) Battery Bank
- e) Sign Controller
- f) Trailer
- g) AC Charger
- h) Solar Panel
- i) Solar Panel Charger

The LED display shall be full matrix sign with a minimum of 28-pixel rows x 50-pixel columns. The pixel spacing shall be such that three (3) lines of text (5 columns x 7 rows, 8 characters) shall each have a nominal height of 18 inches.

The PCMS shall include a remote communications interface as specified herein. The PCMS shall be provided with a local serial and USB connection within the sign control cabinet so that a laptop computer using the remote software can communicate directly with the sign CPU.

This Special Provision incorporates normative references to other standards as outlined in Section 1 of the NEMA TS-4 standard and as listed below.

NEMA TS4-2004, Hardware Standards for Dynamic Message Signs (DMS) with NTCIP Requirements. All NEMA TS-4 requirements that are applicable to portable signs shall be used.

NTCIP Standards.

If a conflict between the standards referenced and this Special Provision, this Special Provision shall govern.

The definitions of the terms used within this Special Provision are as defined in Section 1 of the NEMA TS-4 standard.

If required in the contract, the PCMS shall include a speed radar unit as specified herein.

907-619.02.14.1--Mechanical Construction. Each PCMS shall meet the following minimum requirements.

Weather-Tight Enclosure. The entire sign and trailer assembly, including each component / equipment exposed to weather, shall be fully protected. It shall withstand the effects of sand, dirt, dust, moisture, hose-directed water, ice, snow and UV radiation (UVA and UVB). It shall withstand the effects of high wind loading and blowing rain as specified herein with all outriggers and/or leveling jacks in place. The sign and all components shall be watertight. Space shall be provided for manuals to be stored in a weatherproof environment.

Wind Loading. Wind loading requirements for the portable sign housing and trailer assembly shall be as specified in Section 3.3.2.1.2 of the NEMA TS-4 standard.

Welding. All welding on all major structural components (aluminum or steel) shall be performed by certified welders and in accordance to SAE/AWS D8.8 American Welding Society.

Protective Coatings. Protective coatings or processes, such as anodizing, e-coating, powder coat painting, plating, etc., shall be incorporated to protect all sign, cabinet, and trailer metal surfaces from corrosion. Any non-protected metallic fasteners shall be made of stainless steel or aluminum. All components shall be similar material, or be isolated to reduce galvanic reactions.

Temperature and Humidity. Each PCMS shall be designed to operate continuously in extreme ambient temperature ranges and at high humidity levels.

Operating ambient temperature range of the portable sign and trailer assembly shall be -29°F to +165°F. Storage temperature range shall be from -40°F to +185°F. The portable sign shall be capable of continued operation within the operating temperature ranges specified without the need for active systems (i.e., fans). Operating relative humidity level of the portable sign shall be up to 95% non-condensing.

Sign Face. Sign face material shall be protected by a non-glaring polycarbonate material of at least ¼-inch thickness. It shall be replaceable and manufactured of material rated for outside use and resistant to UV degradation (exposure to the sun).

All electronics and pixels shall be protected from damage due to moisture.

Sign Housing Construction. The portable sign housing, including its front face panels, shall be designed to conform to the requirements of minimum NEMA Type 3R, as described in the latest edition of NEMA 250.

It shall be comply with latest structural AASHTO requirements.

It shall be constructed of aluminum sheeting which shall not be less than 1/8-inch thick with all seams continuously welded by the inert gas process.

The front of the sign housing shall have a flat black matte finish.

Weep holes shall be provided in the housing to allow moisture from condensation to escape.

The sign housing and cabinets shall be designed to keep insects out.

The sign housing shall be constructed in such a manner as to prohibit stray light from reducing legibility.

All sides of the sign housing shall have a maintenance-free finish.

Alignment of the sign housing shall be capable of being horizontally adjusted to position the sign a full 360 degrees. It shall be capable of rotating and locking at any selected horizontal angle up to 360 degrees. A sight alignment tube/device shall be mounted to horizontally position the sign display. A positive brake assembly with lockable control arm shall be provided to position the sign display in the desired position.

It shall allow easy access to all components contained within the display housing without the removal of any external parts. Door locks shall be rigidly mounted. Gasketing shall be provided on all door openings and shall be dust-tight, permanently bonded to the door metal, and shall not stick to the mating metal surface. A gasket channel shall be provided to support the gasket on the door.

Trailer. Each PCMS trailer shall meet all requirements for trailers as outlined in Section 3.3.3 of the latest NEMA TS-4 standard as well as the following minimum requirements.

All trailers shall meet the requirements of FMVSS, Part 571 and SAE J684 for transport safety including, but not limited to the use of brakes, safety chains, coupling device, and lights. PCMS manufacturer shall provide instructions stating procedures necessary to insure safe transport.

The structural frame shall be capable of supporting the gross vehicle weight (GVW) load of the trailer corresponding to the axle and tire ratings that shall be in accordance with FMVSS, Part 571.

The tires shall be radial ST "Special Trailer" rated. The wheels shall be 15-inch steel wheels with five lug bolts per wheel. Each trailer wheel shall be equipped with one locking lug nut. A minimum of four keys for the locking lug nuts shall be supplied for each trailer.

The trailer shall be provided with a minimum of four outriggers or leveling jacks. One outrigger or leveling jack shall be mounted near each corner of the trailer. The length of the leveling jacks shall be such that when the trailer is level, all four jacks and the tongue jack can be lowered into the vertical position. The jacks shall be screw type jacks with a minimum 25-inch lift. Each jack shall include a swivel mechanism that allows the jacks to be swing up to a horizontal position for towing. The swivel mechanism shall secure the jack in both vertical and horizontal positions through a lock pin.

The trailer shall also be provided with a trailer stand mounted on the tongue of the trailer. The stand shall be corrosion resistant. It shall include a 6-inch wheel that allows horizontal positioning of the trailer. The stand shall be welded, not bolted, to the tongue of the trailer.

The trailer shall be provided with legal tail/brake lights, signals, and license plate mounting bracket. The trailer shall be supplied with an electrical harness assembly for connection to the tow vehicle and shall be terminated in a connector type to be specified by the Engineer.

The trailer shall be provided with a 2-inch "hammer blow coupler" style hitch in accordance with SAE J684 and interchangeable with a 2½-inch Pintle coupler / ring meeting SAE J847.

The trailer spring leafs shall be rated at a minimum of 3500 pounds.

The trailer shall be equipped with a sign display lift and control console. The lift shall be electric, hydraulic lift, or combination of both with manual backup lift. The lift shall be capable of lifting the display a minimum of seven feet (7') above the roadway surface. A mast safety pin shall be provided to prevent the sign display from falling in the event of an electric or hydraulic system failure.

The trailer shall have a minimum of 6,000-pound capacity hydraulic surge brake system along with a breakaway latch.

Illumination shall be provided as an integral part of the sign or trailer assembly to change the sign controller data in darkness.

The trailer shall contain batteries and photovoltaic (solar) panels as specified herein.

Photovoltaic (Solar) Panel System. Each PCMS shall include solar panels. A solar bank shall be assembled using multiple solar panels. All photovoltaic panels shall be listed in accordance with UL 1703, or equivalent. The solar cell bank shall have a minimum capacity of 240 watts. The

solar cell bank shall be mounted on a frame capable of being tilted at a minimum of one direction up to 61 degrees with zero degrees being horizontal. Solar cells shall be laminated between ethylene vinyl acetate and tempered glass. The solar panel shall incorporate an extruded aluminum frame. The solar battery charge controller shall include the following three state charger modes.

- Bulk
- Absorption
- Float

Battery Requirements. Each PCMS shall include batteries for primary energy storage on trailers. The battery bank capacity shall be a minimum of 900 amp/hours at 12VDC at 20-hour rate of discharge. The batteries shall be heavy duty deep cycle type rated for 80% discharge. A battery power disconnect shall be provided.

Battery enclosures shall be vented to prevent the accumulation of explosive gases. The battery cabinets must be lockable with a standard padlock.

AC Charging System. Each PCMS shall have an AC battery charging sub-system. The system shall be UL listed and operate from a standard 120VAC generator meeting all NEC requirements for portable equipment.

The solar battery charger shall include the following three state charger modes.

- Bulk
- Absorption
- Float

The AC battery charger shall have sufficient capacity to charge the battery bank from 80% discharged to fully charge in 24-hours, and operate the sign simultaneously. The AC battery charger shall be equipped with a male plug-in and a 50-foot long extension cord constructed of a minimum 12-gauge wire for this purpose.

907-619.02.14.2--Controller to Sign Interface. Each PCMS shall meet all applicable controller to sign interface requirements as outline in Section 4 of the NEMA TS-4 standard.

907-619.02.14.3--Display Properties. Each PCMS shall have a cone of vision (viewing angle) from the center (reference axis) shall be a minimum 15 degrees with the half-power viewing angle defined such that at a given distance from the LED, luminous intensity measured at any point at an angle of 7.5 degrees from the LED's center axis is no less than half the luminous intensity measured directly on the LED's center axis.

The minimum word legibility requirements shall be 1232 feet or greater under daytime light conditions and within the cone of visions as specified. Legibility is defined as the ability to discern the content of a display using a "word message". The minimum word legibility

requirement shall be documented either by a MDOT approved independent testing laboratory or by participation in the NTPEP test program.

The minimum visibility requirements shall be 3000 feet or greater under daytime light conditions and within the cone of vision as specified. Visibility is defined as the ability to recognize that a display exists. The minimum visibility requirement shall be documented either by a MDOT approved independent testing laboratory or by participation in the NTPEP test program.

The PCMS shall be capable of displaying standard fonts and font alphabets as specified in Sections 5.6.1 and 5.6.2.3 of the NEMA TS-4 standard and adhere to NTCIP 1203. The PCMS shall also support moving arrows.

Any NTPEP test results shall be for the PCMS model being used and shall be within the last three completed test cycles.

907-619.02.14.4--Optical Components. The pixels for the PCMS shall be manufactured using Light Emitting Diodes (LED). Changes to displays shall be performed by turning the LEDs in a pixel either on or off. The discrete, LED shall be an untinted, non-diffused, solid-state lamp that uses Aluminum Indium Gallium Phosphide (AlInGap) technology manufactured by Avago Technologies (formerly Agilent Technologies), Toshiba Corporation, Nichia Corporation, or functional equivalent. Horizontal and vertical spacing between modules shall be such that the horizontal and vertical pitch between all pixels is equal. A failure of one pixel shall not effect the operation of any other pixel.

All LEDs used to create a display in a single portable sign shall have a nominally rated LED life of 100,000 hours of operation under field conditions. This shall include a operating temperatures between -29°F to +165°F. LED life shall be defined as the time it takes for the LED light output to degrade to half of the LED's initial light output. Current through an LED shall be limited to the manufacturer's recommendation under any conditions. Each LED character module shall be rated for use over the environmental range specified herein, including heat absorption due to sunlight. The LEDs shall be protected from the outside environmental conditions, including moisture, snow, ice, wind, dust, dirt, and UV rays (UVA and UVB). All LEDs shall be mounted so that they present a uniform and legible display.

Pixels shall be replaceable in modular groupings (modules). All modules within a sign shall be the same size and interchangeable. The replacement of any module shall be possible with no more that simple non-vendor-specific hand tools, such as screw drivers or wrenches, without any physical modification to the module.

907-619.02.14.5--PCMS Controller and Storage Cabinets. All PCMS controller and storage cabinets shall be minimum NEMA 3R rated and be completely encased and lockable with a standard padlock as specified herein. A separate lockable storage cabinet shall be provided to house various accessories. The controller cabinet shall be manufactured to withstand all types of adverse weather conditions and shall be designed and installed to keep insects out. All components inside the controller cabinet shall be accessible without disconnecting any

unassociated wires or components. The controller cabinet shall be illumination. The keyboard terminal and control panel shall be housed. Lighted keys and terminal displays are acceptable.

All controls in the controller cabinet shall be labeled. The cabinet shall have a voltmeter gauge to indicate the current battery charge status. It shall have an amp gauge to indicate the current/charging status. It will be acceptable to have a display via digital readout on a control console or panel.

907-619.02.14.6--Electronics and Electrical. Each PCMS shall meet all applicable electronics and electrical requirements as outline in Section 8 of the NEMA TS-4 standard.

Sign Controller. The PCMS shall include a local sign controller with firmware. The local control interface shall have a keyboard capable of allowing full programming and control of the PCMS locally. It shall have a separate serial RS-232 or USB connection to allow a laptop computer using the remote control software to communicate directly with the sign controller.

Local and remote interfaces shall be password protected to safeguard against unauthorized use.

It shall perform and report the following minimum sign diagnostics both through the local interface and Remote Control Subsystem.

- LED brightness controls
- Sign status
- Communications status
- Battery voltage
- Photocell ambient light level.

It shall automatically report a low battery alarm to a remote user through the Remote Control Subsystem. It shall have an alarm for the controller door open and over temperature.

It shall store and display both textual and graphical symbols. It shall store a minimum of 20 pre-programmed messages and graphics. It shall display preprogrammed (by manufacturer) Manual on Uniform Traffic Control Devices (MUTCD) symbolic messages and standard arrows. It shall schedule predetermined sequences of messages based on a programmed time and date. Each sequence shall display up to four (4) programmed messages (text and/or graphics). It shall display conventional one, two, or three-line messages for display with a choice of a minimum of three font sizes. Character width shall be proportional to the letter type. The one line message font size shall be capable of displaying messages in full size to utilize the maximum area of display.

It shall allow for automatic and manual controls to adjust the brightness of the LEDs. Automatic control shall be capable of varying the LED brightness by sensing the ambient light level using photocells. Manual brightness control shall be password protected to safeguard against unauthorized use.

It shall display a preprogrammed default message or no message at all, after a power recovery from a power failure. The sign shall shut down its LED display if internal cabinet temperatures reach a level that is determined unsafe by the manufacturer.

All communications and power cabling shall be either shielded or routed within conduit to minimize potential EMI/RFI effects.

Remote Control Subsystem. The PCMS shall be supplied with all the hardware and software necessary to control the PCMS from a remote central station.

It shall have a cellular phone and/or modem capable of communication using a MDOT provided cellular service provider. The Contractor shall coordinate with MDOT for cellular service provider. The Contractor shall be responsible for establishing cellular service and providing activated phone number(s) as directed and approved by the MDOT. The Contractor shall pay for cellular service for this project until the Final Maintenance Release as documented by the State Construction Engineer at which time it will be turned over to MDOT.

The cellular service type shall be CDMA/1xRTT or GSM/GPRS, as directed by MDOT.

It shall be capable of supporting connection and remote control, programming and diagnostics via the Internet.

The subsystem shall have all necessary hardware such as external antenna, communications cables, and controller interface and NTCIP Sign controller software. The central station software meeting the following minimum requirements:

- Windows XP compatible
- Capable of running on any desktop or laptop.
- Capable of controlling all PCMS functions through windows and GUIs (Graphical User Interface)
- NTCIP compatible as specified herein.

Communications. In addition to any protocols that may be available from the PCMS Manufacturer, each sign controller shall support NTCIP as follows.

- NTCIP Protocol and Command Sets. This specification references several standards through their NTCIP designated names and numbers. Each NTCIP Component covered by these project specifications shall implement the most recent version of the standard that is available as of project advertisement date, including any and all prepared Amendments to these standards as of the same date.

Profile Implementation Conformance Specifications (PICS) for each NTCIP standard required shall be submitted for review and approval to the Department.

- RS-232 Interface. Communication interfaces using RS-232 shall conform, with the following minimum requirements.

- 1101 – NTCIP Simple Transportation Management Framework (STMF)
- 1203 - NTCIP Object Definition for Portable Dynamic Message Signs
- 2301 - NTCIP AP-STMF
- 2201 - NTCIP TP-Transportation Transport Profile
- 2103 – NTCIP SPPPP/RS232
- 2104 - NTCIP SP-PMPP/RS232

- Subnet Level. For each communication interface, the NTCIP Components may support additional Subnet Profiles at the manufacturer’s option. At any time, only one Subnet Profile shall be active on a given communication interface. The NTCIP Component shall be configurable to allow the field technician to activate the desired Subnet Profile.
- Transport Level. For each communication interface, the communication interface may support additional Transport Profiles at the manufacturer's option. Response data-grams shall use the same Transport Profile used in the request. Each communication interface shall support the receipt of data-grams conforming to any of the identified Transport Profiles at any time.
- Application Level. For each communication interface, all interfaces shall comply with NTCIP 1101 and shall meet the requirements for Conformance Level 1 (NOTE -See Amendment to standard). Optionally, the NTCIP Component may support SNMP traps. A communication interface may support additional Application Profiles at the manufacturer's option. Responses shall use the same Application Profile used by the request. Each communication interface shall support the receipt of Application data packets at any time allowed by the subject standards.

Information Level. For all communication interfaces, the information level protocol shall provide Full, Standardized Object Range Support of all objects required by these procurement specifications unless otherwise indicated below. The maximum Response Time for any object or group of objects shall be 200 milliseconds. All communication interfaces shall implement all mandatory objects of all mandatory Conformance Groups as defined in NTCIP 1203 and their respective Amendments. Table 1 indicates the modified object requirements for these mandatory objects. Table 2 shows the required minimum support of messages that are to be stored in permanent memory. The sign shall blank if a command to display a message contains an invalid Message CRC value for the desired message. Table 3 specifies the support of the required MULTI tags and their ranges.

It shall also implement all mandatory objects of the following optional conformance groups of NTCIP 1201.

- Time Management Conformal Group
- Report Conformal Group. Table 4 indicates the modified object requirements.
- Implement all objects of the Font Configuration Conformance Group, as defined in NTCIP 1203. Table 5 indicates the modified object requirements for this conformance group.

- Implement all objects of the PCMS Configuration Conformance Group, as defined in NTCIP 1203.
- Implement all objects of the Multi Configuration Conformance Group, as defined in NTCIP 1203. Table 6 indicates the modified object requirements for this conformance group.
- Implement all objects of the Multi Error Configuration, as defined in NTCIP 1203.
- Implement all objects of the Illumination/Brightness.
- Sign Status, as defined in NTCIP 1203.
- Status Error, as defined in NTCIP 1203.
- Pixel Error Status, as defined in NTCIP 1203.
- The sign display shall be capable of displaying preprogrammed Manual on Uniform Traffic Control Devices (MUTCD) symbolic messages and standard arrows. Since the display of graphics is currently not defined within the NTCIP Standards or their amendments, the vendor shall propose, and provide detailed documentation (i.e., interface protocol description level), how the specified graphical shapes can be displayed.
- Implement the optional objects listed in Table 7.

Table 1
Modified Object Ranges for Mandatory Objects

Object	Reference	Project Requirement
ModuleTableEntry	NTCIP 1201 Clause 2.2.3	Shall contain at least one row with moduleType equal to 3 (software). The moduleMake shall specify the name of the manufacturer, the moduleModel shall specify the manufacturer's name of the component and the modelVersion shall indicate the model version number of the component.
MaxGroupAddresses	NTCIP 1201 Clause 2.7.1	Shall be at least 1
CommunityNamesMax	NTCIP 1201 Clause 2.8.2	Shall be at least 3
PCMSNumPermanentMsg	NTCIP 1203 Clause 2.6.1.1.1.1	Shall be at least 20*
PCMSMaxChangeableMsg	NTCIP 1203 Clause 2.6.1.1.1.3	Shall be at least 50. Each message shall support at least 4 pages per message.
PCMSFreeChangeableMemory	NTCIP 1203 Clause 2.6.1.1.1.4	Shall be at least 70 when no messages are stored.
PCMSMessageMultiString	NTCIP 1203 Clause 2.6.1.1.1.8.3	The PCMS shall support any valid MULTI string containing any subset of those MULTI tags listed in Table 4.
PCMSControlMode	NTCIP 1203 Clause 2.7.1.1.1.1	Shall support at least the following modes: <ul style="list-style-type: none"> ▪ local ▪ external ▪ central ▪ centralOverride

Table 2
Content of Permanent Messages

Perm. Msg. Num.	Section 12 Description
1	Permanent Message #1 shall blank the display (i.e., command the sign to use PCMSMessageType 7). It shall have a run-time priority of 50.

Table 3
Required MULTI Tags

Code	Feature
f1	Field 1 - time (12hr)
f2	Field 2 - time (24hr)
f8	Field 8 - day of month
f9	Field 9 - month
f10	Field 10 - 2 digit year
f11	Field 11 - 4 digit year
F1 (and /f1)	flashing text on a line by line basis with flash rates controllable in 0.5 second increments.
Fo	Font
J12	justification - line - left
J13	justification - line - center
J14	justification - line - right
J15	justification - line - full
Jp2	justification - page - top
Jp3	justification - page - middle
Jp4	justification - page - bottom
N1	New line
Np	New page, up to 2 instances in a message (i.e., up to 4 pages/frames in a message counting first page)
Pt	page times controllable in 0.5 second increments.

Table 4
Modified Object Ranges for the Report Conformance Group

Object	Reference	Project Requirement
maxEventLogConfigs	NTCIP 1201 Clause 2.5.1	Shall be at least 50
eventConfigurationMode	NTCIP 1201 Clause 2.4.3.1	The NTCIP Component shall support the following Event Configuration Modes: <ul style="list-style-type: none"> ▪ onChange ▪ greaterThanValue ▪ smallerThanValue
maxEventLogSize	NTCIP 1201 Clause 2.5.3	Shall be at least 200
maxEventClasses	NTCIP 1201 Clause 2.5.5	Shall be at least 16

Table 5
Modified Object Ranges for the Font Configuration Conformance Group

Object	Reference	Project Requirement
numfont	NTCIP 1203 Clause 2.4.1.1.1.1	Shall be at least 3*
maxFontCharacters	NTCIP 1203 Clause 2.4.1.1.1.3	Shall be at least 127**

* Upon delivery, the first font shall be a standard 18-inch font. The second font shall be a double-stroke 18-inch font. The third font shall be a 28-inch font.

** Upon delivery, the first three font sets shall be configured in accordance with the ASCII character set for the following characters:

"A" thru "Z" - All upper case letters.

"a" thru "z" - All lower case letters.

"0" thru "9" - All decimal digits.

Space (i.e., ASCII code 0x20).

Punctuation marks shown in brackets [. , ! ? - ' ' " " / ()]

Special characters shown in brackets [# & * + < >]

Table 6
Modified Object Ranges for the MULTI Configuration Conformance Group

Object	Reference	Project Requirement
defaultBackgroundColor	NTCIP 1203 Clause 2.5.1.1.1.1	The PCMS shall support the following background colors: <ul style="list-style-type: none"> ▪ black
defaultForegroundColor	NTCIP 1203 Clause 2.5.1.1.1.2	The PCMS shall support the following foreground colors: <ul style="list-style-type: none"> ▪ amber ▪ orange
defaultJustificationLine	NTCIP 1203 Clause 2.5.1.1.1.6	The PCMS shall support the following line justification: <ul style="list-style-type: none"> ▪ Left ▪ Center ▪ Right ▪ Full
defaultJustificationPage	NTCIP 1203 Clause 2.5.1.1.1.7	The PCMS shall support the following forms of page justification: <ul style="list-style-type: none"> ▪ Top ▪ Middle ▪ Bottom
defaultPageOnTime	NTCIP 1203 Clause 2.5.1.1.1.8	The PCMS shall support the full range of these objects with step sizes no larger than 0.5 seconds
defaultPageOffTime	NTCIP 1203 Clause 2.5.1.1.1.9	The PCMS shall support the full range of these objects with step sizes no larger than 0.5 seconds
defaultCharacterSet	NTCIP 1203 Clause 2.5.1.1.1.10	The PCMS shall support the following character sets: <ul style="list-style-type: none"> ▪ eightBit

Table 7
Optional Object Requirements

Object	Reference	Project Requirement
globalSetIDParameter	NTCIP 1201 Clause 2.2.1	
eventConfigLogOID	NTCIP 1201 Clause 2.5.2.7	
eventConfigAction	NTCIP 1201 Clause 2.5.2.8	
eventClassDescription	NTCIP 1201 Clause 2.5.6.4	
defaultFlashOn	NTCIP 1203 Clause 2.5.1.1.1.3	The PCMS shall support the full range of these objects with step sizes no larger than 0.5 seconds
defaultFlashOff	NTCIP 1203 Clause 2.5.1.1.1.4	The PCMS shall support the full range of these objects with step sizes no larger than 0.5 seconds
PCMSSWReset	NTCIP 1203 Clause 2.7.1.1.1.2	
PCMSMessageTimeRemaining	NTCIP 1203 Clause 2.7.1.1.1.4	
PCMSShortPowerRecoveryMessage	NTCIP 1203 Clause 2.7.1.1.1.8	
PCMSLongPowerRecoveryMessage	NTCIP 1203 Clause 2.7.1.1.1.9	
PCMSShortPowerLossTime	NTCIP 1203 Clause 2.7.1.1.1.10	
PCMSResetMessage	NTCIP 1203 Clause 2.7.1.1.1.11	
PCMSCommunicationsLossMessage	NTCIP 1203 Clause 2.7.1.1.1.12	
PCMSTimeCommLoss	NTCIP 1203 Clause 2.7.1.1.1.13	
PCMSEndDurationMessage	NTCIP 1203 Clause 2.7.1.1.1.15	
PCMSMemoryMgmt	NTCIP 1203 Clause 2.7.1.1.1.16	The PCMS shall support the following Memory

		management Modes: <ul style="list-style-type: none"> ▪ normal ▪ clearChangeableMessage ▪ clearVolatileMessages
PCMSMultiOtherErrorDescription	NTCIP 1203 Clause 2.7.1.1.1.20	If the vendor implements any vendor-specific MULTI tags, the PCMS shall be provided with documentation that includes meaningful error messages within this object whenever one of these tags generates an error.
PCMSIllumLightOutputStatus	NTCIP 1203 Clause 2.8.1.1.1.9	
watchdogFailureCount	NTCIP 1203 Clause 2.11.1.1.1.5	
PCMSStatDoorOpen	NTCIP 1203 Clause 2.11.1.1.1.6	
fanFailure	NTCIP 1203 Clause 2.11.2.1.1.8	
fanTestActivation	NTCIP 1203 Clause 2.11.2.1.1.9	
tempMinCtrlCabinet	NTCIP 1203 Clause 2.11.4.1.1.1	
tempMaxCtrlCabinet	NTCIP 1203 Clause 2.11.4.1.1.2	
tempMinSignHousing	NTCIP 1203 Clause 2.11.4.1.1.5	
tempMaxSignHousing	NTCIP 1203 Clause 2.11.4.1.1.6	

NTCIP Compliance Documentation. Software shall be supplied with full documentation, including a CD-ROM containing ASCII versions of the following Management Information Base (MIB) files in Abstract Syntax Notation 1 (ASN.1) format.

The relevant version of each official standard MIB Module referenced by the device functionality shall be included. If the device does not support the full range of any given object within a Standard MIB Module, a manufacturer specific version of the official Standard MIB Module with the supported range indicated in ASN.1 format in the SYNTAX and/or DESCRIPTION fields of the associated OBJECT TYPE macro shall be provided. The filename of this file shall be identical to the standard MIB Module, except that it will have the extension ".man".

A MIB Module in ASN.1 format containing any and all manufacturer-specific objects supported by the device with accurate and meaningful DESCRIPTION fields and supported ranges indicated in the SYNTAX field of the OBJECT-TYPE macros shall be provided. This includes a MIB containing any other objects supported by the device.

Additionally, the manufacturer shall provide a test procedure that demonstrates how the NTCIP compliance of both, the data dictionaries (NTCIP 1201, 1203, and their amendments) and the communications protocols have been tested. The manufacturer shall allow the use of any and all of this documentation by any party authorized by the Procuring Agency for systems integration purposes at any time initially or in the future, regardless of what parties are involved in the systems integration effort.

907-619.02.14.7--Additional Equipment Requirements. When the contract requires the PCMS to include a speed radar unit, the radar shall operate in the "K" band, in an "approach only" mode. In conjunction with the radar, the sign shall be capable of displaying the vehicle speeds. The unit shall be programmable to allow the interruption of user-defined messages by the vehicle speed display and/or alternate messages whenever a settable speed threshold is exceeded. The radar unit shall be encased in an aluminum enclosure with a polycarbonate lens, and the metal portion shall receive the same protective coating, priming, and painting as the rest of the sign

907-619.02.14.8--System Documentation. For each PCMS, the Contractor shall provide two (2) user manuals. The user manual shall include description and samples for all operational functions, software required to operate the sign on site and remotely, all wiring diagrams, a parts lists, the sign specifications, warranty information, maintenance information and schedule, and a trouble shooting table

Each copy shall be bound and shall contain laminated sheets.

907-619.03--Construction Requirements. After Subsection 619.03.9 on page 427, add the following.

907-619.03.10--Changeable Message Sign. Each changeable message sign shall be installed and continuously operated at the location selected by the Engineer on State right-of-way. The Contractor is advised that selected locations may be outside the planned indicated limits of the project. The Contractor shall perform all work necessary for preparation of the site selected and approved by the Engineer, to insure maximum safety for and sign visibility of the traveling public; and may be required to remove any temporary work at a later date as directed by the Engineer. The Contractor will also place a minimum of two plastic drums in advance of the sign and one beside the sign as long as it is in use. The Contractor shall be required to move the sign to a new location if directed by the Engineer.

The Contractor may be permitted to bring electric power from outside the normal right-of-way for operation of the equipment if the Department determines that the installation operation will not be hazardous to the traveling public. The Contractor will be required to secure a permit from the Department prior to any work by the power company on the right-of-way. The entire cost of

providing electrical service, power to operate the equipment, and removal of the power source from the right-of-way shall be borne by the Contractor.

The changeable message sign(s) will remain the property of the Contractor after the Engineer determines that there is no further need for the sign(s) on the project.

907-619.04--Method of Measurement. After the last paragraph of Subsection 619.04 on page 428, add the following.

Changeable message signs, as described above, will be measured by the unit. When directed, separate measurements will be made for items included in the contract and required for temporary site preparation for the sign as referenced in Subsection 907-619.03.10. Materials for which no pay items are included in the contract will not be measured for separate payment. Separate measurements will not be made for moving the changeable message sign to a new location, but materials used for which pay items are included in the contract and are necessary for repositioning the sign as directed by the Engineer will be measured for separate payment. Removal of materials used for site preparation for changeable message signs will not be measured for separate payment.

907-619.05--Basis of Payment. After the second paragraph of Subsection 619.05 on page 428, add the following.

Payment for items required by the Engineer for temporary location of the changeable message sign, and for which pay items are included in the contract, will be made by the individual pay item. No additional payment will be made for having to work outside the planned indicated project limits.

Payment for removal of materials used for site preparation at changeable message sign locations shall be included in the contract bid price for Maintenance of Traffic.

Between pay item nos. 619-E2 and 619-F1 on page 429, insert the following:

907-619-E3: Changeable Message Sign * - per each

* Indicate when options are required

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-680-1

CODE: (SP)

DATE: 08/17/2011

SUBJECT: Portable Construction Lighting

Division 680, Portable Construction Lighting, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-680.02--Materials.

907-680.02.1--Tower Lights. Delete the second and third paragraphs of Subsection 680.02.1 on page 561, and substitute the following:

Tower lights shall be of sufficient wattage and/or quantity to provide an average maintained horizontal luminance in accordance with Subsection 907-680.02.3. In no case shall the main beam of the light be aimed higher than 30° above straight down. The lights should be set as far from traffic as practical and aimed in the direction of, or normal to, the traffic flow.

Delete Subsection 680.02.2 on page 561, and substitute the following:

907-680.02.2--Balloon Lights. All moving equipment used during night time operations shall have a balloon lighting system and flashing amber light on the equipment. In lieu of a flashing amber light, the Contractor may install four square feet of approved reflective material on the equipment in a location that will be seen by the traveling public. This lighting system shall illuminate the work area in each direction of travel of the equipment. Machine balloon lights shall be mercury vapor, metal halide, high pressure sodium or low pressure sodium in conventional roadway enclosed fixtures mounted on supports attached to the construction machine at a height of approximately thirteen (13) feet. The power supply shall be of sufficient capacity to operate the light(s) and shall be securely mounted on the machine. Electrical grounding of generators to frames of machines on which they are mounted shall be done in conformance with the National Electrical Code (NEC).

The light fixtures shall be of sufficient wattage and/or quantity to provide an average maintained horizontal luminance in accordance with Subsection 907-680.02.3.

Balloon lights are in addition to conventional automotive type head lights which are necessary for maneuverability.

Delete Subsection 680.02.3 on pages 561 & 562, and substitute the following:

907-680.02.3--Lighting Levels. The submitted lighting plan shall indicate how the Contractor intends to accomplish the lighting of the work area(s). The lighting system shall provide a minimum of five (5) foot-candles throughout the work area. For stationary operations, the work

area shall be defined as the entire area where work is being performed. For mobile operations the work area shall be defined as 25 feet in front of and behind moving equipment.

907-680.03--Construction Requirements. Delete the first, second, third, and fourth paragraphs of Subsection 680.03 on page 562 and substitute the following:

Tower lights may be used when the night work is confined to a fairly small area and is essentially a stationary operation.

Balloon lights shall be used when the night work is not confined to a small area and is essentially a continuous moving construction operation.

Use of tower lights in lieu of balloon lights will be considered when the number of machines, type of work, or need for inspection justify their use as decided by the Engineer.

The work area where traffic control devices are being set up or repositioned at night shall be illuminated.

If night work requires the use of a flagger, then the flagger must be illuminated by balloon lighting.

907-680.05--Basis of Payment. Delete the pay item listed on page 563, and substitute the following:

907-680-A: Portable Construction Lighting - lump sum

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. 907-682-12

CODE: (SP)

DATE: 03/29/2011

SUBJECT: Branch Circuit Wire

Section 682, Electrical Distribution System, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

907-682.01--Description. After the last paragraph of Subsection 682.01 on page 570, add the following:

Where called for on the plans, some installations (both underground and structure mounted) will require only conductors. Branch circuit wire will consist of disconnecting and removal of existing conductors and grounds, cleaning the conduit, installing, testing and connecting new wire and any additional hardware necessary to complete the work.

907-682.03--Construction.

907-682.03.2--Secondary Distribution. At the end of Subsection 682.03.2 on page 572, add the following:

Branch circuit wire shall consist of disconnecting and removal of any existing conductors and ground, cleaning the existing conduit, installation of new wire of the type and size specified on the plans, and connecting the new wire. All conductors shall be tested in accordance with Subsection 907-681.02.1. The Contractor shall furnish any miscellaneous hardware, tools and materials necessary to provide a complete and functioning branch circuit.

907-682.05--Basis of Payment. Add the following to the list of pay items on page 573.

907-682-A1: Branch Circuit Wire, Size, No. of Conductors - per linear foot

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO SPECIAL PROVISION NO. 907-701-5

DATE: 09/17/2014

SUBJECT: Hydraulic Cement

In the last paragraph of Subsection 907-701.04.1.1 on page 3, change “AASHTO Designation: M 240, Table 3” to “AASHTO Designation: M 240, Table 4”.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SPECIAL PROVISION NO. 907-701-5

CODE: (SP)

| DATE: 08/20/2014

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. 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 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.
- **** 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. 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 IS – Portland blast-furnace slag cement
- Type IP – Portland-pozzolan cement
- Type IL – Portland-limestone cement

Blended cement **Types IS and IP** 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 3 and the “(MS)” suffix shall be added to the type designation.

907-701.04.1.2--Alkali Content. All blended cement shall be made with clinker that would result in cement meeting the requirements of Subsection 907-701.02.1.2 when used in the production of AASHTO Designation: M 85, Type I or Type II cement.

907-701.04.2--Replacement by Other Cementitious Materials. The maximum replacement of blended cement Type IL by weight is 35% for fly ash or 50% for GGBFS. Replacement contents below 20% fly ash or 45% 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 blended cement by fly ash or GGBFS. 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 Types IS and IP.

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 3.

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. 907-711-4

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

SPECIAL PROVISION NO. 907-713-3

CODE: (IS)

DATE: 05/01/2013

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 **responsibility of the Contractor** 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. **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.**

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. 907-714-8

CODE: (IS)

| DATE: 05/01/2013

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 8.0%.

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

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:** 04/23/2013

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 pumpline 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.

All welds shall be performed by certified welders meeting the requirements of the approved shop drawings.

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 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 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.

907-804.03.19.7.4--Acceptance Procedure for Bridge Deck Smoothness. Delete the third sentence of the first paragraph of Subsection 804.03.19.7.4 on page 886, and substitute the following.

The profilograph shall meet the requirements of Subsection 907-804.03.19.7.5.

After the fourth sentence of the first paragraph of Subsection 804.03.19.7.4 on page 886, add the following.

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

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.

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.

Delete the first sentence of the second paragraph of Subsection 804.03.19.7.4.1.3 on page 889 and substitute the following.

The finished bridge decks and bridge end slabs shall be retested for riding quality using a Contractor furnished profilograph meeting the requirements of Subsection 907-804.03.19.7.5.

After Subsection 804.03.19.7.4.1.3 on page 889, add the following.

907-804.03.19.7.5--Profilograph Requirements. The smoothness of the bridge deck will be determined by using a California Profilograph to produce a profilogram (profile trace) at each designated location. The surface shall be tested and corrected to a smoothness index as described herein with the exception of those locations or specific projects that are excluded from a smoothness test with the profilograph.

The profilograph, furnished and operated by the Contractor under supervision of the Engineer, shall consist of a frame at least 25 feet in length supported upon multiple wheels having no common axle. The wheels shall be arranged in a staggered pattern so that no two wheels will simultaneously cross the same bump. A profile is to be recorded from the vertical movement of a sensing mechanism. This profile is in reference to the mean elevation of the contact points established by the support wheels. The sensing mechanism, located at the mid-frame, may

consist of a single bicycle-type wheel or a dual-wheel assembly consisting of either a bicycle-type (pneumatic tire) or solid rubber tire vertical sensing wheel and a separate bicycle-type (pneumatic tire) longitudinal sensing wheel. The wheel(s) shall be of such circumference(s) to produce a profilogram recorded on a scale of one (1) inch equal to 25 feet longitudinally and one (1) inch equal to one (1) inch (full scale) vertically. Motive power may be provided manually or by the use of a propulsion unit attached to the center assembly. In operation, the profilograph shall be moved longitudinally along the pavement at a speed no greater than 3 MPH so as to reduce bounce as much as possible. The testing equipment and procedure shall comply with the requirements of Department SOP.

The Contractor may elect to use a computerized version of the profilograph in lieu of the standard profilograph. If the computerized version of the profilograph is used, it shall meet the requirements of Subsection 907-804.03.19.7.5.1.

907-804.03.19.7.5.1--Computerized Profilograph.

907-804.03.19.7.5.1.1--General The computerized profilograph, furnished and operated by the Contractor under the supervision of the Engineer, shall be equipped with an on-board computer capable of meeting the following conditions.

Vertical displacement shall be sampled every three (3) inches or less along the bridge deck. The profile data shall be bandpass filtered in the computer to remove all spatial wavelengths shorter than two (2) feet. This shall be accomplished by a third order, low pass Butterworth filter. The resulting band limited profile will then be computer analyzed according to the California Profilograph reduction process to produce the required inches per mile index. This shall be accomplished by fitting a linear regression line to the length of bridge. This corresponds to the perfect placement of the blanking band bar by a human trace reducer. Scallops above and below the blanking band are then detected and totaled according to the California protocol. Bump/Dip analysis shall take place according to the California Profilograph reduction process.

The computerized profilograph shall be capable of producing a plot of the profile and a printout which will give the following data: Stations every twenty five (25) feet, bump/dip height and bump/dip length of specification (3/10 of an inch and 25 feet respectively), the blanking band width, date of measurement, total profile index in inches per mile for the measurement, total length of the measurement, and the raw inches for each segment.

907-804.03.19.7.5.1.2--Mechanical Requirements. The profilograph shall consist of a frame twenty five (25) feet long supported at each end by multiple wheels. The frame shall be constructed to be easily dismantled for transporting. The profilograph shall be constructed from aluminum, stainless steel and chromed parts. The end support wheels shall be arranged in a staggered pattern such that no two wheels cross a transverse joint at the same time. The relative smoothness shall be measured by the vertical movement of an eight (8) inch or larger diameter sensing wheel at the midpoint of the 25-foot frame. The horizontal distance shall be measured by a twenty (20) inch or larger diameter pneumatic wheel. This profile shall be the mean elevation referenced to the twelve points of contact with the pavement established by the support wheels. Recorded graphical trace of the profile shall be on a scale of one inch equals one inch (full scale) vertical motion of the sensing wheel and one inch equals 25 feet horizontal motion of the profilograph.

907-804.03.19.7.5.1.3--Computer Requirements. The computer shall have the ability to produce output on sight for verification. The computerized output shall indicate the profile index for each specified section of bridge deck. Variable low and high pass third-order Butterworth filtering options shall be available. The printout shall be capable of showing station marks automatically on the output. Blanking band positioning for each specified section of the bridge deck shall be placed according to the least squares fit line of the collected data. Variable bump and dip tests shall be available to show “must correct” locations on the printout. The computer must have the ability to display on screen “must correct” conditions and alert the user with an audible warning when a “must correct” location has been located. The computer must have the ability to store profile data for later reanalysis. The measurement program must be menu driven and PC compatible. User selected options, identification, calibration factors, and time and date stamps shall be printed at the top of each printed report for verification. The control software must be upgradeable. A power source shall be included for each profilograph and be capable of supplying all power needs for a full days testing.

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 any 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.

Lighting Repair at the US 78 / US 45 and US 178 / US 145 interchanges, known as State Project No. SP-0002-06(027) / 106908301 in Lee County.

Line No.	Item Code	Adj Code	Quantity	Units	Description [Fixed Unit Price]
Roadway Items					
0010	202-B055		7	Each	Removal of High Mast Lighting Assembly
0020	202-B056		5	Each	Removal of High Mast Lighting Foundation
0030	234-A001		40	Linear Feet	Temporary Silt Fence
0040	620-A001		1	Lump Sum	Mobilization
0050	682-E001		1	Each	Underground Junction Box
0060	683-A009		1	Each	Lighting Assembly, High Mast, Type 100-4-S
0070	683-A012		1	Each	Lighting Assembly, High Mast, Type 100-5-S
0080	683-A066		2	Each	Lighting Assembly, High Mast, Type 130-5-S
0090	683-A072		1	Each	Lighting Assembly, High Mast, Type 130-8-S
0100	684-A004		22	Cubic Yard	Pole Foundation, 36" Diameter
0110	684-A006		7	Cubic Yard	Pole Foundation, 48" Diameter
0120	684-B004		13	Linear Feet	Slip Casing, 36" Diameter
0130	684-B006		15	Linear Feet	Slip Casing, 48" Diameter
0140	907-237-A002		40	Linear Feet	Wattles, 12"
0150	907-618-A001		1	Lump Sum	Maintenance of Traffic
0160	907-618-B001		1	Square Feet	Additional Construction Signs [\$10.00]
0170	907-619-E3001		2	Each	Changeable Message Sign
0180	907-682-A1002		700	Linear Feet	Branch Circuit Wire, AWG #1/0, 3 Conductor
0190	907-682-A1004		1,400	Linear Feet	Branch Circuit Wire, AWG #2, 3 Conductor

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 _____

TO: EXECUTIVE DIRECTOR, MISSISSIPPI DEPARTMENT OF TRANSPORTATION
JACKSON, MISSISSIPPI

CERTIFICATE

If awarded this contract, I (we) contemplate that portions of the contract will be sublet. I (we) certify that those subcontracts which are equal to or in excess of fifty thousand dollars (\$50,000.00) will be in accordance with regulations promulgated and adopted by the Mississippi State Board of Contractors on January 13, 1999.

I (we) agree that this notification of intent DOES NOT constitute APPROVAL of the subcontracts.

NOTE: Insert name and address of subcontractors. (Subcontracts equal to or in excess of fifty thousand dollars (\$50,000.00) ONLY.)

_____	_____
(Individual or Firm)	(Address)
_____	_____
(Individual or Firm)	(Address)
_____	_____
(Individual or Firm)	(Address)
_____	_____
(Individual or Firm)	(Address)

NOTE: Failure to complete the above DOES NOT preclude subsequent subcontracts. Subsequent subcontracts, if any, equal to or in excess of fifty thousand dollars (\$50,000.00) will be in accordance with regulations promulgated and adopted by the Mississippi State Board of Contractors on January 13, 1999.

Contractor _____

By _____

Title _____

CERTIFICATE MUST BE EXECUTED

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. **SP-0002-06(027) / 106908301** _____.

in **Lee** _____ 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 are not currently under suspension, debarment, voluntary exclusion or determination of ineligibility; nor have a debarment pending; nor been suspended, debarred, voluntarily excluded or determined ineligible within the past three years by the Mississippi Transportation Commission, the State of Mississippi, any other State or a federal agency; nor been indicted, convicted or had a civil judgment rendered by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past three years.

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.

All of the foregoing and attachments (when indicated) is true and correct.

Executed on _____
Signature

(5/29/2008S)

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. **SP-0002-06(027) / 106908301** _____.

in **Lee** _____ 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 are not currently under suspension, debarment, voluntary exclusion or determination of ineligibility; nor have a debarment pending; nor been suspended, debarred, voluntarily excluded or determined ineligible within the past three years by the Mississippi Transportation Commission, the State of Mississippi, any other State or a federal agency; nor been indicted, convicted or had a civil judgment rendered by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past three years.

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.

All of the foregoing and attachments (when indicated) is true and correct.

Executed on _____
Signature

(5/29/2008S)

S E C T I O N 9 0 2

CONTRACT FOR SP-0002-06(027) / 106908301

LOCATED IN THE COUNTY(IES) OF Lee

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: SP-0002-06(027) / 106908301

LOCATED IN THE COUNTY(IES) OF: Lee

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, effective as of the contract date shown below, 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.

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 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.

_____ (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 **Lighting Repair at the US 78 / US 45 and US 178 / US 145 interchanges, known as State Project No. SP-0002-06(027) / 106908301 in Lee 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