

SECTION 905 -- PROPOSAL (CONTINUED)

I (We) hereby certify by execution of the Section 905 proposal below, that all certifications, disclosures and affidavits incorporated herein are deemed to be duly executed in the aggregate, fully enforceable and binding upon delivery of the bid proposal. I (We) further acknowledge that this certification shall not extend to the bid bond or alternate security which must be separately executed for the benefit of the Commission. This signature does not cure deficiencies in any required certifications, disclosures and/or affidavits. I (We) also acknowledge the right of the Commission to require full and final execution on any certification, disclosure or affidavit contained in the proposal at the Commission's election upon award. Failure to so execute at the Commission's request within the time allowed in the Standard Specifications for execution of all contract documents will result in forfeiture of the bid bond or alternate security.

Bidder acknowledges receipt of and has added to and made a part of the proposal and contract documents the following addendum (addenda):

ADDENDUM NO. 1 DATED 9/15/2015 ADDENDUM NO. DATED
 ADDENDUM NO. 2 DATED 10/20/2015 ADDENDUM NO. DATED

Number	Description
1	Postponed; Amendment EBS Download Required.
2	Revised Table of Contents; Revised Advertisement; Revised NTB Nos. 5799 & 5800; NTB No. 5824 replaces NTB No. 5050; Add NTB Nos. 5861 & 5862; SP 907-109-8 replaces 907-109-7; Add SP Nos.907-407-2 & 907-699-5; Revised SP No. 907-656-10; Revised Bid Items; Revised or Added Plan Sheet Nos. 1-2, 4-5, 7-17, 26; Amendment EBS Download Required.

TOTAL ADDENDA: 2
 (Must agree with total addenda issued prior to opening of bids)

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.

Revised 07/2015

STP-0010-01(150) / 106964301

Jackson County(ies)

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 5863

CODE: (SP)

DATE: 10/20/2015

SUBJECT: Readvertisement

PROJECT: STP-0010-01(150) / 106964301 – Jackson County

The contents of this proposal are the same as when advertised for the *September 2015* Letting, except as follows:

Revised Advertisement;

Revised Table of Contents;

Revised NTB Nos. 5799 & 5800;

NTB No. 5824 replaces NTB No. 5050;

Add NTB Nos. 5861 & 5862;

SP No. 907-109-8 replaces SP 907-109-7;

Add SP No. 907-407-2,

Revised SP No. 907-656-10;

Add SP No. 907-699-5;

Revised Bid Items;

Add this Notice to Bidders No. 5863.

**MISSISSIPPI DEPARTMENT OF TRANSPORTATION
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PROJECT: HSIP-0010-01(150)/106964301 - Jackson

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PROJECT: HSIP-0010-01(150)/106964301 - Jackson

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PROJECT: HSIP-0010-01(150)/106964301 - Jackson

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

10/20/2015 10:30 AM

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 5799

CODE: (SP)

DATE: 10/27/2015

SUBJECT: Contract Time

PROJECT: STP-0010-01(150) / 106964301 – Jackson County

The calendar date for completion of work to be performed by the Contractor for this project shall be **May 10, 2017** 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 **November 10, 2015** and the effective date of the Notice to Proceed / Beginning of Contract Time will be **March 10, 2016**.

Should the Contractor request a Notice to Proceed earlier than **March 10, 2016** 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.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 5800

DATE: 10/20/2015

SUBJECT: Specialty Items

PROJECT: HSIP-0010-01(150)/106964301 - JACKSON

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	219-A001	Watering
0040	234-A001	Temporary Silt Fence
0340	907-216-A001	Solid Sodding
0350	907-225-A001	Grassing
0360	907-225-B001	Agricultural Limestone
0370	907-225-C001	Mulch, Vegetative Mulch
0380	907-237-A002	Wattles, 12"
0390	907-246-A002	Sandbags

CATEGORY: FENCE, GATES

Line No	Pay Item	Description
0090	607-B017	96" Type I Chain Link Fence, Class I
0100	607-G044	Gate, 10' x 8' Chain Link
0110	607-P1011	Line Post, 12' x 2" Galvanized Steel
0120	607-P2012	Brace Post, 12' x 2 1/2" Galvanized Steel
0130	607-P3010	Gate Post, 12' x 3 1/2" Galvanized Steel

CATEGORY: GUARDRAIL, GUIDERAIL

Line No	Pay Item	Description
0050	606-B001	Guard Rail, Class A, Type 1
0060	606-C003	Guard Rail, Cable Anchor, Type 1
0070	606-D006	Guard Rail, Bridge End Section, Type G
0080	606-E003	Guard Rail, Terminal End Section, Non-Flared

CATEGORY: SURVEY AND STAKING

Line No	Pay Item	Description
1062	907-699-A002	Roadway Construction Stakes

CATEGORY: TRAFFIC CONTROL - PERMANENT

Line No	Pay Item	Description
0220	630-F001	Delineators, Guard Rail, White

CATEGORY: TRAFFIC CONTROL - PERMANENT

Line No	Pay Item	Description
0430	907-630-I001	Metal Overhead Sign Supports, Assembly No. 1, Contractor Designed
0440	907-630-I002	Metal Overhead Sign Supports, Assembly No. 2, Contractor Designed
0450	907-630-M003	Pedestal Sign Support, Assembly No 5, Contractor Designed
0460	907-630-M006	Pedestal Sign Support, Assembly No 3, Contractor Designed
0470	907-630-M007	Pedestal Sign Support, Assembly No 4, Contractor Designed
0480	907-630-M008	Pedestal Sign Support, Assembly No 6, Contractor Designed
0490	907-630-M009	Pedestal Sign Support, Assembly No 7, Contractor Designed
0500	907-630-O003	Remove and Reset Sign, All Sizes
0510	907-630-Q004	Post Sign Support, Assembly No. 8, Contractor Designed
0520	907-630-Q007	Post Sign Support, Assembly No. 9, Contractor Designed
0530	907-630-Q009	Post Sign Support, Assembly No. 10, Contractor Designed

CATEGORY: TRAFFIC CONTROL - TEMPORARY

Line No	Pay Item	Description
0140	619-D1001	Standard Roadside Construction Signs, Less than 10 Square Feet
0150	619-D2001	Standard Roadside Construction Signs, 10 Square Feet or More
0160	619-D3001	Remove and Reset Signs, All Sizes
0170	619-E1001	Flashing Arrow Panel, Type C
0180	619-G4001	Barricades, Type III, Single Faced
0190	619-G5001	Free Standing Plastic Drums
0200	619-G7001	Warning Lights, Type "B"
0420	907-619-E3001	Changeable Message Sign

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 5824

CODE: (SP)

DATE: 09/10/2015

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, CMS-2h, LD-7, CQS-1h, ETAC-H, and NTSS-1HM 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, CMS-2h	SS-1
LD-7, CQS-1h, ETAC-H, NTSS-1HM	CSS-1

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 – NOTICE TO BIDDERS NO. 5861

CODE: (SP)

DATE: 10/20/2015

SUBJECT: Lane Closure Restrictions

PROJECT: STP-0010-01(150) / 106964301 - Jackson County

Bidders are advised that note (1) of Lane Closures on Sheet Number 26 of the plans is in error. Closures will be limited as follows and as stated in notes (2&3):

- Work requiring a lane closure will only be permitted between the hours of 7:00 PM and 5:00 AM Sunday through Thursday. Lanes of the Interstate may not be closed between 5:00 A.M. Friday morning and 7:00 P.M. Sunday evening.
- Changes or variances from the listed restrictions shall be submitted to the Project Engineer for review and written approval.

A lane rental fee of **\$1,000.00** per full or partial 10 minutes shall be assessed for closures or obstructions that extend beyond the times mentioned above. No exposed signs shall be viewable to the traveling public prior to or after the above mentioned times. No part of a closures, drums or cones, shall be in the roadway prior to or after the above mentioned times.

Work requiring a lane closure shall begin within one (1) hour of the completion of the closure setup. Lane closures will be allowed only at times when work requiring a lane closure is underway.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 5862

CODE: (SP)

DATE: 10/20/2015

SUBJECT: Project Number Change

PROJECT: STP-0010-01(150) / 106964301—Jackson County

Bidders are hereby advised that any references to **Project Number HSIP-0010-01(150) / 106964301** in the plans or specifications shall be understood to mean **Project Number STP-0010-01(150) / 106964301**.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SPECIAL PROVISION NO. 907-109-8

CODE: (SP)

| DATE: 09/10/2015

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. 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%, **which also includes tax and bond.**

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:

In the last sentence of subparagraph (b) in Subsection 109.04 on page 91, change “bond” to “bond(s)”.

Delete the first and second paragraphs of subparagraph (d) in Subsection 109.04 on page 92 and substitute the following.

Equipment. For any machinery or special equipment, other than small tools, authorized by the Engineer, the Contractor will use the rates shown in 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, unless otherwise allowed by the Engineer. This book shall be used to determine equipment ownership and operating expense rates. These rates do not include allowances for operating labor, mobilization or demobilization costs, overhead or profit, and do not represent rental charges for those in the business of renting equipment. Operating labor and overhead cost will be allowed. Subject to advance approval of the Engineer, actual transportation cost for a distance of not more than 200 miles will be reimbursed for equipment not already on the project. The cost of transportation after completion of the force account work will be reimbursed except it cannot exceed the allowance for moving the equipment to the work.

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.

907-109.06.2--Advancement on Materials. Delete Subsection 109.06.2 on pages 94 & 95, and substitute the following.

907-109.06.2--Advancement on Materials. Partial payments may include advance payment for certain nonperishable or durable materials such as base aggregates, reinforcing steel, bridge piling, structural steel, prefabricated bridge components, traffic signal equipment, electrical equipment, fencing materials, and sign materials with approval of the Engineer. Advance payment may be requested for structural steel members provided fabrication has been completed and the members have been declared satisfactory for storage by a Department representative. The Contractor must make a written request to the Project Engineer for advanced payment and furnish written consent of the Surety. To qualify for advance payment, materials must be stored or stockpiled on or near the project or at other locations approved by the Engineer; or in the case of precast concrete members, treated timber, guard posts and other approved preprocessed durable and bulky materials, the materials may be stored at the commercial producer's yard provided it is located in Mississippi; or in the case of prestressed concrete members that may

require being produced at an out-of-state location, the prestress members shall be produced and may be stored at the commercial manufacturer's yard provided it is a PCI certified plant on the Department's List of Approved Prestress & Precast Plants and it is located within the continental United States; or in the case of structural steel members that may require fabrication at an out-of-state location, the fabricated members may be stored at the location of the commercial fabricator's yard provided it is located within the continental United States.

Advancements will not be allowed until the Project Engineer has received copies of material invoices and certified test reports or acceptable certificates of conformance, and in the case of materials stored at the commercial producer's/fabricator's yard, the material shall be positively identified for the specific project and a Certificate of Storage issued by the Department or a designated representative of the Department. Requests for advancements on fabricated structural steel members and prestress concrete members stored out-of-state will be denied when the Department does not have available a designated representative to issue a Certificate of Storage.

The Contractor shall make suitable arrangements to the satisfaction of the Engineer for storage and protection at approved sites or, in the case of materials stored at the commercial producer's yard located in Mississippi or, in the case of fabricated structural steel members stored at the commercial fabricator's yard or prestress concrete members stored at a commercial manufacturer's yard located within the continental United States, the Contractor shall make arrangements with the producer/fabricator for suitable storage and protection. If advanced payment is allowed and the materials are damaged, lost, destroyed or for any reason become unacceptable, the previous payments will be deducted from subsequent estimates until the materials are replaced or restored to an acceptable condition. In all cases, the Contractor shall save harmless the Commission in the event of loss or damage, regardless of cause.

An invoice or an accumulation of invoices for each eligible material must total \$10,000 or more before consideration will be given for making advanced payment. When allowed, advance payment will be based on verified actual material cost plus transportation charges to the point of storage. Sales tax, local haul and handling costs shall not be included as material cost.

Advanced payment shall not exceed 100% of the invoice price or 75% of the total contract bid price for the pay item, whichever is less.

Advanced payment for a component of a pay item shall not exceed 95% of the invoice price or 75% of the total contract bid price for the pay item of which the material is a part, whichever is less.

Advanced payment will be made only on materials that will be incorporated permanently in the project.

No advanced payment will be made on minor material items, hardware, etc.

No advanced payment will be made for materials when it is anticipated that those materials will be incorporated into the project within 60 calendar days.

Advanced payment will be paid for those materials which are not readily available, and which can be easily identified and secured for a specific project and for which lengthy stockpiling periods would not be detrimental.

Where a storage area is used for more than one project, material for each project shall be segregated from material for other projects, identified, and secured. Adequate access for auditing shall be provided. All units shall be stored in a manner so that they are clearly visible for counting and/or inspection of the individual units.

Unless specifically provided for in the contract, advance payment will not be made on materials, except for fabricated structural steel members or prestress concrete members, stored or stockpiled outside of the State of Mississippi.

Materials for which an advanced payment has been allowed must be paid for by the Contractor within 60 days of the estimate on which the advanced payment was first allowed and proof of said payment must be verified by the supplier. If proof of payment is not furnished within the allowable 60 days, the advanced payment will be deducted on subsequent current estimates until such time proof of payment is furnished.

As the materials are incorporated into the work, proportionate reductions for advance payments shall be made from monthly estimates covering the work performed. Calculation of percentage of completion, or rate of progress, shall be based on completed work and no consideration will be given to stockpiled materials.

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."

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. 907-407-2**

CODE: (SP)

| **DATE: 07/22/2014**

SUBJECT: Tack Coat

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

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

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

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

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

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

907-407-A: Asphalt for Tack Coat *

- per gallon

* Grade may be specified

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-656-10

CODE: (SP)

DATE: 09/29/2015

SUBJECT: Dynamic Message Sign

PROJECT: STP-0010-01(150) / 106964301 – Jackson County

Section 907-656, Dynamic Message Sign, 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 907-656--DYNAMIC MESSAGE SIGN

907-656.01--Description. This Special provision describes furnishing, installing and integrating a stationary electronic Dynamic Message Sign (DMS) assembly. The Contractor shall supply a complete operating Light Emitting Diode (LED) sign including the sign housing, sign controller unit (SCU), roadside DMS controller cabinet, all cabling, conduits, electrical service, surge suppression and all hardware associated with a complete installation as required by these Special Provisions.

The DMS assemblies will provide MDOT personnel with a means to visually communicate with motorists regarding incidents, accidents, special events, travel times, etc., that may impact travel on the roadway network.

907-656.02--Materials.

907-656.02.1--Types of DMS. Each DMS shall be one of the following types:

- 1) DMS Type 1 shall meet the following requirements:
 - a) Shall be full color high resolution matrix sign
 - b) Display and pixel spacing shall be capable of displaying three lines of text with 21 characters per line such that each character shall each have a nominal height of 18 inches.
 - c) Pixel pitch shall be 20mm (0.78”) or less.
 - d) The signs housing shall be a walk-in enclosure.
- 2) DMS Type 2 shall meet the following requirements:
 - a) Shall be full color high resolution matrix sign
 - b) Display and pixel spacing shall be capable of displaying three lines of text with 21 characters per line such that each character shall each have a nominal height of 18 inches.
 - c) Pixel pitch shall be 20mm (0.78”) or less.
 - d) The signs housing shall be either a front access or rear access enclosure. A walk-in enclosure is not required for a Type 2 DMS but is allowed if preferred by the vendor.
- 3) DMS Type 3 shall meet the following requirements:

- a) Shall be full color high resolution matrix sign
- b) Display and pixel spacing shall be capable of displaying two lines of text with 9 characters per line such that each character shall each have a nominal height of 12 inches.
- c) Pixel pitch shall be 20mm (0.78") or less.
- d) The signs housing shall be either a front access or rear access enclosure. A walk-in enclosure is not required for a Type 3 DMS but is allowed if preferred by the vendor.

907-656.02.2--DMS Components. Each DMS shall include the following main components:

- 1) Sign Housing (walk-in or front access).
- 2) LED Modules.
- 3) LED Drivers.
- 4) Power Supplies
- 5) Roadside DMS Cabinet.
- 6) Sign Controller
- 7) Surge Protection Device (SPD)

907-656.02.3--References. These Special Provisions incorporate nonnative references to other standards as listed below. If a conflict between the standards referenced and this Special Provision, this Special Provision shall govern.

- 1) NEMA TS-4: NEMA TS4-2004, Hardware Standards for Dynamic Message Signs (DMS) with NTCIP Requirements. For this special provision only NEMA TS-4 requirements that apply to fixed signs locations shall be used.
- 2) NTCIP

907-656.02.4--Glossary of DMS Terms. The definitions of the terms used within this special provision are those terms defined in NEMA TS-4.

907-656.02.5--Environmental Requirements. Each DMS shall meet all of the performance and testing requirements as outline in Section 2 of NEMA TS-4 standard in addition to the following minimum requirements:

- 1) SPD shall be installed at each of the following locations:
 - a) AC power service entrance into the DMS Cabinet before the main cabinet breaker.
 - b) AC power out to the DMS housing after the branch breaker.
 - c) AC power entrance into the DMS Housing before the main housing breaker.
- 2) The SPD shall be designed to meet IEEE C62.41 C3 conditions.
- 3) A SPD intalled for AC power feed at the panel board shall be connected in parallel and meet the following minimum electrical requirements:
 - a) Withstand a peak 100,000-ampere surge current, 50kA L-N, 50kA L-G
 - b) 5000 Category (C3 High) impulses with <10% drift, short-circuit current rating (SCCR) of 200,000 rms symmetrical amperes (UL Listed) .
 - c) UL 1449 200kA SCCR, UL 1283 4th Edition, and Canadian safety standards.
 - d) Temperature range of -40°F to +140°F (-40°C to +60°C)

- 4) A SPD intalled for DMS control equipment protection shall be connected in series and meet the following minimum electrical requirements:
 - a) Withstand a peak 50,000-ampere surge current for an 8x20 microsecond wave form
 - b) Maximum continuous operating current of 15 amps at 120 VAC, 60 Hz
 - c) UL 1449 surge rating of 400V or less
 - d) Temperature range of -40°F to +158°F (-40°C to +70°C)

907-656.02.6--Mechanical Construction. Each DMS shall meet all of the performance and testing requirements as outlined in Section 3 of NEMA TS-4 standard in addition to the following requirements:

907-656.02.6.1--Vents and Filters. Each DMS vent and air filters shall meet the following requirements:

- 1) Air filters shall be installed between the intake vent and the fan.
- 2) Air filters must be replaceable, industrial grade, and pleated.
- 3) Air filters shall completely cover the vent opening area.
- 4) Air filters shall be manufactured per ASHRAE Standard 52.2P or Standard 52.1.
- 5) Air filters shall be of fire retardant and water resistant construction, able to withstand temperatures up to 300°F.
- 6) Filter replacement is to be accomplished without tools with easy access.

907-656.02.6.2--Ventilation System. Each DMS shall incorporate a ventilation system meeting the following requirements:

- 1) The electric fans shall be designed for continuous duty.
- 2) Sign housing venting fan(s) shall have a minimum combined capacity to keep the signs housing internal temperature to a maximum of thirty (30) degrees Fahrenheit above external ambient temperature under the following conditions:
 - a) All pixels are on at maximum illumination level.
 - b) Maximum solar loading for the state of Mississippi.
 - c) Worse case humidity for the State of Mississippi.
- 3) LED cooling fans shall be provided to vent the air between the display module and the sign face cover.
- 4) Sufficient LED cooling fans shall be provided to keep the air surrounding the LEDs to a maximum temperature not exceeding the rated temperature for the LEDs.
- 5) Provide sign housing ventilation calculations and LED cooling calculations to show sufficient air circulation is provided to meet the special provision requirements.
- 6) The fan(s) shall be mounted within the housing.
- 7) The fan(s) shall be down stream from the air filters.
- 8) The sign housing venting fan(s) shall blow the air into the sign housing.
- 9) The DMS manufacturer shall determine the number, placement, and size of the electric fans to meet the requirements listed in this subsection.
- 10) The fans shall be thermostatically controlled.
- 11) The thermostat shall have a minimum adjustable range between 77° to 122°F (25° to 50°C).

907-656.02.6.3--Sign Face Material. The sign face material shall be replaceable.

907-656.02.6.4--Sign Housing Construction. The DMS housing shall meet the following requirements:

- 1) Engineer shall approve sign housing dimensions.
- 2) The sign housing shall present a clean, unbroken, neat appearance.
- 3) The sign housing shall not have any visible text or logos on it.
- 4) The angular alignment of the sign housing shall be adjusted in the vertical direction down by three (3) degrees.
- 5) The sign housing shall be constructed of aluminum sheeting to be 5052-H32 and structural members to be 6061-T6, per ASTM Specifications.
- 6) Aluminum sheeting shall be no less than 1/8 inch thick with all seams continuously welded by MIG (metal inert gas) welding or other approved method of similar strength.
- 7) The front of the sign housing shall have a flat black matte finish.
- 8) All surfaces other than the front of the sign housing shall have a bare aluminum mill finish.
- 9) Weep holes shall be provided to allow moisture to escape.
- 10) The sign housing shall have an interior, non-skid walkway where the walkway shall extend the entire length of the sign housing.

907-656.02.6.5--Access Door. Walk in DMS housing shall include an access door meeting the following requirements:

- 1) Access to the interior of the sign case shall be via a gasketed door.
- 2) Gasketing shall be provided on all door openings and shall meet the following requirements:
 - a) Be dust-tight.
 - b) Meet NEMA 3R requirements
 - c) Permanently bonded to the door metal.
 - d) Shall not stick to the mating metal surface.
- 3) A gasket top channel shall be provided to support the top gasket on the door (in order to prevent gasket gravitational fatigue).
- 4) When the door is closed and latched, the door shall be locked. The lock shall meet the following requirements:
 - a) The lock and lock support shall be rigidly mounted on the door.
 - b) In the locked position, the bolt throw shall extend a nominal 0.25-inch into the latch cam area.
 - c) A lid or seal shall be provided to prevent dust or water entry through the lock opening.
 - d) The locks shall be Corbin # type and shall match the master number of the existing signs.
 - e) Two keys shall be supplied with each lock.
 - f) The keys shall be removable in the locked position only.
 - g) The locks shall have rectangular, spring loaded bolts.
- 5) For DMS installed on an overhead structure with catwalk, the access door shall be located

on side of DMS housing that is immediately adjacent to catwalk.

- 6) For DMS installed on a roadside structure, the access door shall be located on the side of the DMS housing that is immediately adjacent to roadside, but NOT directly above the travel lanes, and facing traveled way..

907-656.02.7--Controller to Sign Interface. Each DMS shall meet all of the performance and testing requirements as outline in Section 4 of NEMA TS-4 standard.

907-656.02.8--Display Properties. Each DMS shall meet all of the performance and testing requirements as outlined in Section 5 of NEMA TS-4 standard for outdoor sign using light emitting pixels in addition to the following requirements:

Pixels. Each pixel shall meet the following requirements:

- 1) DMS pixel shall be manufactured using Light Emitting Diodes (LED).
- 2) Each pixel shall contain the quantity of discrete LEDs needed to output white colored light at a minimum luminous intensity of 12,400 candelas per square meter when measured using a photometric meter through the DMS front face panel assembly.
- 3) Each pixel shall be capable of displaying amber colored light with a minimum luminous intensity of 7,440 candelas per square meter when measured using a photometric meter through the DMS front face panel assembly.
- 4) Each pixel shall consist of a minimum of one (1) independent string of discrete LEDs for each color. All pixels shall contain an equal quantity of LED strings.
- 5) Pixels shall be replaceable either individually or in groupings. Groupings with three or more pixels shall be permitted only if bench level repairs and replacements to individual pixels are possible.
- 6) The failure of an LED in one string within a pixel shall not affect the operation of any other string or pixel.

907-656.02.9--Optical Components. Each DMS shall meet all of the performance and testing requirements as outlined in Section 6 of NEMA TS-4 standard in addition to the following requirements:

LED Technology. LEDs used to form each pixel shall meet the following minimum requirements:

- 1) DMS pixels shall be constructed with discrete LEDs manufactured by Avago Technologies (formerly Agilent Technologies), Toshiba Corporation, or Nichia Corporation, OSRAM, EOI, or a manufacturer submitted and approved in writing from the Department
- 2) LED lenses shall be UV light resistant.
- 3) All LEDs shall be water resistant.
- 4) All LEDs shall have a nominal viewing cone of 30 degrees with a half-power angle of 15 degrees measured from the longitudinal axis of the LED. Viewing cone tolerances shall be as specified in the LED manufacturer's product specifications and shall not exceed +/- 5 degrees. Using optical enhancing lenses with 15 degree LED's will not conform to 30

degree half-power viewing cone specification.

- 5) Red LEDs shall utilize AlInGaP semiconductor technology and shall emit red light that has a peak wavelength of 615-635 nm.
- 6) Green LEDs shall utilize InGaN semiconductor technology and shall emit green light that has a peak wavelength of 520-535 nm.
- 7) Blue LEDs shall utilize InGaN semiconductor technology and shall emit blue light that has a peak wavelength of 464-470 nm.
- 8) The various LED color and intensity bins shall be distributed evenly throughout the sign and shall be consistent from pixel to pixel.
- 9) The LED manufacturer shall assure color uniformity and consistency on the LED display face within 30 degree cone of vision. Inconsistent color shifts of intensity will be cause for rejection.
- 10) The LEDs shall be rated by the LED manufacturer to have a minimum lifetime of 100,000 hours of continuous operation while maintaining a minimum of 70% of the original brightness.

907-656.02.10--DMS Controller Cabinet. Each DMS controller cabinet shall meet all of the performance and testing requirements as outlined in Section 7 of NEMA TS-4 standard.

907-656.02.11--Electronics and Electrical. Each DMS shall meet all of the performance and testing requirements as outlined in Section 8 of NEMA TS-4 standard in addition to the following requirements:

907-656.02.11.1--Brightness Controls. The DMS light sensing and dimming control shall meet the following minimum requirements:

- 1) Sixteen (16) user selectable brightness levels shall be provided.
- 2) The controller shall monitor ambient light levels through a photo sensor assembly that senses the ambient illumination level using three (3) photodiodes oriented as follows:
 - a) Cell 1 - Monitors the change from "day" to "night".
 - b) Cell 2 - Facing towards oncoming traffic; monitors prevailing ambient light levels in the upstream traffic.
 - c) Cell 3 - Facing passed traffic; monitors prevailing ambient light levels in the downstream traffic.

907-656.02.11.2--Communication Interfaces. The DMS controller shall support two Central Communication Ports (CCPs). One CCP shall be an Ethernet port, and the second CCP shall be a serial RS232 port.

907-656.02.11.3--NTCIP Protocol and Command Sets. As a minimum, the DMS hardware and software shall support the following NTCIP objects:

- 1) 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.

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

907-656.02.11.3.1--Ethernet Interface. Communication interfaces using Ethernet shall conform at a minimum with all mandatory objects of all mandatory Conformance Groups of the following standards:

- 1) 1101 -NTCIP Simple Transportation Management Framework (STMF)
- 2) 1203 -NTCIP Object Definition for Dynamic Message Signs
- 3) 2301 -NTCIP AP-STMF
- 4) 2202 -NTCIP TP-Internet
- 5) 2104 -NTCIP SP-Ethernet

907-656.02.11.3.2--RS-232 Interface. Communication interfaces using RS-232 shall conform at a minimum with all standards:

- 1) 1101 -NTCIP Simple Transportation Management Framework (STMF)
- 2) 1203 -NTCIP Object Definition for Dynamic Message Signs
- 3) 2301 -NTCIP AP-STMF
- 4) 2201 -NTCIP TP-Transportation Transport Profile
- 5) 2104 -NTCIP SP-PMPP/RS232

907-656.02.11.3.3--Subnet Level. For each communication interface, the Subnet Level shall meet the following minimum requirements:

- 1) NTCIP Components may support additional Subnet Profiles at the manufacturer's option.
- 2) At any one time, only one Subnet Profile shall be active on a given communication interface.
- 3) The NTCIP Component shall be configurable to allow the field technician to activate the desired Subnet Profile.

907-656.02.11.3.4--Transport Level. For each communication interface, the Transport Level shall meet the following minimum requirements:

- 1) Communication interfaces may support additional Transport Profiles at the manufacturer's option.
- 2) Response datagrams shall use the same Transport Profile used in the request.
- 3) Each communication interface shall support the receipt of diagrams conforming to any of the identified Transport Profiles at any time.

907-656.02.11.3.5--Application Level. For each communication interface, the Application Level shall meet the following minimum requirements:

- 1) All communication interfaces shall comply with NTCIP 1101 and shall meet the requirements for Conformance Level 1 (NOTE -See Amendment to standard).
- 2) Optionally, the NTCIP Component may support SNMP traps.

- 3) A communication interface may support additional Application Profiles at the manufacturer's option.
- 4) Responses shall use the same Application Profile used by the request.
- 5) Each communication interface shall support the receipt of Application data packets at any time allowed by the subject standards.

907-656.02.11.3.6--Information Level. All communication interfaces Information level protocol shall meet the following minimum requirements:

- 1) All communication interfaces shall provide Full, Standardized Object Range Support of all objects required by these procurement specifications unless otherwise indicated below.
- 2) The maximum Response Time for any object or group of objects shall be 200 milliseconds.
- 3) All communication interfaces shall implement all mandatory objects of all mandatory Conformance Groups as defined in NTCIP 1203 and their respective Amendments.
- 4) Table 1 indicates the modified object requirements for these mandatory objects.
- 5) Table 2 shows the required minimum support of messages that are to be stored in permanent memory.
- 6) The sign shall blank if a command to display a message contains an invalid Message CRC value for the desired message.
- 7) Table 3 specifies the support of the required MULTI tags and their ranges.
- 8) Shall also implement all mandatory objects of the following optional conformance groups of NTCIP 1201.
 - a) Time Management Conformal Group
 - b) Report Conformal Group. Table 4 indicates the modified object requirements.
- 9) 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.
- 10) Implement all objects of the DMS Configuration Conformance Group, as defined in NTCIP 1203.
- 11) 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.
- 12) Implement all objects of the Multi Error Configuration, as defined in NTCIP 1203.
- 13) Implement all objects of the Illumination/Brightness.
- 14) Sign Status, as defined in NTCIP 1203.
- 15) Status Error, as defined in NTCIP 1203.
- 16) Pixel Error Status, as defined in NTCIP 1203.
- 17) 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.
- 18) 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
DmsNumPermanentMsg	NTCIP 1203 Clause 2.6.1.1.1.1	Shall be at least 1*
DmsMaxChangeableMsg	NTCIP 1203 Clause 2.6.1.1.1.3	Shall be at least 60. Each message shall support at least 3 pages per message.
DmsFreeChangeableMemory	NTCIP 1203 Clause 2.6.1.1.1.4	Shall be at least 20 when no messages are stored.
DmsMessageMultiString	NTCIP 1203 Clause 2.6.1.1.1.8.3	The DMS shall support any valid MULTI string containing any subset of those MULTI tags listed in Table 3.
DmsControlMode	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 dmsMessageType 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
Fl (and /fl)	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
Mv	moving text
Nl	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 12*
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" font. The second font shall be a double- stroke 18" font. The third font shall be a 12" font. The fourth font shall be empty.

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

- a) "A" thru "Z" - All upper case letters.
- b) "a" thru "z" - All lower case letters.
- c) "0" thru "9" - All decimal digits.
- d) Space (i.e., ASCII code 0x20).
- e) Punctuation marks shown in brackets [. , ! ? - ' ' " " / ()]
- f) 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 DMS shall support the following background colors: <ul style="list-style-type: none"> ▪ black
defaultForegroundColor	NTCIP 1203 Clause 2.5.1.1.1.2	The DMS shall support the following foreground colors: <ul style="list-style-type: none"> ▪ amber
defaultJustificationLine	NTCIP 1203 Clause 2.5.1.1.1.6	The DMS 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 DMS 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 DMS 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 DMS 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 DMS 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 DMS 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 DMS shall support the full range of these objects with step sizes no larger than 0.5 seconds
dmsSWReset	NTCIP 1203 Clause 2.7.1.1.1.2	
dmsMessageTimeRemaining	NTCIP 1203 Clause 2.7.1.1.1.4	
dmsShortPowerRecoveryMessage	NTCIP 1203 Clause 2.7.1.1.1.8	
dmsLongPowerRecoveryMessage	NTCIP 1203 Clause 2.7.1.1.1.9	
dmsShortPowerLossTime	NTCIP 1203 Clause 2.7.1.1.1.10	
dmsResetMessage	NTCIP 1203 Clause 2.7.1.1.1.11	
DmsCommunicationsLossMessage	NTCIP 1203 Clause 2.7.1.1.1.12	
dmsTimeCommLoss	NTCIP 1203 Clause 2.7.1.1.1.13	
dmsEndDurationMessage	NTCIP 1203 Clause 2.7.1.1.1.15	
dmsMemoryMgmt	NTCIP 1203 Clause 2.7.1.1.1.16	The DMS shall support the following Memory management Modes:

			<ul style="list-style-type: none"> ▪ normal ▪ clearChangeableMessage ▪ clearVolatileMessages
dmsMultiOtherErrorDescription	NTCIP 1203 Clause 2.7.1.1.1.20		If the vendor implements any vendor-specific MULTI tags, the DMS shall be provided with documentation that includes meaningful error messages within this object whenever one of these tags generates an error.
dmsIllumLightOutputStatus	NTCIP 1203 Clause 2.8.1.1.1.9		
watchdogFailureCount	NTCIP 1203 Clause 2.11.1.1.1.5		
dmsStatDoorOpen	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		

907-656.02.11.4--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:

- 1) The relevant version of each official standard Mill Module referenced by the device functionality.
- 2) If the device does not support the full range of any given object within a Standard Mill Module, a manufacturer specific version of the official Standard Mill Module with the supported range indicated in ASN.1 format in the SYNTAX and/or DESCRIPTION fields

of the associated OBJECT TYPE macro. The filename of this file shall be identical to the standard MIB Module, except that it will have the extension ".man".

- 3) 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.
- 4) A MIB containing any other objects supported by the device.
- 5) 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.
- 6) 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.

907-656.02.12--Performance Monitoring. Each DMS shall meet all of the performance and testing requirements as outlined in Section 9 of NEMA TS-4 standard.

907-656.02.13--Power Requirements. Each DMS shall meet all of the performance and testing requirements as outlined in Section 10 of NEMA TS-4 standard.

907-656.03--Installation Requirements. All equipment shall be installed according to the manufacturer's recommendations, the Plans and as follows:

- 1) The Contractor shall provide the MDOT with a written inventory of items received and the condition in which they were received. Inventory shall be inclusive of make, model, and serial numbers, MAC address, and installation GPS coordinates. All equipment shall be installed according to the manufacturer's recommendations or as directed by the MDOT.
- 2) Any new, additional or updated drivers required for the existing ATMS software to communicate and control new DMS installed by the Contractor shall be the responsibility of the Contractor.

907-656.03.1--Certified Installation. Installation of the Dynamic Message Signs shall be performed by the supplier or a Contractor trained and certified by the supplier. If a certified Contractor performs the installation and configuration, a supplier factory representative shall supervise and assist a Contractor during installation and configuration.

907-656.03.2--Testing. Each DMS shall undergo testing to verify conformance to special provision as follows. The Contractor shall conduct a Project Testing Program as required below. All costs associated with the Project Testing Program shall be included in overall contract prices; no separate payment will be made for any testing.

907-656.03.2.1--General Requirements.

- 1) The Contractor is responsible for planning, coordinating, conducting and documenting all aspects of the Project Testing Program. The Project Engineer, ITS Engineer, and/or their designee(s) are only responsible for attending and observing each test, and reviewing and approving the Contractor's test results documentation. The Project Engineer, ITS Engineer,

and/or their designee(s) reserve the right to attend and observe all tests. The Contractor is required to perform the DMS Sub-System test and the Conditional Acceptance test with the MDOT ITS Engineer or his designee present.

- 2) Each test shall fully demonstrate that the equipment being tested is clearly and definitely in full compliance with all project requirements.
- 3) Test procedures shall be submitted and approved for each test as part of the project submittals. Test procedures shall include every action necessary to fully demonstrate that the equipment being tested is clearly and definitively in full compliance with all project requirements. Test procedures shall cross-reference to these specifications or the project plans. Test procedures shall contain documentation regarding the equipment configurations and programming.
- 4) No testing shall be scheduled until approval of all project submittals and approval of the test procedures for the given test.
- 5) The Contractor shall provide all ancillary equipment and materials as required in the approved test procedures.
- 6) The Contractor shall request in writing the Project Engineer's approval for each test occurrence a minimum of 14 days prior to the requested test date. Test requests shall include the test to be performed and the equipment to be tested. The Project Engineer reserves the right to reschedule test request if needed.
- 7) All tests shall be documented in writing by the Contractor in accordance with the test procedure and submitted to the Project Engineer within seven (7) days of the test. Any given test session is considered incomplete until the Project Engineer has approved the documentation for that test session.
- 8) All tests deemed by the Project Engineer to be unsatisfactorily completed shall be repeated by the Contractor. In the written request for each test occurrence that is a repeat of a previous test, the Contractor shall summarize the diagnosis and correction of each aspect of the previous test. The Contractor shall summarize the diagnosis and correction of each aspect of the previous test that was deemed unsatisfactory. The test procedures for a repeated test occurrence shall meet all the requirements of the original test procedures, including review and approval by the Project Engineer and ITS Manager.
- 9) The satisfactory completion of any test shall not relieve the Contractor of responsibility to provide a completely acceptable and operating system that meets all requirements of this project.

907-656.03.2.2--DMS Factory Acceptance Test (FAT). The Contractor shall perform FAT on the DMS prior to shipping from the factory. The goal of the DMS FAT is to verify that the DMS meets the requirements of this special provision.

Factory Acceptance Tests shall be conducted at the Manufacturer or Contractor facility or at a facility acceptable to all parties. All equipment to be utilized for this project shall be subject to tests that demonstrate the suitability of the design and compliance with the contract requirements, unless an exception for an equipment item is granted by the Project Engineer. The tests shall be performed on production units identified to be delivered under this contract.

The FAT procedure shall demonstrate all requirements defined in these specifications are met, including, but not limited to: functional/system performance requirements, electrical

requirements, data transmission/communication requirements, safety/password requirements, environmental requirements, and interface requirements with other components of the project system.

The Project Engineer reserves the right to waive FATs which are deemed to be unnecessary and reserves the right to witness all FATs that are determined to be critical to the project. At a minimum, the Project Engineer and/or the Project Engineer's representative, will be in attendance at the FAT for the first three (3) units tested. The FAT for the first three (3) units shall be conducted during the same period. The Project Engineer shall be notified a minimum of forty- five (45) calendar days in advance of such tests. Salary and travel expenses of the Project Engineer and the Project Engineer representatives will be the responsibility of MDOT. In case of equipment or other failures that make a retest necessary, travel expenses of the Project Engineer and the Project Engineer's representatives shall be the responsibility of the Contractor. This shall include all costs including, but not limited to, airfare, automobile rental, lodging, and per diem. These costs, excluding airfare shall not exceed \$500.00, per representative, per day. These costs shall be deducted from payment due or charged to the withholding account of the Contractor when the project is terminated.

The vendor must complete the FAT on all remaining units on their own and submit documentation to the Project Engineer that the FATs were completed. The Project Engineer reserves the right to randomly attend those FAT tests.

No equipment for which a FAT is required shall be shipped to the project site without successful completion of factory acceptance testing as approved by the Project Engineer and the Engineer's approval to ship.

907-656.03.2.3--DMS Pre-Installation Test (PIT). The Contractor shall perform PIT on the DMS as they arrive from the factory. The goal of the DMS PIT is to verify that the DMS were not damaged during shipping. The PIT shall test or inspect the following DMS components:

- 1) External or internal visible damage
- 2) DMS display damage
- 3) Verify all pixels are operational
- 4) Verify the ventilation system works
- 5) Verify all equipment is secured
- 6) Verify sign configurations

907-656.03.2.4--DMS Stand Alone Test (SAT). The Contractor shall perform SAT on the DMS as they arrive from the factory. The goal of the SAT is to verify that the DMS has been properly installed and commissioned according to the manufacturer requirements. The SAT shall include at minimum the following tests and inspections:

- 1) Verify the signs have been attached properly to the structure.
- 2) Verify the sign case and roadside cabinet have been grounded.
- 3) Verify the sign has been properly connected to the power.
- 4) Verify the sign case has no structural damage or deformities.

- 5) Verify all pixels are operational
- 6) Verify local sign control through the serial port
- 7) Verify local sign control through the Ethernet port.

907-656.03.2.5--DMS Sub-System Test (SST). The Contractor shall perform SST on the DMS to verify that the sign is operational from central. The goal of the SST is to verify that all remote DMS functions and alarms are operational. The Contractor shall coordinate the SST with the MDOT ITS Engineer. The Contractor shall provide a SST plan to the MDOT ITS Engineer and be approved a minimum of two week in advance of tests being performed.

907-656.03.2.6--Conditional System Acceptance Test (CSAT). The Contractor shall perform a complete conditional system acceptance test on all equipment and materials in the project. The Contractor shall not request the conditional system acceptance test for a phase until the SATs have been satisfactorily completed, all as-built documentation has been submitted and approved, and all other project work has been completed to the satisfaction of the Engineer. Prior to a Conditional System Acceptance Test, the Contractor shall provide advance notice of and written test results documentation that the Contractor has performed a dry-run of the conditional system acceptance test, and the Engineer reserves the right to require attendance of a dry-run test session.

The Contractor shall test all project systems simultaneously from the TMC in a manner equivalent to the normal day-to-day operations of the system. The Conditional System Acceptance Test shall demonstrate that all equipment and materials in the network are in full compliance with all project requirements and fully functional as installed and in final configuration, communicating with and being controlled through the control center at the TMC. Upon completion and full approval of the Conditional System Acceptance Test for all equipment, Conditional System Acceptance will be given and the Burn-in Period will begin. The Contractor shall coordinate the CSAT with the MDOT ITS Engineer. The Contractor shall provide a CSAT plan to the MDOT ITS Engineer and be approved a minimum of thirty (30) calendar days in advance of tests being performed. The CSAT plan shall be inclusive of steps and procedures to be performed and scheduled times to perform test procedures.

907-656.03.2.7--Burn-In Period. Following the Engineer's written notice of successful completion of the Conditional System Acceptance Test, the entire newly installed system must operate successfully for a three (3) month burn-in period. During this burn-in period the Contractor shall be responsible for the full maintenance of the newly installed equipment. However, no separate payment will be made for the burn-in period activities and shall be included in the cost of other items. Successful completion of the burn-in period will occur at the end of three complete months of operation without a major system failure attributable to hardware, software or communications components. Each system failure during the burn-in period will require an additional month of successful operation prior to being eligible for Final Acceptance. (i.e., if there are two system failures during the initial three month period, the burn-in period would be increased to five (5) months.)

Burn-In General Requirements

- Determination of a system failure shall be at the sole discretion of the Engineer. System failure is defined as a condition under which the system is unable to function as a whole or in significant part to provide the services as designed. While a single component failure will not constitute a system failure, chronic failure of that component or component type may be sufficient to be considered a system failure. Chronic failure of a component or component type is defined as 3 or more failures for the same component during the burn-in period.
- Components are defined as contract items or major material elements in a contract item. For electrical and electronic contract items, components are defined as the complete assembly of materials that makes up the contract item.
- Specifically exempted as system failures are failures caused by accident, acts of God, or other external forces that are beyond the control of the Contractor. However, failure of the contractor to respond to the repair request for that failure within 24 hours may be considered a system failure.
- The Department will advise the Contractor in writing when it considers that a system failure has occurred or chronic failure exists.
- If multiple system and/or chronic failures continue to occur throughout the burn-in period due to a single component type, the Contractor may be required to replace all units of that component type with a different model or manufacturer.
- The Contractor shall document all failures and subsequent diagnosis and repair. The repair documentation shall include as a minimum:
 - Description of the problem
 - Troubleshooting and diagnosis steps
 - Repairs made
 - List of all equipment and materials changed including serial numbers.
 - Update of the equipment inventory where needed.
- The Contractor shall provide the repair documentation to the Engineer within two (2) days of completing the repair; failure to provide acceptable documentation as required shall be reason to not approve the repair as complete. The Engineer will provide acceptance or rejection of the repair and documentation within seven (7) days.
- The Engineer reserves the right to require, at no additional expense to the State, the presence of a qualified technical representative of the equipment and/or software manufacturers as related to the diagnosis and/or repair of any system failure.
- During the burn-in period the Contractor shall perform incidental work such as touching up, cleaning of exposed surfaces, leveling and repair of sites, sodding/grassing and other maintenance work as may be deemed necessary by the Engineer to insure the effectiveness and neat appearance of the work sites.
- During the burn-in period the Engineer shall maintain a “burn-in period punch list” that contains required Contractor actions but that the Engineer does not define as a system failure. Each burn-in period punch list action item shall be completed by the Contractor to the Engineer’s satisfaction within seven (7) days of Contractor notification of the action item.
- During the burn-in period the Contractor is required to meet the following response times once notified there is a problem. A response is defined as being on-site to begin diagnosing the problem.

- Monday thru Friday: The Contractor shall respond no later than 9:00 a.m. the following morning after being notified.
- Weekends: If the Contractor is notified on Friday afternoon or during the weekend, the Contractor shall respond by 9:00 a.m. on Monday morning.
- During the burn-in period the Contractor shall provide all labor, materials, equipment and replacement parts to completely maintain, troubleshoot and repair all items installed under this contract. No separate payment will be made for any labor, materials, equipment or replacement parts needed during the burn-in period.
- The overall burn-in period will be considered complete upon the successful completion of the burn-in time periods, the Engineer's acceptance of all repairs and repair documentation, completion of all burn-in period punch list actions and a final inspection as described below.

907-656.03.2.8--DMS Final Inspection. Upon successful completion of the burn-in period, the project shall be eligible for the DMS final inspection. The DMS final inspection will be conducted provided the burn-in period has demonstrated the entire system is operating successfully. The DMS final inspection shall include but is not limited to;

- monitoring of all system functions at the TMC to demonstrate the overall system is operational
- a field visit to each site to ensure all field components are in their correct final configuration
- verification that all burn-in punch list items have been completed
- verification that all final cleanup requirements have been completed
- approval of final as-built documentation

Prior to conducting the DMS final inspection, the burn-in period shall demonstrate that all requirements defined in this Special Provision have been met.

The Contractor shall request in writing the Engineer's approval to start the DMS final inspection a minimum of 14 days prior to the requested start date. The Engineer reserves the right to reschedule the start date if needed. The start date for the DMS final inspection cannot be prior to the successful completion of the overall burn-in period.

An unsuccessful or incomplete DMS final inspection shall require a new DMS final inspection after the Contractor has made the necessary corrections. Up to 14 days shall be allowed for the Engineer to conduct a DMS final inspection.

The Engineer reserves the right to require, at no additional expense to the State, the attendance of a qualified technical representative of the equipment and/or software manufacturers to attend a portion of a DMS final inspection. The presence of the MDOT ITS Engineer or his designee is required during the final inspection.

The Contractor shall be responsible for the full maintenance of all project equipment and materials during the entire time period from the successful completion of the burn-in period until Final System Acceptance is granted.

907-656.03.2.9--Final System Acceptance. Upon successful completion of the DMS final inspection, the Engineer will conduct a project final inspection in accordance with Subsection 105.16.2 of the Standard Specifications.

907-656.03.3--Documentation. DMS documentation shall meet all of the performance and testing requirements as outline in Section 12 of NEMA TS-4 standard.

907-656.03.4--Warranty. The DMS shall be warranted to be free of manufacturer defects in materials and workmanship for a period of one year from the date of Final Acceptance. Equipment covered by the manufacturer's warranties shall have the registration of that component placed in MDOT's name prior to Final Inspection. The Contractor is responsible for ensuring that the vendors and/or manufacturers supplying the components and providing the equipment warranties recognize MDOT as the original purchaser and owner/end user of the components from new. During the warranty period, the supplier shall repair or replace with new or refurbished material, at no additional cost to the State, any product containing a warranty defect, provided the product is returned postage-paid by the Department to the supplier's factory or authorized warranty site. Products repaired or replaced under warranty by the supplier shall be returned prepaid by the supplier. During the warranty period, technical support shall be available from the supplier via telephone within four hours of the time a call is made by the Department, and this support shall be available from factory certified personnel. During the warranty period, updates and corrections to control unit software shall be made available to the Department by the supplier at no additional cost.

907-656.03.5--MDOT Employee Training. Minimum Training Requirements are as follows:

- 1) The Contractor shall submit to the Project Engineer for approval a detailed Training Plan including course agendas, detailed description of functions to be demonstrated and a schedule. The Contractor must also submit the Trainer's qualifications to the Project Engineer for approval prior to scheduling any training. The training must include both classroom style training and hands-on training in the field of the maintenance and troubleshooting procedures required for each component. The training should also consist of a hands-on demonstration of all software configuration and functionality where applicable.
- 2) The supplier of the DMS shall, at a minimum, provide a sixteen-hour operations and maintenance training class with suitable documentation for up to eight (8) persons selected by the Department. This training shall include One (1) day of site device operation, maintenance, and configuration training for up to ten (10) individuals and One (1) day of on site system training at the TMC for up to ten (10) individuals that is separate from the above training and specifically for software control of the integrated devices. The operations and maintenance class shall be scheduled at a mutually acceptable time and location.
- 3) The training shall be approved two (2) week ahead of the scheduled date.

907-656.03.6--Maintenance and Technical Support. The supplier shall maintain an adequate

inventory of parts to support maintenance and repair of the DMS. Spare parts shall be available for delivery within 30 days of placement of an acceptable order at the supplier's then current pricing and terms of sale of said spare parts.

907-656.04--Method of Measurement. Dynamic Message Sign will be measured per each DMS installation. Such installation shall be inclusive of furnishing, installing, system integration and testing of the complete dynamic message sign including the sign case, light sources, display apparatus, wiring, controller, roadside DMS cabinet, communications interface, wiring between the sign case and DMS cabinet, structure mounted conduit, fittings, and junction boxes, sign case support connections to the sign support structure, satisfactory completion of testing and training requirements and all work, equipment and appurtenances as required to effect the full operation including remote and local control of the sign complete in place and ready for use. It shall also include all system documentation including: shop drawings, operations and maintenance manuals, wiring diagrams, block diagrams, and other material necessary to document the operation of the DMS.

907-656.05--Basis of Payment. Dynamic Message Sign, measured as prescribed above, will be paid for at the contract unit price per each, which price shall be full compensation for all labor, tools, materials, equipment, training, manuals, materials and incidentals necessary to complete the work for a complete and functional DMS.

This work does not include the sign support structure.

Progress payments for Dynamic message signs shall be paid as follows:

- 1) 80% of the contract unit price upon completion of the installation and any standalone acceptance testing, and
- 2) 20% of the contract unit price upon final system acceptance.

Payment will be made under:

907-656-A: Dynamic Message Sign * - per each

* Type may be specified

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-699-5

CODE: (SP)

DATE: 12/17/2013

SUBJECT: Construction Stakes

Section 699, Construction Stakes, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby deleted and replaced as follows.

SECTION 907-699 - CONSTRUCTION STAKES

907-699.01--Description. This work consists of performing all calculations and other work necessary to establish and/or verify all horizontal and vertical control data; and furnishing, placing and maintaining roadway construction stakes or bridge construction stakes, or both, necessary for the proper prosecution of all features and items of the work under contract. This shall include, but not be limited to, grades and drainage structure locations, lengths, elevations and skews. When the contract includes a pay item for roadway construction stakes as provided herein, any references in other sections of the Standard Specifications to establishment of control points or construction staking "by the Department" shall be construed to mean "by the Contractor".

This work may be performed utilizing Automated Machine Guidance technologies and systems in accordance with the standard specifications and contract documents. Automated Machine Guidance (AMG) is defined as the utilization of positioning technologies such as Global Positioning Systems (GPS), Robotic Total Stations, lasers, and sonic systems to automatically guide and adjust construction equipment according to the intended design requirements. Global Positioning Systems (GPS) shall NOT be used for determining any points above the subgrade line. The Contractor may use any type of AMG system(s) that result in compliance with the contract documents and applicable Standard Specifications.

Automated Machine Guidance (AMG) is not a mandatory requirement. Automated Machine Guidance (AMG), conventional staking, or a combination of both may be used at the Contractor's option for staking on this project.

907-699.02--Materials. The Contractor shall furnish all personnel, materials, equipment and devices necessary for determining, establishing, setting, checking and maintaining points, lines, grades and layout of the work. All surveying equipment shall be properly adjusted and suited for performing the work required. Traffic control necessary for the proper execution of the work shall be furnished by the Contractor without separate measurement for payment. Stakes shall be of sufficient length, thickness and quality to serve the purpose for which they are being used.

All equipment required to accomplish automated machine guidance shall be provided by the Contractor. The Contractor may use any type of AMG equipment that achieves compliance with the contract documents and applicable Standard Specifications.

The Contractor shall provide the Department with an acceptable portable grade-verification device (Rover) to be used by the Department during the duration of the contract. On large projects with high production rates, the Contractor may have to provide more than one device. At the end of the contract, the device will be returned to the Contractor. This device shall have the same capabilities as the unit used by the Contractor.

907-699.03--Construction Requirements.

907-699.03.1--General. The Department will establish, one time only, secondary control points with elevations at distances not to exceed 1500 feet or that minimum distance necessary to maintain inter-visibility. For bridge work, the Engineer's field control will consist of a stationed baseline reference point near each end of the bridge(s) and one accessible bench mark near each bridge site. For the purpose of determining responsibility for construction stakes, lines and grades, a box bridge will not be considered as a bridge. The Contractor shall verify the accuracy of the control points before proceeding with the layout for construction.

When errors are discovered and control points do not agree with the plans, the Contractor shall promptly notify the Engineer in writing, and explain the problem in detail. The Engineer will advise the Contractor within five (5) working days of any corrective actions which may be deemed necessary.

The Contractor will be responsible for verifying and modifying, as necessary to best fit existing field conditions, lengths, locations, elevations and skew angles of all drainage structures shown on the construction plans. All junction box and inlet locations and heights shall also be verified and modified as necessary to fit existing field conditions. Modifications to the plans shall not be made without the consent of the Project Engineer. The Contractor will not be responsible for determining the size of drainage structures, but should immediately report any suspected error to the Engineer. Heights of fill over drainage structures shall be checked to verify class of pipe, bedding and the appropriate standard and/or modified standard drawing(s) required in the construction with any differences from the plans being reported to the Engineer.

The Contractor shall perform work necessary to verify alignment and plan grades on all roadway intersections and tie-ins. Any discrepancies in grades, alignment, location and or dimension detected by the Contractor shall immediately be brought to the attention of the Project Engineer.

The Contractor shall employ sufficient qualified personnel experienced in highway surveying and layout to complete the work accurately. The Contractor shall also determine and provide all additional grade controls and staking operations necessary to secure a correct layout and construction of the work. All minor variations in layout and grades required to meet field conditions shall be resolved with the Engineer and shall not be considered justification for adjusting contract price or time.

Examples of minor variations in layout and grades are:

- (a) Adjustment of drainage or other structure length, alignment, and flow line elevation.

- (b) The adjustment of grades and alignment at roadway intersections, cross-overs, railroad crossings, interchanges, existing bridges and roadways.
- (c) Adjustment of curve data.

The Contractor will be responsible for calculating and laying out all additional lines, grades, elevations and dimensions necessary to construct the work required in the plans. All grades and other layout data computed by the Contractor shall be recorded and a copy of this data shall be furnished, with sufficient time for checking, to the Engineer before field work is started. The originals of all data shall be furnished to the Engineer on or before final inspection for the Department's permanent file. The Contractor shall also furnish personnel to assist the Engineer in taking tolerance verification checks or other notes to determine whether specified tolerances are met. Any inspection or checking of the Contractor's layout by the Engineer and the approval of all or any part of it will not relieve the Contractor of the responsibility to secure proper dimensions, grades, and elevations of the several parts of the work.

Prior to beginning construction on any structure which is referenced to an existing structure or topographical feature, the Contractor shall check the pertinent location and grades of the existing structures or topographical features to determine whether the location and grade shown on the plans are correct.

The Contractor shall stake centerline control at each station, BOP, EOP, PC, PT, SC, CS, TS, ST, and equations just before field cross sectioning by the Department for both original and final cross sections.

The Contractor shall furnish "as built" finish centerline elevations to the Project Engineer prior to final inspection of the project.

The Contractor shall set stakes and/or flags on the right-of-way line at each station and right-of-way break or as directed by the Engineer before clearing operations are started on any section of roadway.

Regardless of the method used, the Contractor shall meet the surface tolerances addressed in Section 321.

The Contractor shall exercise care in the preservation of stakes and bench marks and shall reset them when they are damaged, lost, displaced or removed. The Contractor shall use competent personnel and suitable equipment for the layout work required and shall provide that it be performed under the supervision of, or directed by, a Registered Professional Engineer or Registered Land Surveyor who is duly registered and entitled to practice as a Professional Engineer or Professional Land Surveyor in the State of Mississippi. The duties performed by said Registrant shall conform to the definitions under the "practice of engineering" and practice of "land surveying" in Mississippi Law and the latest edition of the MDOT Survey Manual. The MDOT Survey Manual can be obtained online at the following address.

<http://sp.mdot.ms.gov/RoadwayDesign/Pages/MDOT-Survey-Manual.aspx>

The Contractor shall not engage the services of any person in the employ of the Department for the performance of any of the work covered by this Section or any person who has been employed by the Department within the past six months except those who have legitimately retired from service with the Department during this period.

All cross sections, measurements, and tickets required for determining pay quantities will be the responsibility of the Department.

The Department reserves the right to check for accuracy any or all of the Contractor's layout work and shall be assisted by the Contractor's personnel in such checking. When errors or discrepancies are found, the Contractor will take measures necessary to correct, at no expense to the State, any construction that has been performed using the improper layout. Any inspection, checking and approval thereof by the Engineer of work for which the Contractor is responsible will not relieve the Contractor of responsibility to secure correct dimensions, grades, elevations, alignments and locations of the work for satisfactory completion of the project and as a condition for final acceptance by the Department.

907-699.03.2--Conventional Staking. In addition to the requirements set forth in Subsection 907-699.03.1, the following shall be required when using the conventional staking method.

On grading projects, the Contractor shall set slope stakes at each station and at the beginning and end of spirals and curves. Closer intervals will be required for sharp changes in grades or alignment, widening and certain other geometric details.

The Contractor shall set subgrade blue tops on centerline, break points and at the left and right subgrade shoulder lines at intervals of not more than 100 feet on tangents and intervals of not more than 50 feet in curves. Closer intervals will be required for sharp changes in grades or alignment, widening, or super elevation.

The Contractor shall furnish personnel to assist the Engineer in taking stringline and other notes to determine whether specified tolerances are met.

On paving contracts, the Contractor shall set subgrade, base and paving blue tops. The base and pavement grade stakes shall be set on intervals in accordance with the applicable requirements of Sections 321, 403 and 501.

907-699.03.3--Automated Machine Guidance. In addition to the requirements set forth in Subsection 907-699.03.1, the following shall be required when using the automated machine grading method.

907-699.03.3.1--Automated Machine Guidance Work Plan. The Contractor shall submit a comprehensive written Automated Machine Guidance Work Plan to the Engineer for review at least 30 days prior to use. The Project Engineer will have to concur with the Plan prior to the Contractor performing any AMG work. The submittal of an AMG Work Plan shall be an indication of the Contractor's intention to utilize AMG instead of conventional methods on the

project areas and elements stated in the Work Plan. The Engineer shall review the Automated Machine Guidance Work Plan to ensure that the requirements of this special provision are addressed. The Contractor shall assume total responsibility for the performance of the system utilized in the Work Plan. Any update or alteration of the Automated Machine Guidance Work Plan in the course of the work shall be approved and submitted to MDOT for determination of conformance with requirements of this special provision.

The Automated Machine Guidance Work Plan shall describe how the automated machine guidance technology will be integrated into other technologies employed on the project. This shall include, but not limited to, the following:

1. A description of the manufacturer, model, and software version of the AMG equipment.
2. Information on the Contractor's experience in the use of Automated Machine Guidance system (or Related Technologies) to be used on the project, including formal training and field experience of project staff.
3. A single onsite staff person as the primary contact, and up to one alternate contact person for Automated Machine Guidance technology issues.
4. A definition of the project boundaries and scope of work to be accomplished with the AMG system.
5. A description of how the project proposed secondary control(s) is to be established. It shall also include a list and map detailing control points enveloping the site.
6. A description of site calibration procedures including, but not limited to, equipment calibration and the frequency of calibration as well as how the equipment calibration and information will be documented to MDOT and the Project Engineer. The documentation shall contain a complete record of when and where the tests were performed and the status of each equipment item tested within or out of the ranges of required tolerances.
7. A description of the Contractor's quality control procedures for checking mechanical calibration and maintenance of equipment. It shall also include the frequency and type of checks to be performed.
8. A description of the method and frequency of field verification checks and the submission schedule of results to the Project Engineer.
9. A description of the Contractor's contingency plan in the event of failure/outage of the AMG system.
10. A schedule of Digital Terrain Models (DTM) intended for use on the project. This shall be submitted to the Engineer for review, feedback, and communication.

907-699.03.3.2--State's Responsibilities. The District Surveyor will set the primary horizontal and vertical control points in the field for the project as per latest edition of the MDOT Survey Manual. The control points shall be in Mississippi State Plane coordinate system.

MDOT will provide an electronic alignment file and primary control file for the project. This file will be based on the appropriate Mississippi State Plane Coordinate Zone either West or East. These files will be created with the computer software applications MicroStation (CADD software) and GEOPAK (civil engineering software). The data files will be provided in the native formats. The Contractor shall perform necessary conversion of the files for their selected grade control equipment, field verify the data for accuracy, and immediately report any errors to

MDOT.

MDOT will provide design data, if available, in an electronic format to the Contractor. These files will be created with the computer software applications MicroStation (CADD software) and GEOPAK (civil engineering software). The data files will be provided in the native formats as specified in the Data Format section of this specification. No guarantee is made to the data accuracy or completeness, or that the data systems used by MDOT will be directly compatible with the systems used by the Contractor. Information shown on the paper plans marked with the seal (official plans as advertised) shall govern.

The Engineer will perform spot checks as necessary of the Contractor's machine control grading results, surveying calculations, records, field procedures, and actual staking. If the Engineer determines that the work is not being performed in accordance with the Specifications, the Engineer shall order the Contractor to re-construct the work to the requirements of the contract documents at no additional cost to the Department.

907-699.03.3.3--Contractor's Responsibilities. The Contractor shall provide formal training, as requested, on the use of the Automated Machine Guidance Equipment, including Rover, and the Contractor's systems to MDOT project personnel prior to the start of construction activities utilizing AMG. This training is for providing MDOT project personnel with an understanding of the equipment, software, and electronic data being used by the Contractor.

The Contractor shall use the alignment and control data provided by MDOT.

The Contractor shall bear all costs, including but not limited to the cost of actual reconstruction work that may be incurred due to errors in application of Automated Machine Guidance techniques or manipulation of MDOT design data in Digital Terrain Models (DTM). The Contractor shall also bear all costs associated with any graphical grading outside the model / typical section, such as tying to existing grades at the beginning or end of a project.

The Contractor shall be responsible for converting the information on the plans and/or electronic data file provided by MDOT into a format compatible with the Contractor's AMG system.

The Contractor shall establish secondary control points at locations along the length of the project and outside the project limits and/or where work is performed beyond the project limits as required by the Automated Machine Guidance system utilized. The Contractor shall establish this secondary control using survey procedures as outlined in the latest edition of the MDOT Survey Manual. A copy of all new control point information shall be provided to the Engineer prior to construction activities. The Contractor shall be responsible for all errors resulting from their efforts and shall correct deficiencies to the satisfaction of the Engineer and at no additional cost to the State.

The Contractor shall preserve all reference points and monuments that are established by the District Surveyor outside the construction limits. If the Contractor fails to preserve these items, they shall be re-established by the Contractor to their original quality at no additional cost to the State.

The Contractor shall set grade stakes at the top of the finished sub-grade and base course at all hinge points on the typical sections at 1000-foot maximum intervals on mainline, critical points such as, but not limited to, PC's, PT's, beginning and ending super elevation transition sections, middle of the curve, and at least two locations on each of the side roads and ramps, and at the beginning and end of each cross slope transition where Automated Machine Guidance is used. These grade stakes shall be established using conventional survey methods for use by the Engineer to check the accuracy of the construction.

On grading projects, the Contractor shall set slope stakes and centerline stationing every 500 feet and at the beginning and end of spirals and curves. Closer intervals will be required for sharp changes in grades or alignment, widening and certain other geometric details.

The staking requirements for pavement grade stakes addressed in Sections 403 and 501 will not apply. The Contractor shall furnish an acceptable portable grade-verification device(s) (Rover) to verify grade tolerances.

The Contractor will be required to set 20 grade points (hubs) per mile at locations determined by the Engineer for field verification. If tolerances are not met, additional grade points may be required by the Engineer.

The Contractor shall furnish personnel to assist the Engineer in taking tolerance verification checks as necessary to determine whether specified tolerances are met.

The Contractor shall meet the same accuracy requirements as detailed in the Mississippi Standard Specifications for Road and Bridge Construction.

The Contractor shall be responsible for implementing the AMG system using the Mississippi State Plane Coordinate System. No localization methods will be accepted.

907-699.03.3.4--Data Format. It is the Contractor's responsibility to produce the Digital Terrain Model(s) and/or 3D line work needed for Automated Machine Guidance. MDOT does not produce this data in its design process. MDOT does provide CADD files created in the design process to the Contractor. The CADD files provided by MDOT are provided in the native software application formats in which they are created with no conversions, and their use in developing 3D data for machine guidance is at the discretion of the Contractor. The CADD files that may be available are listed below. Cross-Sections are one of the items provided but are not necessarily created at critical design locations. Therefore their use in Digital Terrain Models (DTM) for AMG is limited.

1. Project Control - Microstation DGN file and ASCII file
2. Existing Topographic Data - Microstation DGN file(s)
3. Preliminary Surveyed Ground Surface - GeoPak TIN, if available
4. Horizontal and Vertical alignment information - GeoPak GPK file and/or Microstation DGN file(s)
5. 2D Design line work (edge of pavement, shoulder, etc.) - Microstation DGN file(s)

- 6. Cross sections - Microstation DGN file(s), GeoPak format
- 7. Superelevation - Microstation DGN file(s), GeoPak format
- 8. Form Grades - Microstation DGN file(s)
- 9. Design Drainage - Microstation DGN file(s)

It is expressly understood and agreed that MDOT assumes no responsibility in respect to the sufficiency or accuracy of these CADD files. These files are provided for convenience only and the contract plans are the legal document for constructing the project.

907-699.04--Method of Measurement. Construction stakes will be measured as a lump sum quantity. When Pay Item No. 907-699-A, Roadway Construction Stakes, is provided in the contract, measurement shall include the staking of all bridges, including detour bridges, which are a part of the contract.

907-699.04.1--Roadway Construction Stakes. Roadway Construction Stakes will be measured for payment in accordance with the following schedule:

- (a) When one percent of the original contract amount is earned from all direct pay items, 10 percent of the amount bid for Roadway Construction Stakes will be paid.
- (b) When five percent of the original contract amount is earned from all direct pay items, 25 percent of the amount bid for Roadway Construction Stakes will be paid.
- (c) When 20 percent of the original contract amount is earned from all direct pay items, 50 percent of the amount bid for Roadway Construction Stakes will be paid.
- (d) After the Contractor has earned 50 percent of the original value of all direct pay items, the amount paid will be based on the contract percent complete.

907-699.04.2--Bridge Construction Stakes. Bridge Construction Stakes will be measured for payment in accordance with the following schedule:

- (a) When one percent of the original contract value of all bridge items is earned, 10 percent of the amount bid for Bridge Construction Stakes will be paid.
- (b) When five percent of the original contract value of all bridge items is earned, 25 percent of the amount bid for Bridge Construction Stakes will be paid.
- (c) When 20 percent of the original contract value of all bridge items is earned, 50 percent of the amount bid for Bridge Construction Stakes will be paid.
- (d) After the Contractor has earned 50 percent of original contract value of all bridge items, the amount paid will be based on the percentage of work completed on all bridge items.

907-699.05--Basis of Payment. Construction stakes, measured as prescribed above, will be paid for at the contract lump sum price, which shall be full compensation for completing the work.

Payment will be made under:

907-699-A: Roadway Construction Stakes - lump sum

907-699-B: Bridge Construction Stakes - lump sum

ITS Installation on I-10 from Harrison/ Jackson County Line to Alabama State Line, known as Federal Aid Project No. STP-0010-01(150) / 106964301 in Jackson County.

Line No.	Item Code	Adj Code	Quantity	Units	Description [Fixed Unit Price]
Roadway Items					
0010	201-A001		1	Lump Sum	Clearing and Grubbing
0020	202-B087		193	Linear Feet	Removal of Guard Rail, Including Rails, Posts and Terminal Ends
0030	219-A001		17	Thousand Gallon	Watering [\$20.00]
0040	234-A001		3,990	Linear Feet	Temporary Silt Fence
0050	606-B001		3,525	Linear Feet	Guard Rail, Class A, Type 1
0060	606-C003		7	Each	Guard Rail, Cable Anchor, Type 1
0070	606-D006		1	Each	Guard Rail, Bridge End Section, Type G
0080	606-E003		8	Each	Guard Rail, Terminal End Section, Non-Flared
0090	607-B017		70	Linear Feet	96" Type I Chain Link Fence, Class I
0100	607-G044		1	Each	Gate, 10' x 8' Chain Link
0110	607-P1011		3	Each	Line Post, 12' x 2" Galvanized Steel
0120	607-P2012		3	Each	Brace Post, 12' x 2 1/2" Galvanized Steel
0130	607-P3010		2	Each	Gate Post, 12' x 3 1/2" Galvanized Steel
0140	619-D1001		277	Square Feet	Standard Roadside Construction Signs, Less than 10 Square Feet
0150	619-D2001		1,831	Square Feet	Standard Roadside Construction Signs, 10 Square Feet or More
0160	619-D3001		2,000	Each	Remove and Reset Signs, All Sizes
0170	619-E1001		2	Each	Flashing Arrow Panel, Type C
0180	619-G4001		492	Linear Feet	Barricades, Type III, Single Faced
0190	619-G5001		120	Each	Free Standing Plastic Drums
0200	619-G7001		21	Each	Warning Lights, Type "B"
0210	620-A001		1	Lump Sum	Mobilization
0220	630-F001		88	Each	Delineators, Guard Rail, White
0230	647-A003		173	Each	Pullbox, Type 4
0240	647-A004		132	Each	Pullbox, Type 5
0250	647-A005		179	Each	Pullbox, Type 2
0260	666-B028		19,575	Linear Feet	Electric Cable, Underground in Conduit, THHN, AWG #6, 3 Conduct
0270	666-B038		26,980	Linear Feet	Electric Cable, Underground in Conduit, THHN, AWG #4, 3 Conduct
0280	666-B040		500	Linear Feet	Electric Cable, Underground in Conduit, THHN, AWG #8, 3 Conduct
0290	666-B042		2,020	Linear Feet	Electric Cable, Underground in Conduit, THHN, AWG #1, 4 Conduct
0300	666-B046		5,100	Linear Feet	Electric Cable, Underground in Conduit, THHN, AWG #4, 4 Conduct
0310	666-B052		5,150	Linear Feet	Electric Cable, Underground in Conduit, THHN, AWG #6, 4 Conduct
0320	666-B058		15,015	Linear Feet	Electric Cable, Underground in Conduit, THHN, AWG #1, 3 Conduct

Line No.	Item Code	Adj Code	Quantity	Units	Description [Fixed Unit Price]
0330	666-B059		30	Linear Feet	Electric Cable, Underground in Conduit, THHN, AWG #3, 1 Conduct
0340	907-216-A001		835	Square Yard	Solid Sodding
0350	907-225-A001		2	Acre	Grassing
0360	907-225-B001		1	Ton	Agricultural Limestone
0370	907-225-C001		4	Ton	Mulch, Vegetative Mulch
0380	907-237-A002		3,192	Linear Feet	Wattles, 12"
0390	907-246-A002		798	Each	Sandbags
0400	907-403-A017	(BA1)	237	Ton	9.5-mm, ST, Asphalt Pavement
0402	907-407-A001	(A2)	328	Gallon	Asphalt for Tack Coat
0410	907-618-A001		1	Lump Sum	Maintenance of Traffic
0420	907-619-E3001		2	Each	Changeable Message Sign
0430	907-630-I001		1	Lump Sum	Metal Overhead Sign Supports, Assembly No. 1, Contractor Designe
0440	907-630-I002		1	Lump Sum	Metal Overhead Sign Supports, Assembly No. 2, Contractor Designe
0450	907-630-M003		1	Lump Sum	Pedestal Sign Support, Assembly No 5, Contractor Designed
0460	907-630-M006		1	Lump Sum	Pedestal Sign Support, Assembly No 3, Contractor Designed
0470	907-630-M007		1	Lump Sum	Pedestal Sign Support, Assembly No 4, Contractor Designed
0480	907-630-M008		1	Lump Sum	Pedestal Sign Support, Assembly No 6, Contractor Designed
0490	907-630-M009		1	Lump Sum	Pedestal Sign Support, Assembly No 7, Contractor Designed
0500	907-630-Q003		4	Each	Remove and Reset Sign, All Sizes
0510	907-630-Q004		1	Lump Sum	Post Sign Support, Assembly No. 8, Contractor Designed
0520	907-630-Q007		1	Lump Sum	Post Sign Support, Assembly No. 9, Contractor Designed
0530	907-630-Q009		1	Lump Sum	Post Sign Support, Assembly No. 10, Contractor Designed
0540	907-637-A001		30	Each	Equipment Cabinet, Type B
0550	907-637-A002		4	Each	Equipment Cabinet, Type C
0560	907-637-A003		4	Each	Equipment Cabinet, Type A
0570	907-637-B001		20	Each	ITS Equipment Cabinet Modifications
0580	907-639-B001		3	Each	Traffic Signal Equipment Pole Shaft Extension, 10-foot, Video Came
0590	907-639-E001		24	Each	Camera Pole with Foundation, 50' Pole
0600	907-639-E006		2	Each	Camera Pole with Foundation, 80' Pole
0610	907-639-F001		6	Each	Detector Pole with Foundation, 35' Pole
0620	907-642-B002		14	Each	Solid State Traffic Actuated Controller Modification, Per Plans
0630	907-647-A001		38	Each	Pullbox, Aerial Supported
0640	907-648-D003		2	Each	Radio Interconnect, Broadband, Long Range

Line No.	Item Code	Adj Code	Quantity	Units	Description [Fixed Unit Price]
0650	907-650-A002		68	Each	On Street Video Equipment, Fixed Type
0660	907-650-A003		30	Each	On Street Video Equipment, PTZ Type
0670	907-650-A003		2	Each	On Street Video Equipment, PTZ Type HD
0680	907-655-A001		5	Each	Highway Advisory Radio System
0690	907-655-B001		14	Each	Highway Advisory Radio Flashing Beacon
0700	907-655-C001		1	Lump Sum	Highway Advisory Radio System Software and Server
0710	907-656-A001		2	Each	Dynamic Message Sign, Type 1
0720	907-656-A002		5	Each	Dynamic Message Sign, Type 2
0730	907-656-A004		3	Each	Dynamic Message Sign, Type 3
0740	907-657-A001		197,160	Linear Feet	Fiber Optic Cable, 72 SM
0750	907-657-A001		25,205	Linear Feet	Fiber Optic Cable, 72 SM Aerial Supported
0760	907-657-B001		26,045	Linear Feet	Fiber Optic Drop Cable, 12 SM
0770	907-658-A005		63	Each	Network Switch, Type A
0780	907-658-A006		12	Each	Network Switch, Type B
0790	907-658-A007		2	Each	Network Switch, Type C
0800	907-658-A009		1	Each	Network Switch, Type E
0810	907-658-B001		34	Each	Terminal Server
0820	907-658-C001		5,920	Linear Feet	Category 6 Cable, Installed in Conduit
0830	907-659-A001		1	Lump Sum	Traffic Management Center Modifications
0840	907-659-C001		1	Lump Sum	Traffic Management Center Modifications - Training
0850	907-660-B002		2	Each	Communications Hut
0860	907-661-D001		3	Each	Rest Area Video Kiosk
0870	907-662-A002		2	Each	Video Encoder
0880	907-663-A001		1	Lump Sum	Central Management Signal Control Software
0890	907-664-A002		2	Each	Roadway Weather Information System
0900	907-664-B003		2	Each	FOG AHEAD Sign with Flashing Beacons
0910	907-666-F001		21	Each	Ground Mounted Transformer Enclosure
0920	907-668-E001		12,895	Linear Feet	Traffic Signal Conduit Bank, Underground, Rolled Pipe, 2"
0930	907-668-E002		106,930	Linear Feet	Traffic Signal Conduit Bank, Underground, Rolled Pipe, 2 @ 2"
0940	907-668-E003		42,120	Linear Feet	Traffic Signal Conduit Bank, Underground, Rolled Pipe, 3 @ 2"
0950	907-668-E004		1,080	Linear Feet	Traffic Signal Conduit Bank, Underground, Rolled Pipe, 4 @ 2"
0960	907-668-E005		125	Linear Feet	Traffic Signal Conduit Bank, Underground, Rolled Pipe, 5 @ 2"
0970	907-668-F001		7,760	Linear Feet	Traffic Signal Conduit Bank, Underground, Drilled or Jacked, Rolled F 2"

Line No.	Item Code	Adj Code	Quantity	Units	Description [Fixed Unit Price]
0980	907-668-F002		26,065	Linear Feet	Traffic Signal Conduit Bank, Underground, Drilled or Jacked,Rolled F @ 2"
0990	907-668-F003		2,320	Linear Feet	Traffic Signal Conduit Bank, Underground, Drilled or Jacked,Rolled F @ 2"
1000	907-668-F004		150	Linear Feet	Traffic Signal Conduit Bank, Underground, Drilled or Jacked,Rolled F @ 2"
1010	907-668-G001		420	Linear Feet	Traffic Signal Conduit Bank, Aerial Supported, Type I, 3 @ 2"
1020	907-668-G002		26,035	Linear Feet	Traffic Signal Conduit Bank, Aerial Supported, Type I, 2 @ 2"
1030	907-670-A001		32	Each	ITS Radar Detection System
1040	907-670-B001		2,245	Linear Feet	ITS RDS Comm Cable
1050	907-697-A001		22	Each	Bluetooth Detection System, Type A
1060	907-697-C001		22	Each	Bluetooth Detection System Server Licensing
1062	907-699-A002		1	Lump Sum	Roadway Construction Stakes
ALTERNATE GROUP AA NUMBER 1					
1070	907-304-F002	(GT)	1,719	Ton	Size 610 Crushed Stone Base
ALTERNATE GROUP AA NUMBER 2					
1080	907-304-F003	(GT)	1,719	Ton	3/4" and Down Crushed Stone Base
ALTERNATE GROUP AA NUMBER 3					
1090	907-304-F004	(GT)	1,719	Ton	Size 825B Crushed Stone Base

GENERAL INDEX

INCLUDED THIS PROJECT	BEGIN WITH SHEET
<input checked="" type="checkbox"/> ROADWAY	1
<input type="checkbox"/> PERMANENT SIGNS	1001
<input type="checkbox"/> TRAFFIC SIGNALS	2001
<input checked="" type="checkbox"/> ITS COMPONENTS	3001
<input type="checkbox"/> LIGHTING	4001
<input type="checkbox"/> (RESERVED)	5001
<input checked="" type="checkbox"/> ROADWAY STANDARD DWGS	6001
<input type="checkbox"/> BRIDGE STANDARD DWGS	7001
<input type="checkbox"/> BRIDGE	8001
<input type="checkbox"/> CROSS SECTIONS	9001

STATE OF MISSISSIPPI

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED

FEDERAL AID PROJECT NO. STP-0010-01(150)

I-10 SAFETY PROJECT/ITS PROJECT

JACKSON COUNTY

FMS CONST. 106964 / 301000

PLAN LAYOUT
 1 IN. = 100 FT.
 1 IN. = 10000 FT.

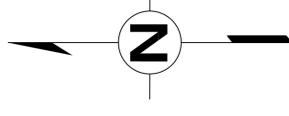
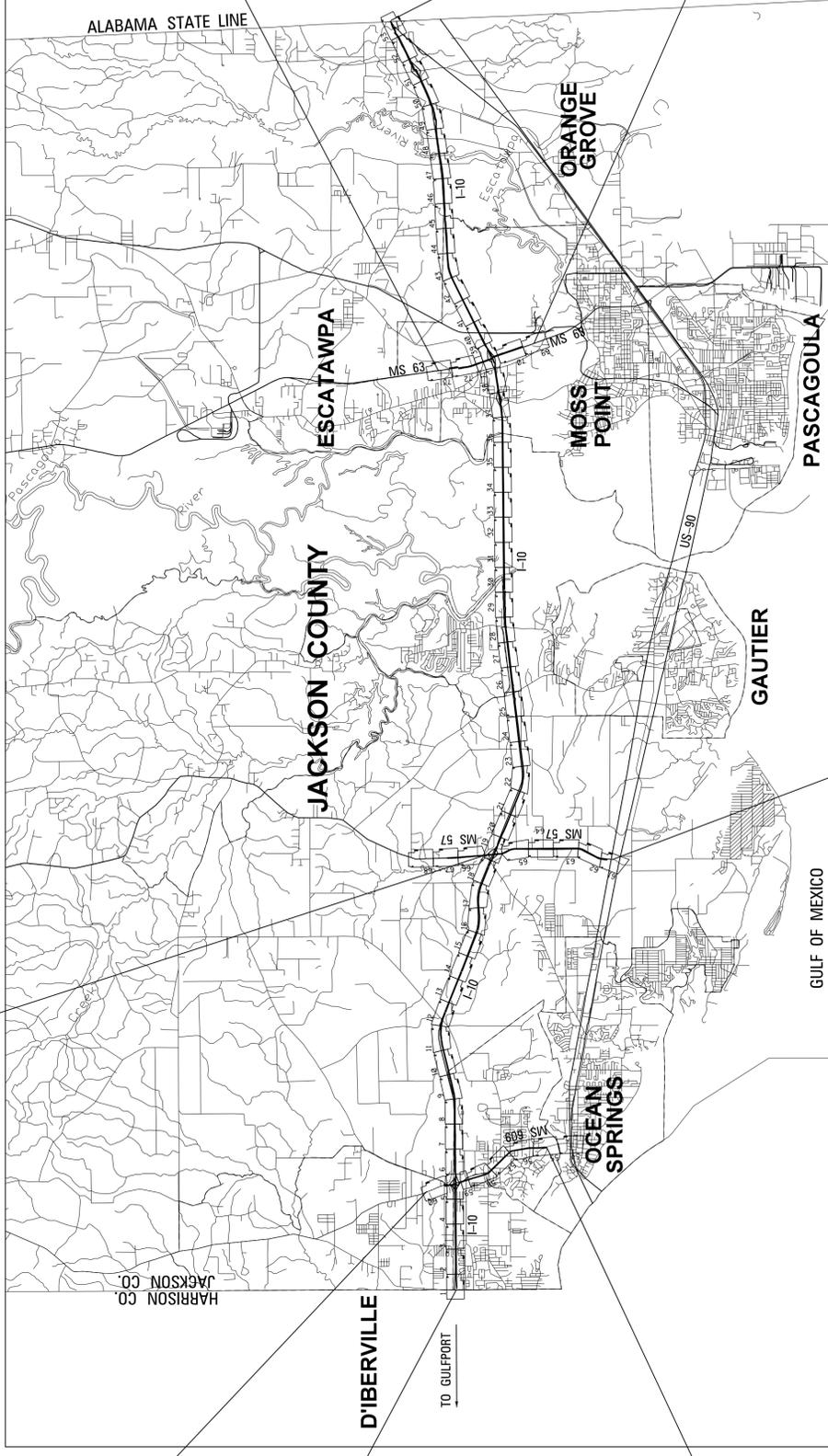
E.O.P. MS 57 LIMITS
 STA. 3160+00
 LAT. 30°26'33.36"N
 LONG. 88°43'03.14"W

E.O.P. MS 609 LIMITS
 STA. 2697+00
 LAT. 30°27'47.92"N
 LONG. 88°50'44.96"W

B.O.P. I-10 LIMITS
 STA. 500+00
 LAT. 30°27'13.19"N
 LONG. 88°53'0.10"W

BOP MS 609 LIMITS
 STA. 2539+00
 LAT. 30°25'25.66"N
 LONG. 88°49'44.40"W

B.O.P. MS 57 LIMITS
 STA. 3008+77
 LAT. 30°24'7.56"N
 LONG. 88°43'10.69"W



E.O.P. MS 63 LIMITS
 STA. 4281+00
 LAT. 30°27'33.27"N
 LONG. 88°32'00.08"W

E.O.P. I-10 LIMITS
 STA. 2070+35
 LAT. 30°28'27.85"N
 LONG. 88°24'0.73"W

B.O.P. MS 63 LIMITS
 STA. 4161+00
 LAT. 30°25'39.37"N
 LONG. 88°31'22.82"W

LENGTH DATA

LENGTH OF PROJECT (GROSS)

199,968 FT.

37.87 MI.

DATE: 10/16/15
 ELECTRICAL ONLY



DATE: 10/16/15

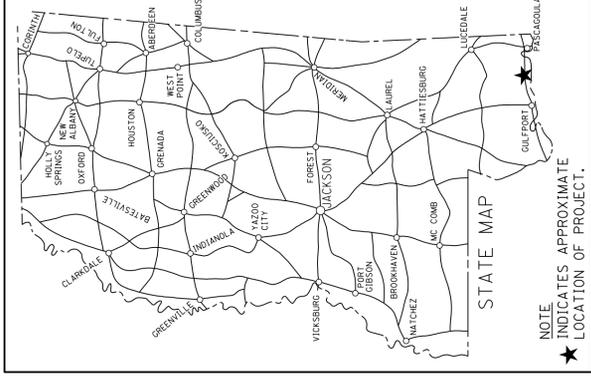


JACKSON COUNTY

JACKSON COUNTY

1

FED. ROAD REG. NO.	STATE	PROJECT NO.	SHEET NO.
4	MISS.	STP-0010-01(150)	1



NOTE
 INDICATES APPROXIMATE LOCATION OF PROJECT.

LAT. 30° 26' 13" N LONG. 88° 36' 54" W
 (APPROX. MIDDLE OF PROJECT)

PERMITS ACQUIRED BY MDOT	
WETLANDS AND WATERS PERMITS (NECESSARY FOR ULTIMATE IMPROVEMENTS ONLY):	
WATERS	WETLANDS
N	N
N	N
N	N
N	N
N	N
* ACQUISITION OF PERMITS FOR TEMPORARY IMPACTS DURING CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR	
STORMWATER PERMIT	
Y	S
REQUIRED CNOI SUBMITTED BY MDOT (DISTURBED AREA=5 ACRES)	
S REQUIRED SCOP TO BE SUBMITTED BY CONTRACTOR (1 TO 0.58 ACRES)	
N NO STORMWATER PERMIT REQUIRED (<1 ACRE)	
APPROVED BY: _____	

APPROVED: _____

P S & E DATE: 06 /11 /15

DEPUTY EXECUTIVE DIRECTOR /CHIEF ENGINEER

EXECUTIVE DIRECTOR



MISSISSIPPI DEPARTMENT OF TRANSPORTATION

ADDENDUM

FMS CON: 106964 / 301000

STATE	PROJECT NO.
MISS.	STP-0010-01(150)A

DETAILED INDEX

DESCRIPTION OF SHEET	REVISION DATE	WORKING NUMBER	SHEET NUMBER
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DETAILED INDEX AND GENERAL NOTES SHEETS (3)			
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ITS LEGEND (1)		LEG-1	3
GENERAL NOTES (1)		GN-1	4
QUANTITY SHEETS (13)			
SUMMARY OF QUANTITIES (3)		SQ-1 TO SQ-3	5 - 7
ESTIMATED ROADWAY QUANTITIES (5)		EQ-1 TO EQ-5	8 - 12
ESTIMATED ITS QUANTITIES (5)		EQ-6 TO EQ-10	13 - 17
OVERALL PLAN SHEET (1)			
PROJECT LOCATION PLAN		LP-1	18
CONSTRUCTION SIGNING SHEET (1)			
CONSTRUCTION SIGNING LAYOUT		CS-1	19
MISCELLANEOUS ROADWAY SHEETS (16)			
BREAKAWAY SIGN SUPPORTS		SDSN-6B	20
TRAFFIC CONTROL PLAN FOR POSTED SPEED LIMIT LESS THAN 65 MPH(4-LANE MEDIAN OR OUTSIDE LANE CLOSURE) (EXTENDED PERIOD)		SDTCP-3	21
TRAFFIC CONTROL PLAN FOR POSTED SPEED LIMIT LESS THAN 65 OR 70 MP (INTERSTATES AND OTHER 4-LANE DIVIDED HIGHWAYS/MEDIAN LANE OR OUTSIDE LANE CLOSURE)(EXTENDED PERIOD)		SDTCP-4	22
HIGHWAY SIGN AND BARRICADE DETAILS FOR CONSTRUCTION PROJECTS		SDTCP-10	23
SPECIAL POST DESIGN FOR ADVANCE WARNING FLASHING ASSEMBLY		SSD-1	24
TRAFFIC CONTROL PLAN NOTES		TC-1	25
TRAFFIC CONTROL PLAN NOTES		TC-2	26
TRAFFIC CONTROL PLAN (TYPICAL SIGNAL INSTALLATION)		TSD-7	27
TRAFFIC CONTROL PLAN - DRUM PLACEMENT AND SHOULDER CLOSURE		TCP-SC	28
MISCELLANEOUS CONSTRUCTION DETAILS		MCD-1	29
TYPICAL TEMPORARY EROSION/ SEDIMENT CONTROL APPLICATIONS		ECD-1	30
DETAILS OF SEDIMENT BARRIER APPLICATIONS		ECD-2	31
DETAILS OF SILT FENCE INSTALLATION		ECD-3	32
DETAILS OF EROSION CONTROL WATTLE CHECK DITCH		ECD-6	33
INLET PROTECTION DETAILS OF WATTLES		ECD-12	34
VEGETATION SCHEDULE - DISTRICT 6 OR 7 - URBAN - ALL TYPES PROJECTS		VS-1	35
ITS PLAN SHEETS (73)			
ITS PLANS - INTERSTATE 10 - STA. 500+00 TO STA. 2070+35 (63)		ITS-1 TO ITS-63	3001 - 3053
ITS PLANS - MS 609 - STA. 2539+00 TO STA. 2675+50 (7)		ITS-64 TO ITS-60	3054 - 3060
ITS PLANS - MS 57 - STA. 3008+77 TO STA. 3212+00 (8)		ITS-61 TO ITS-68	3061 - 3068
ITS PLANS - MS 63 - STA. 4171+00 TO STA. 4268+31 (5)		ITS-69 TO ITS-73	3069 - 3073
ITS DETAIL SHEETS (44)			
AERIAL SUPPORTED CONDUIT - NOTES AND TYPICAL DETAILS (2)		ASC-1 TO ASC-2	3074 - 3075
CABINET DETAILS - TYPE B & C CABINET DETAILS		CAB-1	3076
CABINET DETAILS - TYPE A CABINET DETAILS		CAB-2	3077
CCTV DETAILS - POLE MOUNTED CCTV DETAILS		CCTV-1	3078
CCTV DETAILS - MAST ARM VERTICAL AND LATERAL POLE EXTENSION CCTV DETAILS		CCTV-2	3079
CCTV DETAILS - CAMERA LOWERING DEVICE DETAILS		CCTV-3	3080
CCTV DETAILS - TYPICAL CCTV ON 80' CAMERA POLE W/ LOWERING DEVICE		CCTV-4	3081
RDS DETAILS - POLE MOUNTED RDS DETAILS		RDS-1	3082
SHEET 3083 NOT USED			
DMS DETAILS - DMS #1 TYPE 1		DMS-1	3084
DMS DETAILS - DMS #2 TYPE 1		DMS-2	3085
DMS DETAILS - DMS #3 TYPE 2		DMS-3	3086
DMS DETAILS - DMS #4 TYPE 2		DMS-4	3087
DMS DETAILS - DMS #5 TYPE 2		DMS-5	3088
DMS DETAILS - DMS #6 TYPE 2		DMS-6	3089
DMS DETAILS - DMS #7 TYPE 2		DMS-7	3090
DMS DETAILS - DMS #8 TYPE 2		DMS-8	3091
DMS DETAILS - DMS #9 TYPE 3		DMS-9	3092
DMS DETAILS - DMS #10 TYPE 3		DMS-10	3093
HIGHWAY ADVISORY RADIO - HAR SYSTEM DETAILS		HAR-1	3094
HIGHWAY ADVISORY RADIO - HAR SIGN AND FLASHING BEACON DETAILS		HAR-2	3095
HIGHWAY ADVISORY RADIO - HAR SIGN AND FLASHING BEACON DETAILS		HAR-3	3096
HIGHWAY ADVISORY RADIO - HAR SIGN SCHEDULE		HAR-4	3097

DETAILED INDEX (CONT'D)

DESCRIPTION OF SHEET	REVISION DATE	WORKING NUMBER	SHEET NUMBER
ITS DETAIL SHEETS (CON'D)			
EROSION CONTROL PLAN - ITS DETAILS		EC-1	3098
EQUIPMENT DETAILS - SITE BLOCK DIAGRAMS		EC-2	3099
FIBER OPTIC DETAILS - PULLBOX AND CONDUIT TRENCHING DETAILS		ED-1	3100
FIBER OPTIC DETAILS - CABINET ENTRANCE DETAIL (EXISTING CABINETS)		FO-1	3101
FIBER OPTIC DETAILS - FIBER SPLICING DETAILS		FO-2	3102
FIBER OPTIC DETAILS - FIBER SPLICING DETAILS		FO-3A	3103
FIBER OPTIC DETAILS - FIBER SPLICING DETAILS		FO-3B	3104
FIBER OPTIC DETAILS - FIBER SPLICING DETAILS		FO-3C	3105
FIBER OPTIC DETAILS - TERMINATION CABINET TABLES		FO-3D	3106
FIBER OPTIC DETAILS - TERMINATION CABINET		FO-4	3107
FIBER OPTIC DETAILS - CABLE MANAGEMENT DETAILS		FO-5	3108
FIBER OPTIC DETAILS - SYSTEM BLOCK DIAGRAM (4)		FO-6	3109
ELECTRICAL DETAILS - POWER SERVICE DETAILS		POW-1	3110 - 3113
ELECTRICAL DETAILS - POWER SERVICE DETAILS		POW-2	3114
WARNING DETAILS - "FOG AHEAD" ROAD SIGN AND FLASHING BEACON DETAILS		WAR-1	3115
WARNING DETAILS - FLASHING BEACON WITH TYPE B AND C CABINET DETAILS AND WIRELESS SYSTEM		WAR-2	3116
RWIS DETAILS - RWIS MOUNTING DETAILS		RWIS-1	3117
			3118
ROADWAY STANDARD DRAWINGS (18)			
FENCE: CHAINLINK CLASS 1		CL-1	6162
FENCE: CHAINLINK GATE		CLG-1	6168
GUARDRAIL: "W" BEAM (WOOD POSTS)		GR-1	6180
GUARDRAIL: "W" BEAM (STEEL POSTS)		GR-1B	6182
GUARDRAIL: BRIDGE END SECTIONS TYPE "E", "F" & "G"		GR-2A	6185
GUARDRAIL: TYPE 1 CABLE ANCHORAGE (FOUNDATION TUBE)		GR-3	6192
GUARDRAIL: TYPE 1 CABLE ANCHORAGE (CONCRETE FOOTING)		GR-3A	6193
GUARDRAIL: TYPICAL INSTALLATION AT BRIDGE APPROACHES FOR DIVIDED HIGHWAYS		GR-4	6194
GUARDRAIL: TYPICAL INSTALLATION FOR ROADSIDE HAZARDS ON DIVIDED HIGHWAYS		GR-4C	6197
GUARDRAIL: MISCELLANEOUS HARDWARE		GR-HW	6202
STANDARD ROADSIDE SIGN ASSEMBLY AND INSTALLATION		SN-4	6225
TYPICAL INSTALLATION OF GROUND MOUNTED DIRECTIONAL SIGNS		SN-5	6228
BREAKAWAY SIGN SUPPORTS		SN-6	6229
BREAKAWAY SIGN SUPPORTS		SN-6A	6230
TYPICAL GUARDRAIL DELINEATION		SN-8C	6236
TRAFFIC CONTROL PLAN WITH FLAGGER (ONE-LANE CLOSURE OF TWO-WAY TRAFFIC)		TCP-1	6250
TRAFFIC CONTROL PLAN FOR POSTED SPEED LIMIT LESS THAN 65 MPH - (4-LANE: MEDIAN LANE OR OUTSIDE LANE CLOSURE) (WORK DAY ONLY)		TCP-2	6251
TRAFFIC CONTROL PLAN FOR POSTED SPEED LIMIT OF 65 OR 70 MPH - (INTERSTATES AND OTHER 4-LANE DIVIDED HIGHWAYS) (MEDIAN LANE OR OUTSIDE LANE CLOSURE) (WORK DAY ONLY)		TCP-5	6254
TOTAL SHEETS			(170)



DATE: 10/16/15
ELECTRICAL ONLY



DATE: 10/16/15
ELECTRICAL ONLY

10/16/15	7/15/15	11/15/15	12/15/15
REVISED PROJECT NUMBER	ADDED SHEETS	REVISION	BY

GRESHAM SMITH AND PARTNERS, MS, P.C.			
PS & E PLANS-DATE 06/21/15			
FMS CON. # 106964 / 301000			
REVISIONS			
DATE	SHEET NO.	BY	
7/15/15	2, 5-17, 29-35, 3101, 3104-3106, 3108	TTG	
8/11/15	7, 13-17, 3005, 3011, 3035, 3064, 3083, 3104, 3106	TCS	
10/16/15	1-2, 4-5, 7-17, 26	TTG	

MISSISSIPPI DEPARTMENT OF TRANSPORTATION			
DETAILED INDEX			
PROJ. NO STP-0010-01(150)A			
JACKSON COUNTY			
FILENAME: DI-01.DGN	DESIGN TEAM	GS&P	CHECKED
			DATE
WORKING NUMBER	DI-1	SHEET NUMBER	2

ADDENDUM

SUMMARY OF QUANTITIES (SHEET 1)

PAY ITEM NO.	PAY ITEM	UNIT	PRELIMINARY	FINAL
*****ROADWAY ITEMS*****				
201-A001	CLEARING AND GRUBBING	LS	100%	
202-B087	REMOVAL OF GUARD RAIL, INCLUDING RAILS, POSTS AND TERMINAL ENDS	LF	193	
907-216-A001	SOLID SODDING	SY	835	
219-A001	WATERING	KGAL	17	
907-225-A001	GRASSING	ACRE	2	
907-225-B001	AGRICULTURAL LIMESTONE	TON	1	
907-225-C001	MULCH, VEGETATIVE MULCH	TON	4	
234-A001	TEMPORARY SILT FENCE	LF	3990	
907-237-A002	WATTLES, 12"	LF	3192	
907-246-A002	SANDBAGS	EA	798	
907-304-F003	3/4" AND DOWN CRUSHED STONE BASE	TON	1719	
907-304-F004	SIZE 825B CRUSHED STONE BASE	TON	1719	
907-304-F002	SIZE 610 CRUSHED STONE BASE	TON	1719	
907-403-A017	9.5-MM, ST, ASPHALT PAVEMENT	TON	237	
907-407-A001	ASPHALT FOR TACK COAT	GAL	328	
606-B001	GUARD RAIL, CLASS A, TYPE 1	LF	3525	
606-C003	GUARD RAIL, CABLE ANCHOR, TYPE 1	EA	7	
606-D006	GUARD RAIL, BRIDGE END SECTION, TYPE G	EA	1	
606-E003	GUARD RAIL, TERMINAL END SECTION, NON-FLARED	EA	8	
607-B017	96" TYPE I CHAIN LINK FENCE, CLASS I	LF	70	
607-G044	GATE, 10' X 8' CHAIN LINK	EA	1	
607-P1011	LINE POST, 12' X 2" GALVANIZED STEEL	EA	3	
607-P2012	BRACE POST, 12' X 2 1/2" GALVANIZED STEEL	EA	3	
607-P3010	GATE POST, 12' X 3 1/2" GALVANIZED STEEL	EA	2	
907-618-A001	MAINTENANCE OF TRAFFIC	LS	100%	
619-D1001	STANDARD ROADSIDE CONSTRUCTION SIGNS, LESS THAN 10 SQUARE FEET	SF	277	
619-D2001	STANDARD ROADSIDE CONSTRUCTION SIGNS, 10 SQUARE FEET OR MORE	SF	1831	
619-D3001	REMOVE AND RESET SIGNS, ALL SIZES	EA	2000	
619-E1001	FLASHING ARROW PANEL, TYPE C	EA	2	
907-619-E3001	CHANGEABLE MESSAGE SIGN	EA	2	
619-G4001	BARRICADES, TYPE III, SINGLE FACED	LF	492	
619-G5001	FREE STANDING PLASTIC DRUM S	EA	120	
619-G7001	WARNING LIGHTS, TYPE "B"	EA	21	
620-A001	MOBILIZATION	LS	100%	
630-F001	DELINEATORS, GUARD RAIL, WHITE	EA	88	
907-699-A002	ROADWAY CONSTRUCTION STAKES	LS	100%	

FOOTNOTES:

- ① QUANTITY IS ESTIMATED AT 1 ACRE. ACTUAL QUANTITY TO BE AS DIRECTED BY THE ENGINEER.
- ② TO BE SALVAGED, DELIVERED TO THE NEAREST MDOT MAINTENANCE STORAGE FACILITY AND BECOME PROPERTY OF MDOT.
- ③ INCLUDES A 20% INCREASE FROM CALCULATED QUANTITY. INCLUDES 16 TONS TO BE USED FOR COMMUNICATIONS HUT, 31 TONS TO BE USED FOR COMMUNICATIONS HUT DRIVEWAY, AND 1672 TONS TO BE USED FOR SHOULDER WIDENING AT GUARDRAIL INSTALLATIONS.
- ④ TO BE USED FOR SHOULDER WIDENING AT GUARDRAIL INSTALLATIONS. REFER TO WK. NO. MCD-1 AND DMS DETAIL SHEETS IN THESE PLANS FOR WIDENING DETAILS.
- ⑤ SEEDING OF DISTURBED AREAS TO BE ABSORBED UNDER THESE PAY ITEMS. CONTRACTOR TO BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING VEGETATIVE GROWTH UNTIL PROJECT IS ACCEPTED OR AS DIRECTED BY ENGINEER.
- ⑥ LENGTH OF GUARDRAIL REQUIRED IS BASED ON A TERMINAL SECTION OF 37.5 FEET BEING USED. FOR ANY OTHER LENGTH TERMINAL SECTION, THE LENGTH OF NORMAL GUARDRAIL WILL BE ADJUSTED.
- ⑦ *** FOOTNOTE NOT USED**
- ⑧ REFER TO TRAFFIC CONTROL PLAN SHEETS, NOTES AND DETAILS.
- ⑨ PRICE BID SHALL INCLUDE ALL TRAFFIC CONTROL ELEMENTS NEEDED TO MEET MUTCD AND MDOT TRAFFIC CONTROL REQUIREMENTS.
- ⑩ TO BE USED IN ADVANCE OF WORKZONE WHERE DIRECTED BY ENGINEER.
- ⑪ QUANTITY DOES NOT INCLUDE 122 TONS OF GRAVEL NEEDED FOR TYPE 2 PULL BOXES, 288 TONS OF GRAVEL FOR TYPE 4 PULL BOXES OR 286 TONS OF GRAVEL FOR TYPE 5 PULL BOXES. THESE AMOUNTS ARE COST ABSORBED IN THE PULL BOXES.

10/16/15	ADDED PATTERNS, CHANGED PATTERN NO.	
7/15/15	REVISED FOOTNOTE, CHANGED QUANTITY	
	ADDED / CHANGED PATTERNS, CHANGED	
	QUANTITIES, REVISED / ADDED /	
	REMOVED FOOTNOTES	
	BY	
	DATE	

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

PROJ. NO. HSIP-0010-01(150)
JACKSON COUNTY

WORKING NUMBER
SQ-1

SHEET NUMBER
5

FILENAME: SQ-01.DGN
DESIGN TEAM: GSP
CHECKED: _____
DATE: _____

ADDENDUM

SUMMARY OF QUANTITIES (SHEET 3)

PAY ITEM NO.	PAY ITEM	UNIT	PRELIMINARY	FINAL
	****ITS ITEMS (CONT'D)*****			
907-658-A005	NETWORK SWITCH, TYPE A	EA	63	
907-658-A006	NETWORK SWITCH, TYPE B	EA	12	
907-658-A007	NETWORK SWITCH, TYPE C	EA	2	
907-658-A009	NETWORK SWITCH, TYPE E	EA	1	
907-658-B001	TERMINAL SERVER	EA	34	
907-658-C001	CATEGORY 6 CABLE, INSTALLED IN CONDUIT	LF	5920	
907-659-A001	TRAFFIC MANAGEMENT CENTER MODIFICATIONS	LS	100%	
907-659-C001	TRAFFIC MANAGEMENT CENTER MODIFICATIONS - TRAINING	LS	100%	
907-660-B002	COMMUNICATIONS HUT	EA	2	
907-661-D001	REST AREA VIDEO KIOSK	EA	3	
907-662-A002	VIDEO ENCODER	EA	2	
907-663-A001	CENTRAL MANAGEMENT SIGNAL CONTROL SOFTWARE	LS	100%	
907-664-A002	ROADWAY WEATHER INFORMATION SYSTEM	EA	2	
907-664-B003	"FOG AHEAD" SIGN WITH FLASHING BEACONS	EA	2	
666-B028	ELECTRIC CABLE, UNDERGROUND IN CONDUIT, THHN, AWG #6, 3 CONDUCTOR	LF	19575	
666-B038	ELECTRIC CABLE, UNDERGROUND IN CONDUIT, THHN, AWG #4, 3 CONDUCTOR	LF	26980	
666-B040	ELECTRIC CABLE, UNDERGROUND IN CONDUIT, THHN, AWG #8, 3 CONDUCTOR	LF	500	
666-B042	ELECTRIC CABLE, UNDERGROUND IN CONDUIT, THHN, AWG #1, 4 CONDUCTOR	LF	2020	
666-B046	ELECTRIC CABLE, UNDERGROUND IN CONDUIT, THHN, AWG #4, 4 CONDUCTOR	LF	5100	
666-B052	ELECTRIC CABLE, UNDERGROUND IN CONDUIT, THHN, AWG #6, 4 CONDUCTOR	LF	5150	
666-B058	ELECTRIC CABLE, UNDERGROUND IN CONDUIT, THHN, AWG #1, 3 CONDUCTOR	LF	15015	
666-B059	ELECTRIC CABLE, UNDERGROUND IN CONDUIT, THHN, AWG #3, 1 CONDUCTOR	LF	30	
907-666-F001	GROUND MOUNTED TRANSFORMER ENCLOSURE	EA	21	
907-668-E001	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, ROLLED PIPE, 2"	LF	12895	
907-668-E002	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, ROLLED PIPE, 2 @ 2"	LF	106930	
907-668-E003	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, ROLLED PIPE, 3 @ 2"	LF	42120	
907-668-E004	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, ROLLED PIPE, 4 @ 2"	LF	1080	
907-668-E005	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, ROLLED PIPE, 5 @ 2"	LF	125	
907-668-F001	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, DRILLED OR JACKED, ROLLED PIPE, 2"	LF	7760	
907-668-F002	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, DRILLED OR JACKED, ROLLED PIPE, 2 @ 2"	LF	26065	
907-668-F003	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, DRILLED OR JACKED, ROLLED PIPE, 3 @ 2"	LF	2320	
907-668-F004	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, DRILLED OR JACKED, ROLLED PIPE, 5 @ 2"	LF	150	
907-668-G001	TRAFFIC SIGNAL CONDUIT BANK, AERIAL SUPPORTED, TYPE1, 3 @ 2"	LF	420	
907-668-G002	TRAFFIC SIGNAL CONDUIT BANK, AERIAL SUPPORTED, TYPE1, 2 @ 2"	LF	26035	
907-670-A001	ITS RADAR DETECTION SYSTEM	EA	32	
907-670-B001	ITS RDS COMM CABLE	LF	2245	
907-697-A001	BLUETOOTH DETECTION SYSTEM, TYPE A	EA	22	
907-697-C001	BLUETOOTH DETECTION SYSTEM SERVER LICENSING	EA	22	

FOOTNOTES:

- 1 WHERE TERMINAL SERVER AND NETWORK SWITCH LOCATED IN THE SAME CABINET THE CONTRACTOR MAY PROVIDE NETWORK SWITCH WITH INTEGRATED TERMINAL SERVER SERIAL PORT IN LIEU OF A SEPARATE TERMINAL SERVER DEVICE. SEE PROJECT NTB FOR DETAILS.
- 2 MEASUREMENT INCLUDES ONLY HORIZONTAL RUNS CALLED OUT ON PLANS. CABLE LENGTH FROM ITS DEVICE ON POLE OR ON SIGN TO THE POLE OR GROUND MOUNTED CABINET WILL NOT BE MEASURED FOR SEPARATE PAYMENT, BUT SHALL BE ABSORBED IN OTHER ITEMS.
- 3 REFER TO NTB ENTITLED "TRAFFIC MANAGEMENT CENTER MODIFICATIONS".
- 4 TO BE INSTALLED IN COMMUNICATIONS HUT. SEE NTB ENTITLED "LOCATION AND CONFIGURATION OF OTN NODES"
- 5 SHOWN ON PLANS AS "COMM HUT".
- 6 INCLUDES ALUMINUM SIGN FACE, SUPPORTS, FOOTINGS, FLASHING BEACONS AND ALL OTHER HARDWARE AND INCIDENTALS NECESSARY FOR A COMPLETE HAR SIGN ASSEMBLY AS SHOWN ON THE PLANS AND IN THE PROJECT SPECIFICATIONS. SEE WKG NO WAR-1 FOR DETAILS.
- 7 POWER CABLE FROM THE ELECTRICAL DEMARCATION TO THE FIELD CABINET. COST OF ELECTRICAL SERVICE POINT (POWER FEED, METER BASE, BREAKER, POLE, TRANSFORMERS, ETC.) TO BE ABSORBED IN THESE PAY ITEMS. CHARGES FROM THE UTILITY FOR SERVICE SHALL ALSO BE ABSORBED UNTIL THE PROJECT IS ACCEPTED.
- 8 INSTALLATION MAY BE BY TRENCHING, PLOWING OR BORING AT CONTRACTOR'S DISCRETION. BID PRICE SHALL BE THE SAME REGARDLESS OF WHICH INSTALLATION METHOD IS USED.
- 9 SEEDING OF DISTURBED AREAS TO BE ABSORBED UNDER THESE PAY ITEMS. CONTRACTOR TO BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING VEGETATIVE GROWTH UNTIL PROJECT IS ACCEPTED OR AS DIRECTED BY ENGINEER.
- 10 CONDUIT BANK INCLUDES MULTIPLE CONDUITS. MEASUREMENT IS PER LINEAR FOOT OF BANK. SEPARATE PAYMENT IS NOT MADE FOR EACH CONDUIT.
- 11 SHOWN ON PLANS AS (BORED), DRILLED OR JACKED CONDUIT SHALL BE INSTALLED AT A MINIMUM DEPTH OF 5 FEET UNLESS SHOWN OTHERWISE IN PLANS.
- 12 THE BID PRICE FOR DRILLED OR JACKED CONDUIT SHALL ONLY APPLY TO LOCATIONS WHERE CONDUIT IS DESIGNATED ON PLANS AS (BORED).
- 13 THIS CONDUIT IS STRUCTURE-ATTACHED CONDUIT, HANGERS, AND EXPANSION ASSEMBLIES. REFER TO WK. NOS ASC-1 AND ASC-2 FOR ADDITIONAL DETAILS.
- 14 MEASUREMENT INCLUDES ONLY HORIZONTAL RUNS CALLED OUT ON PLANS. CABLE LENGTH FROM DETECTOR TO POLE OR GROUND MOUNTED CABINET WILL NOT BE MEASURED FOR SEPARATE PAYMENT, BUT SHALL BE ABSORBED IN ITEM NO. 907-670-A.
- 15 THIS PAY ITEM INCLUDES THE COMMUNICATIONS NODE HUT, COMMUNICATIONS NODE VAULT, THE COMMUNICATIONS NODE HUT INSTALLATION AND CONFIGURATION, AND COMMUNICATIONS NODE HUT TRAINING. SEE NTB ENTITLED LOCATION AND CONFIGURATION OF COMMUNICATIONS NODES.

10/16/15	CHANGED PAYITEM NO. & DESC.	TTC	
8/11/15	REMOVED 907-668-C, ADDED PAYITEMS.	TCS	
7/15/15	ADDED FOOTNOTE, QUANTITY CHANGE	TCS	
7/15/15	CHANGED PAYITEM, NO. 7, DESC.	TTC	
7/15/15	CHANGED QUANTITIES, REVISED FOOTNOTE	TTC	
	REVISION	BY	DATE

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
SUMMARY OF QUANTITIES
 PROJ. NO. HSIP-0010-01(150)
 JACKSON COUNTY
 WORKING NUMBER SQ-3
 SHEET NUMBER 7
 FILENAME: SQ-01.DGN
 DESIGN TEAM GSP CHECKED DATE



ADDENDUM

STATE	PROJECT NO.
MISS.	HSIP-0010-01(150)

PAY ITEM NO.	PAY ITEM	UNIT	EQ-1		EQ-2		EQ-3		EQ-4		PROJECT	
			ROADWAY SUBTOTAL	FINAL	EST.	FINAL						
201-A001	CLEARING AND GRUBBING	L.S.	0	0	0	0	0	0	0	0	100%	193
202-B087	REMOVAL OF GUARD RAIL, INCLUDING RAILS, POSTS AND TERMINAL ENDS	L.F.	0	0	0	193	0	0	0	0	835	193
907-216-A001	SOLID SODDING	S.Y.	0	0	0	36	0	0	799	0	17	835
219-A001	WATERING	KGAL	0	0	0	1	0	0	16	0	2	17
907-225-A001	GRASSING	ACRE	0.2	0.5	0.7	0.7	0.7	0.5	0.5	0.5	1	2
907-225-B001	AGRICULTURAL LIMESTONE	TON	0.1	0.2	0.4	0.4	0.4	0.3	0.3	0.3	1	1
907-225-C001	MULCH, VEGETATIVE MULCH	TON	0.4	1.0	1.4	1.4	1.0	1.0	1.0	1.0	4	4
234-A001	TEMPORARY SILT FENCE	L.F.	1200	1140	1110	1110	540	540	540	3990	3990	3990
907-237-A002	WATTLES, 12"	L.F.	960	912	888	888	432	432	432	3192	3192	3192
907-246-A002	SANDBAGS	EACH	240	228	222	222	108	108	108	798	798	798
** SEE WK. NO. SQ-1**	CRUSHED STONE BASE	TON	0	350	551	551	89	89	531	1432	237	1432
907-403-A017	9.5-MM. ST. ASPHALT PAVEMENT	TON	0	54	93	93	126	126	132	328	328	328
407-A001	ASPHALT FOR TACK COAT	GAL	0	71	126	126	1425	1425	1325	3525	3525	3525
606-B001	GUARD RAIL, CLASS A, TYPE 1	L.F.	0	775	1425	1425	3	3	3	7	7	7
606-C003	GUARD RAIL, CABLE ANCHOR, TYPE 1	EACH	0	2	2	2	1	1	0	1	1	1
606-D006	GUARD RAIL, BRIDGE END SECTION, TYPE G	EACH	0	0	1	1	0	0	0	0	0	0
606-E003	GUARD RAIL, TERMINAL END SECTION, NON-FLARED	EACH	0	2	3	3	0	0	3	8	8	8
607-B017	96" TYPE I CHAIN LINK FENCE, CLASS I	L.F.	0	70	70	70	0	0	0	70	70	70
607-G044	GATE, 10' X 8' CHAIN LINK	EACH	0	1	0	0	0	0	0	1	1	1
607-P1011	LINE POST, 12' X 2" GALVANIZED STEEL	EACH	0	3	3	3	0	0	0	3	3	3
607-P2012	BRACE POST, 12' X 2 1/2" GALVANIZED STEEL	EACH	0	3	3	3	0	0	0	3	3	3
607-P3010	GATE POST, 12' X 3 1/2" GALVANIZED STEEL	EACH	0	2	2	2	0	0	0	2	2	2
907-618-A001	MAINTENANCE OF TRAFFIC	L.S.	0	0	0	0	0	0	0	0	100%	277
619-D1001	STANDARD ROADSIDE CONSTRUCTION SIGNS, LESS THAN 10 SQUARE FEET	S.F.	0	0	0	0	0	0	0	277	277	277
619-D2001	STANDARD ROADSIDE CONSTRUCTION SIGNS, 10 SQUARE FEET OR MORE	S.F.	0	0	0	0	0	0	0	1831	1831	1831
619-D3001	REMOVE AND RESET SIGNS, ALL SIZES	EACH	0	0	0	0	0	0	0	2000	2000	2000
619-E1001	FLASHING ARROW PANEL, TYPE C	EACH	0	0	0	0	0	0	0	2	2	2
907-619-E3001	CHANGEABLE MESSAGE SIGN	EACH	0	0	0	0	0	0	0	2	2	2
619-G4001	BARRICADES, TYPE III, SINGLE FACED	L.F.	0	0	0	0	0	0	0	492	492	492
619-G5001	FREE STANDING PLASTIC DRUMS	EACH	0	0	0	0	0	0	0	120	120	120
619-G7001	WARNING LIGHTS, TYPE "B"	EACH	0	0	0	0	0	0	0	21	21	21
620-A001	MOBILIZATION	L.S.	0	0	0	0	0	0	0	100%	88	100%
630-F001	DELINEATORS, GUARD RAIL, WHITE	EACH	0	19	38	38	0	0	31	88	88	88
907-699-A002	ROADWAY CONSTRUCTION STAKES	L.S.	0	0	0	0	0	0	0	100%	100%	100%

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

ESTIMATED ROADWAY QUANTITIES

PROJ. NO. HSIP-0010-01(150)
JACKSON COUNTY

FILENAME: EQ-01.DGN
DESIGN TEAM: GSP CHECKED: _____ DATE: _____

WORKING NUMBER
EQ-5
SHEET NUMBER
12

	10/16/15	ADDED PAYITEMS, CHANGED PAYITEM NO.,	TTG	CHANGED QUANTITIES	TTG
	7/15/15	ADDED PAYITEMS, CHANGED PAYITEM NO.,	TTG	ADDED PAYITEMS, CHANGED QUANTITIES	TTG
		& DESC, CHANGED QUANTITIES		REVISION	
		BY			

ADDENDUM

STATE	MISS.	PROJECT NO.	HSIP-0010-01(150)
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PAY ITEM NO.	PAY ITEM	UNIT	EQ-6 ITS		EQ-7 ITS		EQ-8 ITS		EQ-9 ITS		PROJECT ITS	
			EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
907-630-I001	METAL OVERHEAD SIGN SUPPORTS, ASSEMBLY NO. 1, CONTRACTOR DESIGNED	L.S.	100%	0	0	0	0	0	0	0	100%	0
907-630-I002	METAL OVERHEAD SIGN SUPPORTS, ASSEMBLY NO. 2, CONTRACTOR DESIGNED	L.S.	100%	0	0	0	0	0	0	0	100%	0
907-630-M003	PEDESTAL SIGN SUPPORT, ASSEMBLY NO. 5, CONTRACTOR DESIGNED	L.S.	0	0	100%	0	100%	0	0	0	100%	0
907-630-M006	PEDESTAL SIGN SUPPORT, ASSEMBLY NO. 3, CONTRACTOR DESIGNED	L.S.	0	0	100%	0	100%	0	0	0	100%	0
907-630-M007	PEDESTAL SIGN SUPPORT, ASSEMBLY NO. 4, CONTRACTOR DESIGNED	L.S.	0	0	100%	0	100%	0	0	0	100%	0
907-630-M008	PEDESTAL SIGN SUPPORT, ASSEMBLY NO. 6, CONTRACTOR DESIGNED	L.S.	0	0	100%	0	100%	0	0	0	100%	0
907-630-M009	PEDESTAL SIGN SUPPORT, ASSEMBLY NO. 7, CONTRACTOR DESIGNED	L.S.	0	0	100%	0	100%	0	0	0	100%	0
907-630-Q003	POST SIGN SUPPORT ASSEMBLY NO. 10, CONTRACTOR DESIGNED	L.S.	0	0	0	0	0	0	100%	0	100%	0
907-630-Q004	POST SIGN SUPPORT ASSEMBLY NO. 8, CONTRACTOR DESIGNED	L.S.	0	0	0	0	0	0	100%	0	100%	0
907-630-Q007	POST SIGN SUPPORT ASSEMBLY NO. 9, CONTRACTOR DESIGNED	L.S.	0	0	0	0	0	0	100%	0	100%	0
907-630-O003	REMOVE AND RESET SIGN, ALL SIZES	EACH	0	1	3	0	3	0	0	0	4	0
907-637-A001	EQUIPMENT CABINET, TYPE B	EACH	9	8	9	0	9	0	4	0	30	0
907-637-A002	EQUIPMENT CABINET, TYPE C	EACH	1	0	3	0	3	0	0	0	4	0
907-637-A003	EQUIPMENT CABINET, TYPE A	EACH	4	0	0	0	0	0	0	0	4	0
907-637-B001	ITS EQUIPMENT CABINET MODIFICATIONS	EACH	4	5	7	4	7	4	4	0	20	0
907-639-B001	TRAFFIC SIGNAL EQUIPMENT POLE SHAFT EXTENSION, 10-FOOT, VIDEO CAMERA MOUNT	EACH	0	0	0	1	1	2	2	3	0	0
907-639-E001	CAMERA POLE WITH FOUNDATION, 50' POLE	EACH	9	6	7	0	7	0	24	0	0	0
907-639-E006	CAMERA POLE WITH FOUNDATION, 80' POLE	EACH	0	2	0	0	0	0	0	0	2	0
907-639-F001	DETECTOR POLE WITH FOUNDATION, 35' POLE	EACH	5	1	0	0	0	0	0	0	6	0
907-642-B002	SOLID STATE TRAFFIC ACTUATED CONTROLLER MODIFICATION, PER PLANS	EACH	3	2	6	3	6	3	14	0	0	0
647-A003	PULLBOX, TYPE 4	EACH	50	48	46	29	46	29	173	0	0	0
647-A004	PULLBOX, TYPE 5	EACH	35	39	37	21	37	21	132	0	0	0
647-A005	PULLBOX, TYPE 2	EACH	68	52	40	19	40	19	179	0	0	0
907-647-A006	PULL BOX, AERIAL SUPPORTED	EACH	0	33	5	0	5	0	38	0	0	0
907-648-D003	RADIO INTERCONNECT, BROADBAND, LONG RANGE	EACH	1	0	0	1	0	1	2	0	0	0
907-650-A003	ON STREET VIDEO EQUIPMENT, FIXED TYPE	EACH	22	24	18	4	18	4	68	0	0	0
907-650-A004	ON STREET VIDEO EQUIPMENT, PTZ TYPE	EACH	10	7	9	0	9	0	30	0	0	0
907-655-A001	ON-STREET VIDEO EQUIPMENT, HD PTZ TYPE	EACH	0	2	0	0	0	0	2	0	0	0
907-655-A001	HAR SIGN WITH FLASHING BEACONS - TYPE 1, AND TYPE 2	EACH	2	2	1	0	1	0	5	0	0	0
907-655-B001	HAR SIGN WITH FLASHING BEACONS - TYPE 1, AND TYPE 2	EACH	3	3	5	3	5	3	14	0	0	0
907-655-C001	HIGHWAY ADVISORY RADIO SYSTEM SOFTWARE AND SERVER	L.S.	0	0	0	0	0	0	0	0	100%	0
907-656-A001	DYNAMIC MESSAGE SIGN, TYPE 1	EACH	2	0	0	0	0	0	2	0	0	0
907-656-A002	DYNAMIC MESSAGE SIGN, TYPE 2	EACH	0	2	3	0	3	0	5	0	0	0
907-656-A004	DYNAMIC MESSAGE SIGN, TYPE 3	EACH	0	0	0	0	0	0	0	0	5	0
907-657-A001	FIBER OPTIC CABLE, 72 SM	L.F.	65600	42645	48705	40210	48705	40210	197160	0	0	0
907-657-A001	FIBER OPTIC CABLE, 72 SM, AERIAL SUPPORTED	L.F.	420	21605	3180	0	3180	0	25205	0	0	0
907-657-B001	FIBER OPTIC DROP CABLE, 12 SM	L.F.	4230	7325	5235	9255	5235	9255	26045	0	0	0
907-658-A005	NETWORK SWITCH, TYPE A	EACH	14	18	21	10	21	10	63	0	0	0
907-658-A006	NETWORK SWITCH, TYPE B	EACH	4	3	3	2	3	2	12	0	0	0
907-658-A007	NETWORK SWITCH, TYPE C	EACH	0	1	0	1	0	1	2	0	0	0
907-658-A009	NETWORK SWITCH, TYPE E	EACH	1	0	0	0	0	0	1	0	0	0
907-658-B001	TERMINAL SERVER	EACH	13	9	10	2	10	2	34	0	0	0
907-658-C001	CATEGORY 6 CABLE, INSTALLED IN CONDUIT	L.F.	1525	1325	1665	1405	1665	1405	5920	0	0	0
907-659-A001	TRAFFIC MANAGEMENT CENTER MODIFICATIONS	L.S.	0	0	0	0	0	0	100%	0	0	0
907-659-C001	TRAFFIC MANAGEMENT CENTER MODIFICATIONS - TRAINING	L.S.	0	0	0	0	0	0	100%	0	0	0
907-660-B002	COMMUNICATIONS HUT	EACH	0	1	0	1	0	1	2	0	0	0
907-661-D001	REST AREA VIDEO KIOSK	EACH	0	2	1	0	1	0	3	0	0	0
907-662-A002	VIDEO ENCODER	EACH	1	0	1	0	1	0	2	0	0	0
907-663-A001	CENTRAL MANAGEMENT SIGNAL CONTROL SOFTWARE	L.S.	0	0	0	0	0	0	100%	0	0	0
907-664-A002	ROADWAY WEATHER INFORMATION SYSTEM	EACH	0	2	0	0	0	0	2	0	0	0
907-664-B003	"FOG AHEAD" SIGN WITH FLASHING BEACONS	EACH	0	2	0	0	0	0	2	0	0	0
666-B028	ELECTRIC CABLE, UNDERGROUND IN CONDUIT, THHN, AWG #6, 3 CONDUCTOR	L.F.	11825	2395	5215	140	5215	140	19575	0	0	0
666-B038	ELECTRIC CABLE, UNDERGROUND IN CONDUIT, THHN, AWG #4, 3 CONDUCTOR	L.F.	15340	11430	195	15	195	15	26980	0	0	0
666-B040	ELECTRIC CABLE, UNDERGROUND IN CONDUIT, THHN, AWG #8, 3 CONDUCTOR	L.F.	135	365	0	0	0	0	500	0	0	0
666-B042	ELECTRIC CABLE, UNDERGROUND IN CONDUIT, THHN, AWG #1, 4 CONDUCTOR	L.F.	0	1640	0	380	0	380	2020	0	0	0
666-B046	ELECTRIC CABLE, UNDERGROUND IN CONDUIT, THHN, AWG #4, 4 CONDUCTOR	L.F.	0	2935	2020	145	2020	145	5100	0	0	0
666-B052	ELECTRIC CABLE, UNDERGROUND IN CONDUIT, THHN, AWG #6, 4 CONDUCTOR	L.F.	1420	435	2915	380	2915	380	5150	0	0	0
666-B058	ELECTRIC CABLE, UNDERGROUND IN CONDUIT, THHN, AWG #1, 3 CONDUCTOR	L.F.	15015	0	0	0	0	0	15015	0	0	0
666-B059	ELECTRIC CABLE, UNDERGROUND IN CONDUIT, THHN, AWG #3, 1 CONDUCTOR	L.F.	0	0	0	30	0	30	0	0	0	0
907-666-F001	GROUND MOUNTED TRANSFORMER ENCLOSURE	EACH	7	8	6	0	6	0	21	0	0	0
907-668-E001	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, ROLLED PIPE, 2"	L.F.	1100	2140	1740	7915	1740	7915	12895	0	0	0
907-668-E002	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, ROLLED PIPE, 2 @ 2"	L.F.	36160	30295	29925	10550	29925	10550	106930	0	0	0
907-668-E003	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, ROLLED PIPE, 3 @ 2"	L.F.	25895	10390	4995	840	4995	840	42120	0	0	0
907-668-E004	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, ROLLED PIPE, 5 @ 2"	L.F.	0	725	295	60	295	60	1080	0	0	0
907-668-F001	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, DRILLED OR JACKED, ROLLED PIPE, 2"	L.F.	0	125	0	0	0	0	125	0	0	0
907-668-F002	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, DRILLED OR JACKED, ROLLED PIPE, 2 @ 2"	L.F.	1295	1920	2080	2465	2080	2465	7760	0	0	0
907-668-F003	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, DRILLED OR JACKED, ROLLED PIPE, 3 @ 2"	L.F.	2070	2975	14280	6740	14280	6740	26065	0	0	0
907-668-F004	TRAFFIC SIGNAL CONDUIT BANK, UNDERGROUND, DRILLED OR JACKED, ROLLED PIPE, 5 @ 2"	L.F.	955	595	110	660	110	660	2320	0	0	0
907-668-G001	TRAFFIC SIGNAL CONDUIT BANK, AERIAL SUPPORTED, TYPE 1, 3 @ 2"	L.F.	420	0	0	100	0	100	150	0	0	0
907-668-G002	TRAFFIC SIGNAL CONDUIT BANK, AERIAL SUPPORTED, TYPE 1, 3 @ 2"	L.F.	0	21605	4430	0	4430	0	420	0	0	0
907-670-A001	ITS RADAR DETECTION SYSTEM	EACH	12	10	7	3	7	3	32	0	0	0
907-670-B001	ITS RDS COMM CABLE	L.F.	2245	0	0	0	0	0	2245	0	0	0
907-697-A001	BLUETOOTH DETECTION SYSTEM, TYPE A	EACH	7	6	6	3	6	3	22	0	0	0
907-697-C001	BLUETOOTH DETECTION SYSTEM SERVER LICENSING	EACH	7	6	6	3	6	3	22	0	0	0

10/16/15	CHANGED PAYITEM NO. & DESC.	TTC	BY
8/11/15	REMOVED PAYITEM 907-668-G, ADDED	TCS	
7/15/15	CHANGED PAYITEM NOS. & DESC.	TTC	
7/15/15	CHANGED QUANTITIES	TTC	
	REVISION	BY	

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ESTIMATED ITS QUANTITIES
 PROJ. NO. HSIP-0010-01(150)
 JACKSON COUNTY
 WORKING NUMBER EQ-10
 SHEET NUMBER 17
 FILENAME: EQ-01.DGN
 DESIGN TEAM GSP CHECKED DATE



ADDENDUM

ROAD CLOSURES

MOMENTARY STOPPING OF TRAFFIC ON THE INTERSTATE WILL BE PERMITTED DURING SIGN STRUCTURE INSTALLATIONS. THE FOLLOWING 'SPECIAL' SIGNS SHALL BE ERRECTED IN THE DIRECTION AFFECTED BY THESE OPERATIONS:

- "BE PREPARED TO STOP" PLACED ON THE INSIDE AND OUTSIDE SHOULDERS AT LOCATIONS IN ADVANCE OF STRUCTURE AS DIRECTED BY THE ENGINEER.
- "PERIODIC ROAD CLOSINGS (30 MIN. MAX) 00/00/00" PLACED ON THE INSIDE AND OUTSIDE SHOULDERS ONE HALF MILE IN ADVANCE OF STRUCTURE, ONE WEEK PRIOR TO THE WORK.
- PORTABLE CHANGEABLE MESSAGE SIGNS SHALL ALSO BE USED AS DIRECTED BY THE ENGINEER. IN ADDITION, THE FOLLOWING 'STANDARD SIGNS' SHALL BE ERRECTED IN THE DIRECTION AFFECTED BY THESE OPERATIONS:
 - DUAL "W21-4 (48" X 48") SIGNS WITH "BE PREPARED TO STOP" (36" X 24") PLAQUE AND TYPE B HIGH INTENSITY FLASHING WARNING LIGHT ARE TO BE LOCATED, INITIALLY, ONE MILE PRIOR TO LOCATION OF CLOSURE. LOCATION SHALL BE MOVED BACK AS REQUIRED BY THE QUEUEING OF STOPPED VEHICLES.
 - DUAL "W3-10 (48" X 48") SIGNS WITH "W3-1P (24" X 18") PLAQUE AND TYPE B HIGH INTENSITY FLASHING WARNING LIGHT ARE TO BE LOCATED, INITIALLY, ONE HALF MILE PRIOR TO LOCATION OF CLOSURE. LOCATION SHALL BE MOVED BACK AS REQUIRED BY THE QUEUEING OF STOPPED VEHICLES.
 - DUAL "R1-1 (48" X 48") SIGNS AT LOCATION 50 FEET PRIOR TO LOCATION OF CLOSURE.

TWO (2) UNIFORM POLICE OFFICERS WITH MARKED POLICE CARS SHALL BE PRESENT DURING THESE ACTIVITIES TO GRADUALLY SLOW TRAFFIC TO A STOP; THE FIRST ONE MAY BE LOCATED ADJACENT TO THE DUAL "W21-4 (48" X 48") SIGNS AND THE SECOND MAY BE LOCATED BETWEEN THE DUAL "R1-1 (48" X 48") SIGNS AND THE WORK AREA. ADDITIONAL OFFICERS SHALL BE IN POSITION TO HALT TRAFFIC AT RAMP INTERSECTIONS WHEN NECESSARY. CLOSURES SHALL BE LIMITED TO 30 MINUTE MAXIMUM PERIODS WITHIN ANY ONE HOUR PERIOD ON A WEEKEND NIGHT BETWEEN 11:00 PM AND 5:00 AM, OR ON SUNDAY MORNINGS UP UNTIL 9:00 AM. THE NECESSARY LIGHTING FOR NIGHTTIME WORK SHALL BE INCLUDED IN THE LUMP SUM BID ITEM FOR MAINTENANCE OF TRAFFIC. PAYMENT FOR UNIFORM OFFICERS DURING TOTAL ROAD CLOSURES SHALL ALSO BE INCLUDED IN LUMP SUM BID ITEM FOR MAINTENANCE OF TRAFFIC.

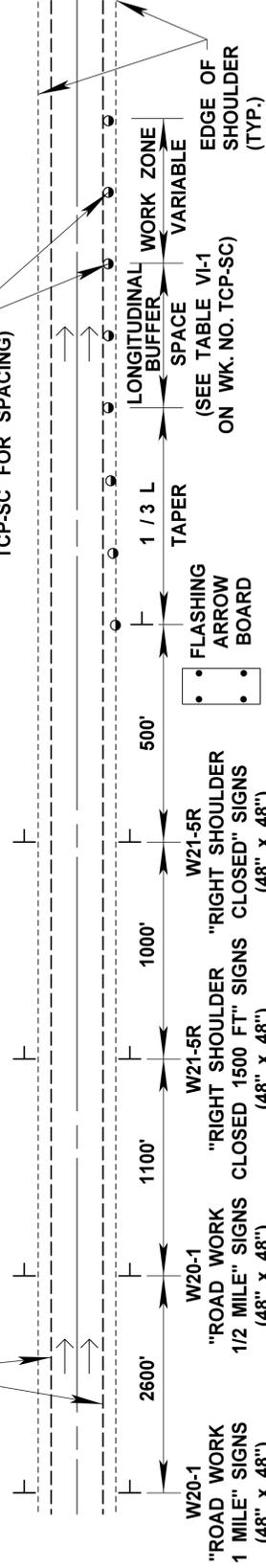
LANE CLOSURES

LANE CLOSURES WILL BE ALLOWED WHENEVER ENCRoACHMENT INTO THE TRAVEL LANE (I.e., WITHIN TWO FEET OF TRAVEL LANE) IS NECESSARY. LANE CLOSURES SHALL BE IMPLEMENTED IN ACCORDANCE WITH THE APPROPRIATE STANDARD DRAWING OR MUTCD DETAIL.

- LANES OF INTERSTATE MAY ONLY BE CLOSED BETWEEN 7:00 P.M. - 5:00 A.M. SUNDAY THRU THURSDAY. LANES OF INTERSTATE MAY NOT BE CLOSED BETWEEN 5:00 A.M. FRIDAY MORNING AND 7:00 P.M. SUNDAY EVENING.
- THE CONTRACTOR SHALL NOT BE ALLOWED TO INTERRUPT TRAFFIC FLOW ON ANY INTERSTATE AND SHALL MAINTAIN THE EXISTING NUMBER OF LANES OF TRAFFIC IN EACH DIRECTION ON THE FOLLOWING DATES:
 - OFFICIAL STATE HOLIDAYS
 - 5:00 A.M. FRIDAY UNTIL 7:00 P.M. TUESDAY IF A STATE HOLIDAY OCCURS OR IS OBSERVED ON MONDAY
 - 5:00 A.M. THURSDAY UNTIL 7:00 P.M. MONDAY IF A HOLIDAY IS OBSERVED ON FRIDAY
 - OTHER "SPECIAL EVENT" DAYS AS DIRECTED BY THE ENGINEER
- ALL LANE CLOSURES SHALL BE APPROVED BY THE ENGINEER.

TRAFFIC CONTROL PLAN (CONT'D.)

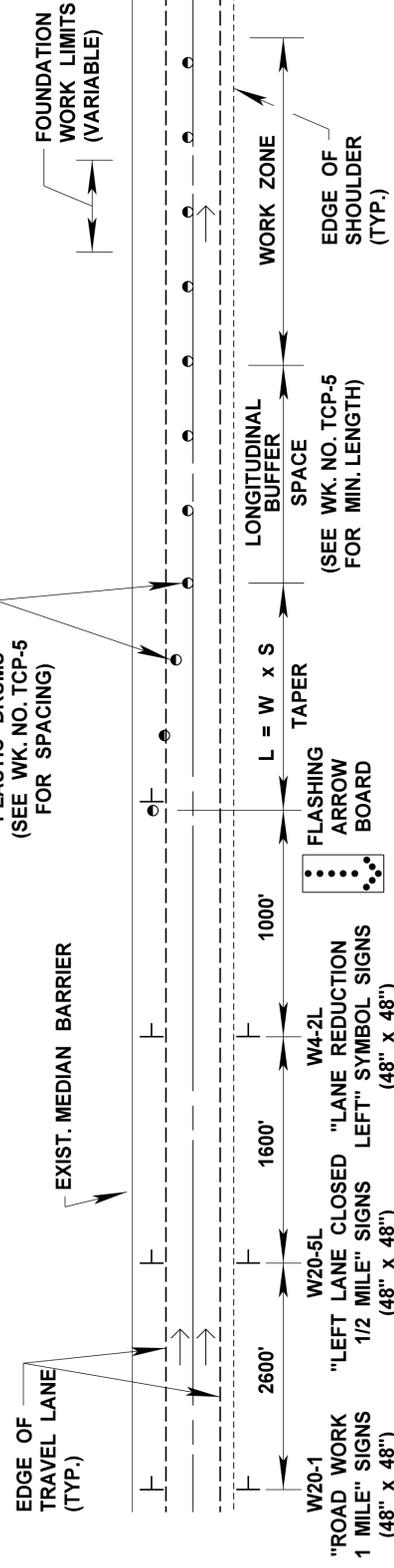
NOTE: FOR LEFT SHOULDER CLOSURES, USE SIGNS W21-5L (LEFT SHOULDER CLOSED 1500 FT AND LEFT SHOULDER CLOSED)



TRAFFIC CONTROL PLAN - TYPICAL ADVANCE SIGNING FOR WORK WITHIN 30' OF TRAVELED WAY

NOTE:

FOR VERY SHORT-TERM SHOULDER CLOSURES (LESS THAN 30 MINUTES), THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A PROPOSED TRAFFIC CONTROL PLAN THAT MEETS MUTCD AND MDOT REQUIREMENTS.



TRAFFIC CONTROL PLAN - FOUNDATION WORK IN MEDIAN AT OVERHEAD DMS INSTALLATIONS

NOTES:

- SEE WK. NO. TCP-5 (MDOT STD. DWG.) FOR ADDITIONAL LANE CLOSURE DETAILS AND REQUIREMENTS.
- INSIDE LANE CLOSURES IN EACH DIRECTION MAY BE REQUIRED DURING FOUNDATION WORK IN MEDIAN.
- CONTRACTOR SHALL REPLACE SIGNING IF AND WHEN THE LANE CLOSURE IS CONVERTED TO A SHOULDER CLOSURE AS INDICATED IN THE NOTES ON THE LEFT OF THIS SHEET.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION	
ITS TRAFFIC CONTROL PLAN	
NOTES AND PLAN	
PROJ. NO HSIP-0010-01(150)	
JACKSON COUNTY	
WORKING NUMBER	TC-2
FILENAME: TC-02.DGN	SHEET NUMBER
DESIGN TEAM GS&P	CHECKED
DATE	DATE
10/16/15	10/16/15
REVISION	REVISION
BY	BY
TG	TG

