

SECTION 905 -- PROPOSAL (CONTINUED)

I (We) further propose to execute the attached contract agreement (Section 902) as soon as the work is awarded to me (us), and to begin and complete the work within the time limit(s) provided for in the Specifications and Advertisement. I (We) also propose to execute the attached contract bond (Section 903) in an amount not less than one hundred (100) percent of the total of my (our) part, but also to guarantee the excellence of both workmanship and materials until the work is finally accepted.

I (We) enclose a certified check, cashier's check or bid bond for **five percent (5%) of total bid** and hereby agree that in case of my (our) failure to execute the contract and furnish bond within Ten (10) days after notice of award, the amount of this check (bid bond) will be forfeited to the State of Mississippi as liquidated damages arising out of my (our) failure to execute the contract as proposed. It is understood that in case I am (we are) not awarded the work, the check will be returned as provided in the Specifications.

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 3/19/2012 ADDENDUM NO. _____ DATED _____
 ADDENDUM NO. _____ DATED _____ ADDENDUM NO. _____ DATED _____

Number	Description
1	Table of Contents, replace same; Add NTB 3839; SP 907-657-6, replaces SP 907-657-4; Revised Bidsheets, replace same; Revised or Added Plan Sheet Nos. 2 & 6; Amendment EBS Download Required.

TOTAL ADDENDA: 1
 (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 09/21/2005

SP-0250-00(001) 106330301 Hinds County(ies)

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

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

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

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 3839

CODE: (SP)

DATE: 03/14/2012

SUBJECT: Relocation of Existing Fiber Optic Cable

PROJECT: SP-0250-00(001) 106330301 -- Hinds County

Bidders are hereby notified that existing fiber optic cable belonging to Mississippi Department of Information Technology Services (ITS) located from approximately STA 17+46 to STA 20+87 will be need to be lowered to the specified depth indicated on the attached detail. Compensation for this pathway modification will be as directed in Special Provision 907-657-6.

Bidders are further notified that a representative from ITS and MDOT will need to notified at least 24 hours in advance of the relocation and be onsite during the operation. Should MDOT observe construction activities that it believes could potentially cause damage to the fiber optic pathways, the Contractor shall be directed to temporarily halt the activity so the procedure can be modified. The Contractor shall be responsible for any damage and repair costs to the lines caused by their means and methods used in relocating these lines. In the event a line is damaged, ITS shall have to approve repair plans and procedures or may elect to repair the line with their own forces and assess repair cost to the Contractor.

The following is the primary contact information for this coordination:

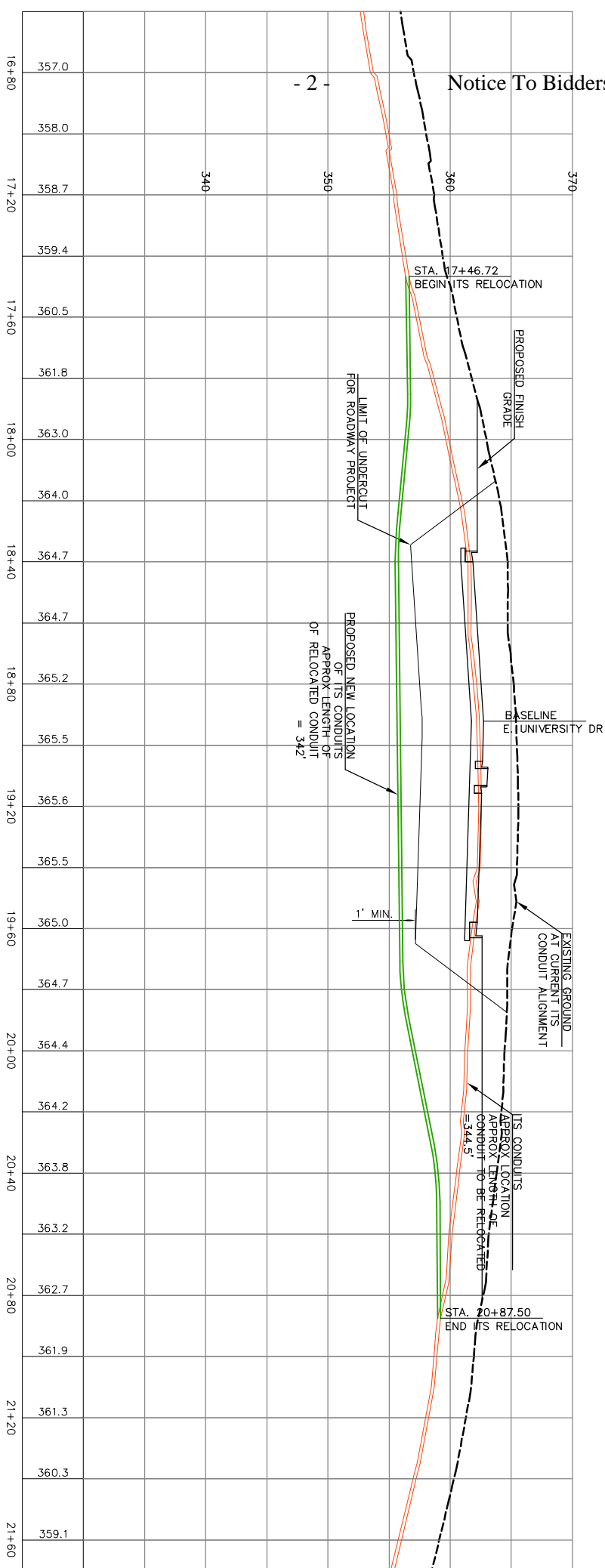
Jeff Jennings – ITS

601-359-2381

jeff.jennings@its.ms.gov

Emergency calls should be directed to the State's Network Operations Center at **601-432-8080**

Notice To Bidders No.3839 -- Cont'd.



SP-0250-00(001)
 UMMC-LAKELAND DR. SIGNAL AND WIDENING
 ITS FIBER OPTIC CABLE RELOCATION
 3-1-2012

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO SPECIAL PROVISION NO. 907-657-6

DATE: 03/14/2012

SUBJECT: Relocation of Existing Fiber Optic Cable

After the first paragraph of Subsection 907-657.01 on page 1, add the following:

This work also includes the relocation of existing fiber optic cable(s) in accordance with this specification, the plans, and Notice To Bidders entitled "Relocation of Existing Fiber Optic Cable".

Delete the third paragraph of Subsection 907-657.04 on page 18 and substitute the following.

Relocation of existing fiber optic cable will be measured by the linear foot of cable relocated.

The cost for all fiber optic work, equipment and testing shall be included in the bid price for pay items 907-657-A, 907-657-B, and 907-657-D.

After the last pay item listed on page 19, add the following.

907-657-D: Relocation of Existing Fiber Optic Cable - per linear foot

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-657-6

CODE: (SP)

DATE: 06/30/2011

SUBJECT: Fiber Optic Cable (OSP)

Section 657, Fiber Optic Cable (OSP), of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows:

Delete in total Section 657 beginning on page 541, and substitute the following:

SECTION 907-657 -- FIBER OPTIC CABLE (OSP)

907-657.01--Description. The work shall consist of the construction of the infrastructure required to install fiber optic cable. The infrastructure shall include all necessary conduits, pull boxes, pole line hardware, building entries, risers and fiber cable to make a complete system.

907-657.02--Materials.

907-657.02.1--Single Mode Fiber Optic Cable (FO Cable). The Contractor shall provide 72-count fiber optic cable that meets the following requirements:

- All-dielectric, outside plant, loose tube cable with central strength/anti-buckling member
- Dry water blocking materials and construction
- Reverse oscillating “SZ” stranded buffer tube construction
- High tensile strength yarn
- Medium density polyethylene outer jacket
- 72-fiber cable with six (6) active buffer tubes and 12 individual stranded fibers per buffer tube
- Cable construction design that allows no more than six (6) buffer tube positions
- Maximum diameter 0.48 inches
- Maximum weight 0.07 pounds per foot.

The Contractor shall provide a Corning ALTOS All-Dielectric, Pirelli FlexLink, OFS MiDia, or approved equivalent cable. This cable shall be designated as a trunk cable.

The Contractor shall ensure that the cable can withstand a maximum pulling tension of 600 pounds (lbf) during installation and 180 pounds (lbf) installed long term (at rest).

The cable shall have a shipping, storage and operating temperature range of -30°C to +70°C and installation temperature range of -30°C to +60°C.

The Contractor shall provide cable with outer jacket marking using the following template:

Manufacturer's Name - "Optical Cable" - Month/Year of Manufacture - Telephone Handset Symbol - "MDOT" - "72F SM"

The Contractor shall include in the outer jacket marking the cable sequential length in accordance with the following:

- In English units every two (2) feet
- Within -0/+1% of the actual length of the cable
- In contrasting color to the cable jacket
- Marking font height no less than 0.10 inch
- On any single length of cable on a reel, the sequential length markings do not run through "00000"

907-657.02.2--Single Mode Fiber Optic Cable Indoor/Outdoor Riser Rated. The Contractor shall provide fiber optic plenum rated cable that meets the following requirements when called for on the Plans:

- All-dielectric, inside plant, loose tube central core cable
- High tensile strength yarn surrounding the central tube core
- Dry water blocking materials and construction
- 72-fiber cable with six (6) active buffer tubes and 12 individual stranded fibers per buffer tube
- Corning Freedom LST All-Dielectric, Pirelli CentraLink, or approved equivalent cables shall be provided. This cable shall be designated as the building entry cable.

The Contractor shall ensure that the cable can withstand a maximum pulling tension of 300 pounds (lbf) during installation.

The cable shall have a shipping, storage and operating temperature range of -30°C to +70°C and an installation temperature range of -10°C to +60°C shall be provided.

The Contractor shall provide cable with outer jacket marking using the following template:

Manufacturer's Name - "Optical Cable" - Month/Year of Manufacture - Telephone Handset Symbol - "MDOT" - "72F SM"

The Contractor shall include in the outer jacket marking the cable sequential length in accordance with the following:

- English units every two (2) feet.
- Within -0/+1% of the actual length of the cable
- Contrasting color to the cable jacket
- Marking font height no less than 0.10 inch
- The sequential length markings do not run through "00000" on any single length of cable on a reel

907-657.02.3--Single Mode Fiber Optic Drop Cable (FO Drop Cable). The Contractor shall provide 12-Fiber, Pre-Terminated Drop Cable Assemblies. These assemblies shall be employed when connecting a camera, traffic controller, DMS or other device to the main cable.

Assemblies shall be factory assembled and terminated on one end with ceramic ferrule, LC compatible, heat cured epoxy connectors with an operational temperature of -40°C to +70°C. Each connector shall have a minimum of a 1-inch strain relief boot.

Insertion loss for each connector shall not exceed 0.30 dB.

Return loss for single mode connectors shall be greater than 45 dB.

Each assembly shall be fully tested and those test results placed on a test tag for each assembly.

Each assembly shall be individually packaged within a box or reel, with the submitted manufacturer's part number marked on the outside of the package.

Individual 250-µm coated fibers shall be up-jacketed to 1/8-inch using fan-out tubing. This tubing shall contain a 900-µm Teflon inner tube, aramid yarn strength members and an outer jacket.

The fan-out tubing shall be secured to the cable in a hard epoxy plug transition. Length of the individual legs shall be a minimum of three feet with the length difference between the shortest and longest legs of the assembly being no more than two inches.

The 12-Fiber, Pre-terminated Drop Cable Assemblies provided shall meet the following minimum requirements:

- All-dielectric, outside plant, loose tube central core cable shall be used
- High tensile strength yarn surrounding the central tube core
- Dry water blocking materials and construction
- Twelve (12) individual stranded fibers contained within the central tube core
- Corning Freedom LST All-Dielectric, Pirelli Centralink, or approved equivalent cables shall be used. This cable shall be designated as the drop cable

The Contractor shall ensure that the cable can withstand a maximum pulling tension of 300 pounds (lbf) during installation.

The cable shall have a shipping, storage and operating temperature range of -30°C to +70°C and an installation temperature range of -10°C to +60°C.

The Contractor shall provide cable with outer jacket marking using the following template:

Manufacturer's Name - "Optical Cable" - Month/Year of Manufacture - Telephone Handset Symbol - "MDOT" - "12F SM"

The Contractor shall include in the outer jacket marking the cable sequential length in

accordance with the following:

- English units every two (2) feet
- Within -0/+1% of the actual length of the cable
- Contrasting color to the cable jacket
- Marking font height no less than 0.10 inch
- The sequential length markings do not run through “00000” on any single length of cable on a reel

907-657.02.4--Plenum Rated Nonmetallic Corrugated Raceway. The Contractor shall provide plenum rated nonmetallic corrugated raceway inside buildings when cable is not in rigid conduit when called for on the plans.

The installation shall conform to NEC articles 770 and 800.

Raceway shall meet UL Standards 910 and 2024.

The Contractor shall provide 2-inch diameter raceway unless larger is called for in the plans.

The Contractor shall provide Fiber Optic Fusion Splice (FO Splice Fusion) for splicing of all fibers with a fully automatic portable fusion splicer that provides consistent low loss (max 0.10 dB) splices.

SPLICER shall provide three-axis fiber core alignment using light injection and loss measurement techniques.

The fusing process shall be automatically controlled.

The splicer shall provide splice loss measurements on an integral display, as well as a magnified image of the fiber alignment.

The Contractor shall retain ownership of the fusion splicer.

907-657.02.5--Fiber Optic Connectors. The Contractor shall provide fiber optic connectors for all fiber optic infrastructures including but not limited to fiber optic termination cabinets, fiber optic drop panels, and fiber optic patch cords.

The Contractor shall provide only factory-installed keyed LC compatible connectors for all fiber optic infrastructures.

Field-installed connectors shall not be used.

Adapter couplers shall not be used to change connector types.

Ceramic ferrule connectors, factory-installed, with a thermal-set heat-cured epoxy and machine polished mating face shall be used.

Connectors shall be installed as per manufacturer application and recommendations, including proper termination to the outer-tubing (900-micron tubing, 3-mm fan out tubing, etc.) required for the application.

Connectors rated for an operating temperature of -40°C to +75 °C shall be used.

Simplex connectors for all male LC connectors shall be used and a latching cover for two male connectors being used in a duplex configuration shall be provided. Female couplers may be duplex but must allow simplex mating connectors.

Dust caps shall be provided for all exposed male connectors and female couplers at all times until permanent connector installation.

907-657.02.6--Fiber Optic Termination Cabinet (FO Termination Cabinet). Fiber optic termination cabinets shall be provided in communications hubs, field junctions, and the MDOT Traffic Management Center (TMC) as shown in the Plans for termination of 72-fiber outside plant (OSP) cable.

The Contractor shall provide wall/shelf mount 12-fiber distribution cabinet equipped with fiber optic connector modules in a 12-fiber configuration. These will be used in field equipment and communication cabinet locations.

Termination cabinets with cable management features included shall be provided.

The Contractor shall use termination cabinets that are fully compatible with all components of the fiber optic infrastructure as specified, including, but not limited to, fiber optic cable, fiber optic fusion splices and fiber optic connectors.

The Contractor shall provide rack-mount termination cabinets designed to fit standard 19-inch EIA equipment racks.

The Contractor shall provide all mounting hardware and supports to mount the termination cabinets in the locations shown in the Plans.

The Contractor shall provide fiber optic termination cabinets providing 72-fiber connectors and capable of storing 72 fusion splices in splice trays.

The Contractor shall provide termination cabinets that integrate the splice trays and connector modules into one compartment within one cabinet, or houses the splice trays and connector modules in separate compartments integrated into one cabinet.

The maximum dimensions of a complete termination cabinet shall be 7-rack units, 12.25 inches high by 16 inches deep.

Fiber optic termination cabinets shall be fully enclosed metallic construction with a protective hinged front cover for the connector ports.

The cabinet shall have cable access on all sides of the enclosed area behind the connector port panel.

The Contractor shall provide sufficient splice trays for storing 72 fusion splices in 12 or 24-splice increments.

The Contractor shall provide termination cabinets with fiber optic connector modules in a 12 fiber configuration of six (6) rows of one (1) duplex connector couplers. Connector modules shall mount vertically in the termination cabinet front panel.

Connector modules shall include clearly legible and permanent labeling of each of the 12 fiber connector couplers, and shall be labeled and identified as shown in the Plans.

The Contractor shall provide factory-assembled 12-fiber termination interconnect cables (pigtail cables) to be fusion spliced to the outside plant or indoor cable and connected to the rear of the connector modules.

Termination interconnect cables shall be all-dielectric, single jacketed cable with high tensile strength yarn surrounding 12 individual 900-micron fibers following EIA/TIA-598B color identification with factory-installed connectors.

The Contractor shall provide all incidental and ancillary materials including but not limited to grommets, cable strain relief and routing hardware, blank connector panels and labeling materials.

The cable shall be new (unused) and of current design and manufacture.

907-657.02.7--OSP Closures for Aerial, Pole Mount, Pedestal and Hand Hold Environments. OSP closures for aerial, pole mount, pedestal and hand hold shall be capable of accepting up to eight cables. The closures shall be capable of storing up to eight 90-inch lengths of expressed buffer tubes and up to 96 splices.

Assembly shall be accomplished without power supplies, torches, drill kits or any special tools. Re-entry shall require no additional materials.

Sealing shall be accomplished by enclosing the splices in a polypropylene case that is clamped together with a stainless steel latch and sealed with an O-ring.

Closure shall be capable of strand mounting with the addition of a strand mounting bracket.

Splice case shall be non-filled, non-encapsulate to prevent water intrusion, and shall allow re-entry without any special tools.

The closure shall be capable of preventing a 10-foot water head from intruding into the splice compartment for a period of seven (7) days.

It is the responsibility of the Contractor to ensure that the water immersion test has been

performed by the manufacturer or an independent testing laboratory, and the appropriate documentation has been submitted to the Engineer.

907-657.02.8--OSP Closures for Drop Cable Splice Points. OSP closures for aerial, pole mount, pedestal and hand hold shall be capable of accepting the trunk cable and two drop cables. The closures shall be capable of storing up to eight 90-inch lengths of expressed buffer tubes and up to 48 splices.

Assembly shall be accomplished without power supplies, torches, drill kits or any special tools. Re-entry shall require no additional materials.

Sealing shall be accomplished by enclosing the splices in a polypropylene case that is clamped together with a stainless steel latch and sealed with an O-ring.

Closure shall be capable of strand mounting with the addition of a strand mounting bracket.

Splice case shall be non-filled, non-encapsulate to prevent water intrusion, and shall allow re-entry without any special tools.

The closure shall be capable of preventing a 10-foot water head from intruding into the splice compartment for a period of seven days.

It is the responsibility of the Contractor to ensure that the water immersion test has been performed by the manufacturer or an independent testing laboratory, and the appropriate documentation has been submitted to the Engineer.

907-657.02.9--Patch Cords and Jumper Cables. Any patch cords or jumper cables required to connect the new fiber and equipment at existing locations shall be considered incidental and shall be included in the cost of pay items 907-657-A and 907-657-B.

Any patch cords used for system configuration shall be compatible with fiber types and connectors specified herein.

Single-mode patch cords shall be yellow in color.

Jacketing material shall conform to the appropriate NEC requirement for the environment in which installed.

All cordage shall incorporate a 900- μ m buffered fiber, aramid yarn strength members and an outer jacket.

Patch cords may be simplex or duplex, depending on the application.

Attenuation shall be less than 1.0 dB/km @ 1310 nm, 0.75 dB/km @ 1550 and have a total attenuation of less than .5 dB.

The contractor shall be responsible to determine and provide attenuators with the proper

attenuation to not exceed the optical budgets of the equipment connected by patch cables.

907-657.02.10 Cable Labels. The Contractor shall provide cable labels that meet the following requirements:

- Self-coiling wrap-around type
- PVC or equivalent plastic material with UV and fungus inhibitors
- Base materials and graphics/printing inks/materials designed for underground outside plant use including solvent resistance, abrasion resistance and water absorption
- Minimum size of 2.5 inches wide by 2.5 inches long
- Minimum thickness of 0.010 inches
- Orange label body with pre-printed text in bold black block-style font with minimum text height of 0.375 inches
- The Contractor shall pre-print the following text legibly on labels used for all fiber optic trunk cables:

Caution Fiber Optic Cable Mississippi Department of Transportation (601) 359-1454

- The Contractor shall pre-print the following text legibly on labels used on all fiber optic drop cables (FO Drop Cable):

Caution Fiber Optic Drop Cable Mississippi Department of Transportation (601) 359-1454

- On all cable labels, the Contractor shall print the text specified above twice on the label with the text of the second image inverted. The end result shall be text which “reads correctly” when the label is coiled onto a cable.

907-657.02.11--Cable Markers. The Contractor shall provide low profile soil cable markers which meet the following requirements:

- 3.5 inches in diameter
- UV stabilized for Maximum fade resistance
- Durable and abrasion resistant
- Lawn mower resistant
- Orange in color
- Printed Legend:

Fiber Optic Cable
Mississippi Department of Transportation
Traffic Engineering Division (601)359-1454

The Contractor shall install cable markers with a 13-inch nylon stake every 500 feet along the fiber run.

907-657.02.12--Conduit Detection Wire. Conduit detection wire shall be #10 AWG stranded copper, orange-insulated, THHN -THWN conductor.

The Contractor shall furnish and install a detection wire surge protection system. The Contractor shall ensure that detection wires are attached to a surge protection system designed to dissipate high transient voltages or other electrical surges.

The Contractor shall ensure that the detection wire surge protection system is grounded to a driven rod within 10 feet of the system using AWG #6 single conductor wire. Grounding must be done through a stand alone system not connected to power or ITS device grounding.

The Contractor shall ensure that the surge protection system normally allows signals generated by locate system to pass through the protection system without going to ground.

907-657.02.13--Project Submittal Program Requirements. The Contractor shall provide project submittals for all fiber optic infrastructures. The project submittals for fiber optic infrastructure shall include all items in this provision and any additional requirements included in any Notice to Bidders.

The Contractor shall provide project submittals including manufacturer recommended operations, maintenance and calibration procedures for the following equipment:

- Fiber optic installation and testing tools
- Fusion splicers
- Cable pulling strain dynamometers and breakaway links
- Cable air jetting/blowing systems
- OTDRs
- Optical attenuation testers (light sources and power meters)

The Contractor shall submit documentation and proof of manufacturer recommended operator training and certification for the following equipment:

- Fusion splicers
- Cable air jetting/blowing systems
- OTDRs
- Optical attenuation testers (light sources and power meters)

907-657.03--Installation Requirements. All equipment shall be installed according to the manufacturer's recommendations, the Plans and as follows.

907-657.03.1—General Requirements.

- a) The Contractor shall install all fiber optic infrastructures according to the manufacturer's recommended procedures and specifications.
- b) The Contractor shall provide all necessary interconnections, services and adjustments required for a complete and operable data transmission system.

- c) The Contractor shall install all fiber truck, drop, and patch cables such that attenuation shall be less than 1.0 dB/km @ 1310 nm, 0.75 dB/km @ 1550.
- d) All pole attachments, service loops and conduit risers shall be placed to minimize the possibility of damage as well as to facilitate future expansion or modernization.
- e) The cable shall be installed in continuous runs as indicated on the plans. Splices shall be allowed only at drop points or reel end points specified in the plans.
- f) At drop locations only, those fibers necessary to complete the communication path shall be spliced. Other fibers in the cable(s) shall be left undisturbed, with a minimum of five feet of buffer tube coiled inside the closure.
- g) Sufficient slack shall be left at each drop point to enable access of the cable components and splicing to occur on the ground. This is typical two times the pole height plus 15 feet.
- h) For aerial installations, the following minimum slack requirements shall apply:
 - For aerial slack storage at splice points, a radius controlling device, commonly referred to as a SNO-SHOE, shall be used for securing resulting cable slack at aerial splice points and shall be mounted directly to the strand.
 - For aerial cable runs exceeding 6-pole spans between splice points as indicated on the plans, two opposing SNO-SHOES shall be placed on the span 50 feet apart to provide for a 100-foot service loop for future drops and for slack for repair and pole relocations.
- i) Drop cable shall be routed to the controller cabinets via conduit risers as illustrated in the plans. The cable entrance shall be sealed with a duct plug designed for fiber optic cable to prevent water ingress.
- j) The minimum requirement for fiber protection outside a fiber optic enclosure in ALL cases shall be 1/8-inch fan-out tubing, containing a hollow 900- μ m tube, aramid strength members and an outer jacket, and shall be secured to the cable sheath.
- k) The minimum requirement for fiber protection inside wall mount or rack mount fiber enclosure shall be 900- μ m buffering, intrinsic to the cable in the case of tight buffered fibers, or in the case of 250- μ m coated fibers, a fan-out body and 900- μ m tubing secured to the buffer tube(s).
- l) During installation, even if the tension specifications for the cable are not exceeded, the first ten feet shall be discarded.
- m) Warning tape shall be placed 12 inches above the cable not to deviate \pm 18 inches from the centerline of the optical cable. Warning tape shall be at least two inches wide and colored orange.

907-657.03.2--Cable Shipping and Delivery. The cable shall be packaged on reels for shipment. Each package shall contain only one continuous length of cable. The packaging shall be constructed as to prevent damage to the cable during shipping and handling.

Both ends of the cable shall be sealed to prevent the ingress of moisture.

A weatherproof reel tag shall be attached to each reel identifying the reel and cable so that it can be used by the manufacturer to trace the manufacturing history of the cable and the fiber. A cable data sheet shall be included with each reel containing the following information:

- Manufacturer name
- Cable part number
- Factory order number

- Cable length.
- Factory measured attenuation of each fiber

The Contractor shall cover the cable with a protective and thermal wrap.

The outer end of the cable shall be securely fastened to the reel head so as to prevent the cable from becoming loose in transit. The inner end of the cable shall be projected a minimum of 6.5 feet into a slot in the side of the reel, or into housing on the inner slot of the drum, in such a manner as to make it available for testing.

Each reel shall be plainly marked to indicate the direction in which it is to be rolled to prevent loosening of the cable on the reel.

907-657.03.3--Cable Handling and Installation. The Contractor shall not exceed the maximum recommended pulling tension during installation as specified by the cable manufacturer.

The Contractor shall continuously monitor pulling tensions with calibrated measuring devices, such as a strain dynamometer.

The Contractor shall ensure that the minimum depth of the cable is a minimum of 36 inches unless shown otherwise in plans.

All pulled installations shall be protected with calibrated breakaway links.

The Contractor shall ensure that the minimum recommended bend radius is not exceeded during installation as specified by the cable manufacturer. Unless the manufacturer's recommendations are more stringent, the following guidelines shall be used for minimum bend radius:

- 20 X Cable Diameter Short Term - During Installation
- 10 X Cable Diameter Long Term - Installed

Before cable installation, the cable reels and reel stands shall be carefully inspected for imperfections or faults such as nails that might cause damage to the cable as it is unreeled.

All necessary precautions shall be taken to protect reeled cable from vandals or other sources of possible damage while unattended. Any damage to reeled cable or the reel itself shall necessitate replacement of the entire cable section at no additional cost to the State.

Whenever unreeled cable is placed on the pavement or surface above a pull box, the Contractor shall provide means of preventing vehicular or pedestrian traffic through the area in accordance with the safe maintenance of traffic provisions.

The cable shall be kept continuous throughout the pull. Cable breaks and reel end splices are permitted only in Type 5 pull boxes and occur at a minimum of 10,000 feet.

Where a cable ends in an underground fiber optic closure, all unused fibers and buffer tubes shall

be secured and stored in splice trays in preparation for future reel end splicing and continuation.

907-657.03.4--Cable Storage. The Contractor shall properly store all cable to minimize susceptibility to damage. The proper bend radius shall be maintained, both short and long term, during cable storage.

Storage coils shall be neat in even length coils, with no cross over or tangling.

Storage coils of different cables shall be kept completely separate except when the cables terminate in the same splice closure.

Storage coils shall be secured to cable racking hardware with tie wraps, Velcro straps, or non-metallic cable straps with locking/buckling mechanism. No adhesive or self-adhering tapes, metal wires and straps, or rope/cord shall be used to secure coils.

Unless otherwise noted on the plans, the following are the requirements for cable storage for underground applications:

- Trunk cable in Type 4 pull box 25 feet
- Trunk cable in Type 5 pull box 200 feet
- Drop cable in Type 4 pull box 10 feet
- Drop cable in Type 5 pull box, not terminated in a splice closure 10 feet
- Drop cable in Type 5 pull box, terminated in a splice closure with the trunk cable 100 feet
- Trunk cable end in Type 5 pull box 200 feet
- Drop cable terminated in same splice closure as trunk cable end 200 feet

The Contractor shall label each pull box with a numbered disk obtained from the traffic engineering department. The disk shall be installed in accordance with the manufactures specification on the lid of each pull box. Numbers shall be noted on the As-Built plans for each pull box.

No slack cable shall be stored inside the communications hub building or Control Center.

907-657.03.5--Cable Labels. Cable labels shall be installed on all trunk and drop fiber optic cables. The installed cable shall be cleaned of all dirt and grease before applying any label.

The Contractor shall label all cables in or at every location where the cable is exposed outside of a conduit, innerduct or pole using the cable IDs for trunk cables or the device number for drop cables.

As a minimum, cable labels shall be installed in the following locations:

- Within 12 inches of every cable entry to a pull box, equipment cabinet, communications hub, or the TMC
- Within 12 inches of the exterior entry point of every fiber optic splice closure,

termination cabinet and drop panel

- Every 30 feet for the entire length of cable in any storage coil in pull boxes
- Within one (1) foot of every pole attachment
- On every riser
- On every splice enclosure

907-657.03.6--Conduit Detection Wire. The Contractor shall install one conduit detection wire in all conduit banks. Conduit detection wire is required in all conduit banks installed by any installation method, including trenching, directional boring or plowing.

Only one conduit detection wire is required per installed conduit bank regardless of the number of conduits installed in that segment. Conduit detection wire shall be installed inside the conduit.

Conduit detection wire is not required for structure mounted conduit, except where underground segments of structure mounted conduit are greater than 20 feet in length.

The conduit detection wire shall be continuous and unspliced between pull boxes and shall enter the pull boxes at the same location as the conduit with which it is installed, entering under the lower edge of the pull box.

Four (4) feet of conduit detection wire shall be coiled and secured in each pull box or vault.

When two or more detection wires are in any pull box, the Contractor shall mechanically splice all detection wire together.

Conduit detection wire is required in drop cable conduits.

A detection wire surge protection system shall be furnished and installed. Detection wires shall be attached to surge protection systems designed to dissipate high transient voltages or other electrical surges. The detection wire surge protection system shall be grounded to a driven rod within 10 feet of the system using AWG #6 single conductor wire. Grounding shall be done through a stand alone system not connected to power or ITS device grounding. The surge protection system shall normally allow signals generated by locate system to pass through the protection system without going to ground.

907-657.03.7--Splicing into Existing Fiber Optic Cable. At some locations, the Contractor may be required to splice new drop cable into existing fiber optic cable at existing pull boxes. The Contractor is responsible to protect all existing fiber during this work. No separate payment shall be made for splicing into the existing fiber. The cost for all fiber optic work and equipment shall be included in the bid price for pay items 907-657-A and 907-657-B.

The Contractor must notify the Project Engineer in writing no less than ten (10) days in advance of doing any work to existing fiber optic cable. Before any work can begin the Contractor must have obtain approval from the Project Engineer.

907-657.03.8--Fiber Optic Connections at Existing Communication Nodes. In some locations, the Contractor shall be required to pull new fiber optic cable into an existing

communications huts. No separate payment will be made for this work. The cost for pulling the fiber into the hut, providing and installing the termination equipment, and terminating all the fibers shall be included in the cost of pay items 907-657-A and 907-657-B.

907-657.03.9--Drop and Insert Applications. The signal from the TMC to local controllers, cameras, and/or dynamic message signs will be conveyed via the backbone and branch cables.

The appropriate closure (Subsection 907-657.02.8) shall be used.

A 12-port fiber distribution cabinet and appropriate jumper shall be installed within the cabinet at locations approved by the Engineer.

At each device, the applicable fibers will be routed in and out of the equipment cabinet using a pre-terminated drop cable.

Only fibers required for the drop and insert shall be cut, no other fibers in the cable shall be cut without the approval of the Engineer.

The fibers shall be connected to the transmission equipment via LC/LC fiber optic patch cables.

The drop cable shall be routed in a position that will allow access to all installed components without movement of the cable.

In traffic signal control boxes the drop cable shall be routed up the left rear corner to a shelf mounted fiber optic termination cabinet.

In ITS equipment or communication cabinets the cable shall be routed neatly allowing for service of all installed components.

907-657.03.10--Testing.

907-657.03.10.1—General Requirements. The project testing program for fiber optic infrastructure shall include but is not limited to the specific requirements in this subsection.

All test results shall confirm physical and performance compliance with this TSP including but not limited to optical fibers and fusion splices. No event in any given fiber may exceed 0.10 dB. Any event measured above 0.10 dB shall be replaced or repaired at the event point.

The Contractor shall provide the tentative date, time and location of fiber optic infrastructure testing no less than seven (7) days in advance of the test. The Contractor shall provide confirmed date, time and location of fiber optic infrastructure testing no less than 48 hours before conducting the test.

The Contractor shall provide test results documentation in electronic format (3 copies) and printed format (3 copies). Electronic formats shall be readable in Microsoft Excel or other approved application. Printed copies shall be bound and organized by cable segment.

- Two sets are for the Traffic Engineering ITS Department
- One set are for the Engineer

All test results shall be provided in English units of measure of length.

All test results documentation shall be submitted to the Engineer within 14 days of completion of the tests.

The ITS Engineer, Project Engineer and/or their designee(s) are only responsible for attending and observing each test, and reviewing and approving the Contractor's test results documentation. The ITS Engineer, Project Engineer and/or their designee(s) reserve the right to attend and observe all tests. The Contractor is required to perform the Pre-Installation test and the Standalone Acceptance test with the MDOT ITS Engineer or his designee present.

907-657.03.10.2--Pre-Installation Test (PIT). The Contractor shall perform a PIT on all FO Cable prior to any cable removal from the shipping reels.

The Contractor shall perform a PIT on each cable reel delivered to the job site.

The PIT for FO Cable shall include but is not limited to:

- A visual inspection of each cable and reel
- An OTDR Test and documentation as required in the Standalone Acceptance Test (SAT) for three randomly selected fibers from each buffer tube

An Optical Attenuation Test is not required. However, if the Contractor decides to perform one of these tests for his or her own protection, it should be documented and provided to the Engineer.

907-657.03.10.3--Standalone Acceptance Test (SAT). The Contractor shall perform an SAT on all fiber optic infrastructures on this project after field installation is complete, including but not limited to all splicing and terminations. All fiber in pull boxes shall be in its final position mounted to the racks prior to the start of testing.

An SAT for each fiber in each cable shall include OTDR Tests and Optical Attenuation Tests.

For the Attenuation Tests, all fibers in all FO Cables and FO Drop Cables shall be tested from termination point to termination point, including:

- Fibers from FO Termination Cabinet to FO Termination Cabinet
- Fibers from FO Termination Cabinet to FO Drop Panel
- Fibers from FO Drop Panel to FO Drop Panel
- Fibers from FO Termination Cabinet to the end of the cable run in the last FO closure

All test results shall confirm compliance with this TSP including but not limited to optical fibers and fusion splices. No event in any given fiber may exceed 0.10 dB. Any event measured above

0.10 dB shall be replaced or repaired at the event point.

Test documentation shall include but is not limited to:

- Cable & fiber identification
- Cable & fiber ID and location - Physical location (device ID and station number of FO Termination Cabinet, FO Drop Panel, or cable end FO closure), fiber number, and truck or drop cable ID for both the beginning and end point
- Operator name
- Engineer's representative
- Date & time
- Setup and test conditions parameters
- Wavelength
- Pulse width Optical Time Domain Reflectometer (OTDR)
- Refractory index (OTDR)
- Range (OTDR)
- Scale (OTDR)
- Ambient temperature
- Test results for OTDR test (each direction and averaged)
- Total fiber trace (miles)
- Splice loss/gain (dB)
- Events > 0.05 dB
- Measured length (cable marking)
- Total length (OTDR measurement)
- Test results for attenuation test (each direction and averaged)
- Measured cable length (cable marking)
- Total length (OTDR measurement from OTDR test)
- Number of splices (determined from as-builts)
- Total link attenuation

The OTDR Test shall be conducted using the standard operating procedure and recommended materials as defined by the manufacturer of the test equipment.

The Contractor shall use a factory patch cord ("launch cable") of a length equal to the "dead zone" of the OTDR to connect the OTDR and the fiber under test.

Bi-directional OTDR tests shall be conducted and bi-directional averages calculated for each fiber.

All tests shall be conducted at 1310 and 1550 nm for single mode cable.

The Contractor shall conduct the Optical Attenuation Test using the standard operating procedure and recommended materials as defined by the manufacturer of the test equipment.

Bi-directional Optical Attenuation tests shall be conducted and bi-directional averages calculated for each fiber.

A continuity or tone test shall be performed after installation to confirm that a continuous run of conduit detection wire was installed between pull boxes or vaults.

The Contractor shall prepare a test plan, supply equipment, conduct the test and document the results.

The test plan shall be submitted at least 15 working days prior to the desired testing date.

Testing shall not begin until the Engineer has approved the test plan, and all tests shall be conducted in the presence of the Engineer. The Traffic Engineering ITS Department representative shall be notified of the testing dates and invited to observe all testing.

The Traffic Engineering ITS Department may perform additional testing of any and all infrastructure using their own equipment. The Contractor may observe this testing.

The burn in period can not start until the Traffic Engineering ITS Department is satisfied with the installation.

907-657.03.11--Documentation - As-Built Plans. The Contractor shall provide GPS locations of all pull boxes, splices, termination equipment cabinets, DMS, CCTV, Detectors and all pole locations.

The Contractor shall record the sequential footage markers from the fiber optic trunk and drop cables for each GPS location.

The Contractor shall provide scanned PDF files of all plan sheets with pen and ink markups.

The Contractor shall also provide MDOT with an electronic file containing all of the data and test reports required above in a format that is compatible with Microsoft Excel.

A copy of all documentation shall be provided to the MDOT Traffic Engineering ITS Department and Project Office

The Contractor shall provide a site location inventory of ITS devices to include manufacturer model, serial numbers, and quantity. It shall also include the following:

- OTN Nodes and OTN Cards
- Fiber modems
- Video Encoders and Decoders
- Cameras
- Dome Camera housings
- DMS Signs
- Any other serial numbered devices installed

907-657.03.12—MDOT Employee Training. Minimum training requirements are as follows:

- 1) After the installation is complete, the Contractor shall provide formal classroom training and "hands-on" operations training for proper operation and maintenance of the fiber optic plant. The training shall be provided for up to six personnel designated by the Engineer and shall be a minimum of one day in duration. The training shall cover as a minimum preventive maintenance, troubleshooting techniques, fault isolation and OTDR trace analysis. All training materials shall be provided by the Contractor.
- 2) A Training Plan shall be submitted within 90 days of the Notice-to-Proceed. Approval of the Plan shall be obtained from the Engineer and the Traffic Engineering ITS Department. A detailed explanation of the contents of the course and the time schedule of when the training shall be given shall be included in the Training Plan.
- 3) Prior to training, the Contractor shall submit resume and references of the training instructor(s) along with an outline of the training course in a Training Plan. Training instructor(s) shall be manufacturer-certified, experienced in the skill of training others. The training shall be conducted by a trainer with a minimum of four years of experience in training personnel on the operation and maintenance of fiber optic systems.
- 4) The Contractor shall furnish all handouts, manuals and product information for the training. The same models of equipment furnished for the project shall be used in the training. The Contractor shall furnish all media and test equipment needed to present the training. Training shall be conducted in the Jackson area.

907-657.04--Method of Measurement. Fiber optic cable of the type specified will be measured by the linear foot, measured horizontally along the conduit or aerially along the messenger cable. No differentiation will be made for cable installed underground or aerially.

Fiber optic drop cable and of the type specified will be measured by the linear foot from the trunk line to the controller cabinet.

The cost for all fiber optic work, equipment and testing shall be included in the bid price for pay items 907-657-A and 907-657-B.

All required cabinet facilities shall not be measured for separate payment. All standard or special fiber optic modems, fan out boxes, connectors, termination cabinets, patch cords, raceways, splicing devices, splicing, detection wire, warning tape, above ground markers, backplane facilities, twisted pair communications cable interface devices, etc., and any other cabinet modifications required for the fiber optic system shall be included in the price bid for other items of work.

907-657.05--Basis of Payment. Fiber optic cable, fiber optic drop cable, and fiber optic video drop cable, measured as prescribed above, will be paid for at the contract unit price bid per linear foot, which price shall be full compensation for furnishing all materials, for all installing, connecting, cutting, pulling and testing and for all equipment, tools, labor and incidentals necessary to complete the work.

Payment will be made under:

907-657-A: Fiber Optic Cable, 72 SM

- per linear foot

907-657-B: Fiber Optic Drop Cable, 12 SM

- per linear foot

Intersection Improvements on Lakeland Drive from Curran Drive West 1000 ft., known as State Project No. SP-0250-00(001) / 106330301 in Hinds County.

I (We) agree to complete the entire project within the specified contract time.

*** SPECIAL NOTICE TO BIDDERS ***

**BIDS WILL NOT BE CONSIDERED UNLESS BOTH UNIT PRICES AND ITEM TOTALS ARE ENTERED.
 BIDS WILL NOT BE CONSIDERED UNLESS THE BID CERTIFICATION LOCATED AT THE END OF THE BID SHEETS IS SIGNED**

BID SCHEDULE

Line No.	Item Code	Adj Code	Quantity	Units	Description	Unit Price		Item Amount	
						Dollar	Ct	Dollar	Ct
Roadway Items									
0010	201-B001		1	Acre	Clearing and Grubbing				
0020	202-B005		436	Square Yard	Removal of Asphalt Pavement, All Depths				
0030	202-B030		240	Square Yard	Removal of Concrete Pavement, All Depths				
0040	202-B035		153	Square Yard	Removal of Concrete Sidewalk				
0050	202-B038		1,329	Linear Feet	Removal of Curb, All Types				
0060	202-B041		350	Linear Feet	Removal of Fence, All Types				
0070	202-B057		4	Each	Removal of Inlets, All Sizes				
0080	202-B064		570	Linear Feet	Removal of Pipe, 8" And Above				

Line No.	Item Code	Adj Code	Quantity	Units	Description	Unit Price	Bid Amount
0090	202-B290		1	Each	Removal of Power/Light Pole		
0100	202-B291		1	Each	Removal of Air Release Valve and Manhole		
0110	202-B293		1	Lump Sum	Removal of Sediment and Debris from Inlets and Pipes	XXXXXXXXXX	XXX
0120	203-EX035	(E)	2,000	Cubic Yard	Borrow Excavation, AH, FME, Class B9-6		
0130	203-G003	(E)	4,500	Cubic Yard	Excess Excavation, FM, AH		
0140	206-A001	(S)	150	Cubic Yard	Structure Excavation		
0150	211-B001	(E)	325	Cubic Yard	Topsoil for Slope Treatment, Contractor Furnished		
0160	212-B001		2,950	Square Yard	Standard Ground Preparation		
0170	213-B001		1	Ton	Combination Fertilizer, 13-13-13		
0180	213-C001		1	Ton	Superphosphate		
0190	215-A001		2	Ton	Vegetative Materials for Mulch		
0200	216-B004		2,950	Square Yard	Solid Sodding, Bermuda		

Line No.	Item Code	Adj Code	Quantity	Units	Description	Unit Price		Bid Amount
0210	219-A001		60	Thousand Gallon	Watering	20.00	1,200.00	
0220	220-A001		1	Acres	Insect Pest Control	30.00	30.00	
0230	234-A001		250	Linear Feet	Temporary Silt Fence			
0240	235-A001		25	Bales	Temporary Erosion Checks			
0250	406-A001		5,500	Square Yard	Cold Milling of Bituminous Pavement, All Depths			
0260	503-C007		200	Linear Feet	Saw Cut, Full Depth			
0270	602-A001	(S)	2,000	Pounds	Reinforcing Steel			
0280	603-CA002	(S)	190	Linear Feet	18" Reinforced Concrete Pipe, Class III			
0290	604-A001		395	Pounds	Castings			
0300	605-AA004	(S)	25	Square Yard	Geotextile for Subsurface Drainage, Type V			
0310	605-W001	(GY)	50	Cubic Yard	Filter Material for Combination Storm Drain and/or Underdrains, Type A, FM			
0320	608-B001	(S)	505	Square Yard	Concrete Sidewalk, With Reinforcement			

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 Hinds County

Line No.	Item Code	Adj Code	Quantity	Units	Description	Unit Price	Bid Amount
0330	609-B001	(S)	80	Linear Feet	Concrete Curb, Header		
0340	609-D001	(S)	350	Linear Feet	Combination Concrete Curb and Gutter Type 1		
0350	609-D002	(S)	700	Linear Feet	Combination Concrete Curb and Gutter Type 2		
0360	609-D006	(S)	185	Linear Feet	Combination Concrete Curb and Gutter Type 1 Modified		
0370	609-D017	(S)	120	Linear Feet	Combination Concrete Curb and Gutter, Per Plans		
0380	613-A001		1	Lump Sum	Adjustment of Castings, Gratings & Utility Appurtenances	XXXXXXXXXX	XXX
0390	613-A002		3	Each	Adjustment of Castings, Gratings & Utility Appurtenances		
0400	614-B001	(S)	200	Square Yard	Concrete Driveway, With Reinforcement		
0410	616-A002	(S)	45	Square Yard	Concrete Median and/or Island Pavement, 6-inch		
0420	616-A003	(S)	12	Square Yard	Concrete Median and/or Island Pavement, 10-inch		
0430	618-A001		1	Lump Sum	Maintenance of Traffic	XXXXXXXXXX	XXX
0440	619-A1001		2.675	Linear Feet	Temporary Traffic Stripe, Continuous White		

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Line No.	Item Code	Adj Code	Quantity	Units	Description	Unit Price	Bid Amount
0450	619-A2001		2,855	Linear Feet	Temporary Traffic Stripe, Continuous Yellow		
0460	619-A3001		1,820	Linear Feet	Temporary Traffic Stripe, Skip White		
0470	619-A5001		760	Linear Feet	Temporary Traffic Stripe, Detail		
0480	619-A6001		760	Linear Feet	Temporary Traffic Stripe, Legend		
0490	619-A6002		440	Square Feet	Temporary Traffic Stripe, Legend		
0500	619-D1001		75	Square Feet	Standard Roadside Construction Signs, Less than 10 Square Feet		
0510	619-D2001		544	Square Feet	Standard Roadside Construction Signs, 10 Square Feet or More		
0520	619-E1001		2	Each	Flashing Arrow Panel, Type C		
0530	619-F1001		2,080	Linear Feet	Concrete Median Barrier, Precast		
0540	619-F2001		450	Linear Feet	Remove and Reset Concrete Median Barrier, Precast		
0550	619-G4001		48	Linear Feet	Barricades, Type III, Single Faced		
0560	619-G4002		24	Linear Feet	Barricades, Type III, Single Faced, Permanent		

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Line No.	Item Code	Adj Code	Quantity	Units	Description	Unit Price	Bid Amount
0570	619-G5001		102	Each	Free Standing Plastic Drums		
0580	619-G7001		10	Each	Warning Lights, Type "B"		
0590	619-J1001		4	Unit	Impact Attenuator, 40 MPH		
0600	620-A001		1	Lump Sum	Mobilization	XXXXXXXXXX	XXX
0610	627-K001		95	Each	Red-Clear Reflective High Performance Raised Markers		
0620	627-L001		76	Each	Two-Way Yellow Reflective High Performance Raised Markers		
0630	630-A001		50	Square Feet	Standard Roadside Signs, Sheet Aluminum, 0.080" Thickness		
0640	630-A002		20	Square Feet	Standard Roadside Signs, Sheet Aluminum, 0.125" Thickness		
0650	630-C004		90	Linear Feet	Steel U-Section Posts, 3.0 to 3.5 lb/ft		
0660	630-K001		60	Linear Feet	Welded & Seamless Steel Pipe Posts, 3"		
0670	635-A001		738	Linear Feet	Vehicle Loop Assemblies		
0680	636-A001		750	Linear Feet	Shielded Cable, AWG #18, 4 Conductor		

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Line No.	Item Code	Adj Code	Quantity	Units	Description	Unit Price	Bid Amount
0690	638-A005		1	Each	Loop Detector Amplifier, Card Rack Mounted, 4 Channel		
0700	640-A016		7	Each	Traffic Signal Heads, Type 1 LED		
0710	640-A017		3	Each	Traffic Signal Heads, Type 2 LED		
0720	640-A019		1	Each	Traffic Signal Heads, Type 5 LED		
0730	640-A021		8	Each	Traffic Signal Heads, Type 6 LED		
0740	642-A008		1	Each	Solid State Traffic Actuated Controllers, Type 8A		
0750	644-A001		4	Each	Optical Detector		
0760	644-B001		460	Linear Feet	Optical Detector Cable		
0770	644-C002		2	Each	Phase Selector, 4 Channel		
0780	647-A001		3	Each	Pullbox, Type 1		
0790	647-A002		4	Each	Pullbox, Type 3		
0800	666-B015		400	Linear Feet	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 5 Conductor		

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Line No.	Item Code	Adj Code	Quantity	Units	Description	Unit Price	Bid Amount
0810	666-B016		325	Linear Feet	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 7 Conductor		
0820	666-B032		21	Linear Feet	Electric Cable, Underground in Conduit, THHN, AWG #8, 2 Conductor		
0830	666-D005		225	Linear Feet	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 14, 7 Conductor		
0840	668-A016		21	Linear Feet	Traffic Signal Conduit, Underground, Type 4, 1"		
0850	668-A018		840	Linear Feet	Traffic Signal Conduit, Underground, Type 4, 2"		
0860	668-A020		40	Linear Feet	Traffic Signal Conduit, Underground, Type 4, 3"		
0870	668-B024		100	Linear Feet	Traffic Signal Conduit, Underground Drilled or Jacked, Rolled Pipe, 2"		
0880	668-B025		200	Linear Feet	Traffic Signal Conduit, Underground Drilled or Jacked, Rolled Pipe, 3"		
0890	815-A003	(S)	50	Square Yard	Loose Riprap, Size 200		
0900	815-E001	(S)	100	Square Yard	Geotextile under Riprap		
0910	907-213-A001		2	Ton	Agricultural Limestone		
0920	907-226-A001		1	Acre	Temporary Grassing		

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Line No.	Item Code	Adj Code	Quantity	Units	Description	Unit Price	Bid Amount
0930	907-237-A002		200	Linear Feet	Wattles, 12"		
0940	907-237-A003		500	Linear Feet	Wattles, 20"		
0950	907-246-B002		50	Each	Rockbags		
0960	907-265-A005	(S)	460	Linear Feet	10" C900 PVC Water Main		
0970	907-265-B003	(S)	160	Linear Feet	6" Ductile Iron Water Main		
0980	907-265-B004	(S)	100	Linear Feet	10" Ductile Iron Water Main		
0990	907-265-B005	(S)	320	Linear Feet	12" Ductile Iron Water Main		
1000	907-265-C002		6,212	Pounds	Ductile Iron Fittings		
1010	907-265-D007		6	Each	6" Gate Valve		
1020	907-265-D008		4	Each	10" Gate Valve		
1030	907-265-D009		2	Each	12" Gate Valve		
1040	907-265-J004		5	Each	Water Service Connections		

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Line No.	Item Code	Adj Code	Quantity	Units	Description	Unit Price	Bid Amount
1050	907-265-K005		2	Each	12" Line Stop		
1060	907-265-L001	(S)	10	Linear Feet	1" Diameter Water Service Line		
1070	907-265-L002	(S)	30	Linear Feet	3/4" Diameter Water Service Line		
1080	907-265-M002		2	Each	6" Water Meter		
1090	907-265-MM001		2	Each	12" Insertable Valve		
1100	907-265-N001		1	Each	Backflow Preventer Assembly, 10"		
1110	907-265-NN001		220	Linear Feet	3/4" Water Service Tubing, Bored		
1120	907-265-PP001		110	Linear Feet	1" Water Service Tubing, Bored		
1130	907-304-F002	(GT)	250	Ton	Size 610 Crushed Stone Base		
1140	907-601-B003	(S)	25	Cubic Yard	Class "B" Structural Concrete, Minor Structures		
1150	907-604-PP003		1	Each	Modify Existing Inlet, Per Plans		
1160	907-607-PP013		260	Linear Feet	Reinstall Black Metal Fence, Per Plans		

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Line No.	Item Code	Adj Code	Quantity	Units	Description	Unit Price	Bid Amount
1170	907-607-PP014		2	Each	Masonry Column, Per Plans		
1180	907-611-PP003	(S)	96	Square Feet	Detectable Warning, Per Plans		
1190	907-617-A001		4	Each	Right-of-Way Marker		
1200	907-626-A004		1,848	Linear Feet	6" Thermoplastic Traffic Stripe, Skip White		
1210	907-626-C008		1,743	Linear Feet	6" Thermoplastic Edge Stripe, Continuous White		
1220	907-626-E003		1,056	Linear Feet	6" Thermoplastic Traffic Stripe, Continuous Yellow		
1230	907-626-F008		792	Linear Feet	6" Thermoplastic Edge Stripe, Continuous Yellow		
1240	907-626-G004		3,525	Linear Feet	Thermoplastic Detail Stripe, White		
1250	907-626-G005		200	Linear Feet	Thermoplastic Detail Stripe, Yellow		
1260	907-626-H004		180	Linear Feet	Thermoplastic Legend, White		
1270	907-626-H005		425	Square Feet	Thermoplastic Legend, White		
1280	907-630-PP015		4	Each	Impact Resistant Object Marker Assembly		

Section 905
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Line No.	Item Code	Adj Code	Quantity	Units	Description	Unit Price	Bid Amount
1290	907-632-I001		98	Linear Feet	Steel Casing pipe, Trenched, 24"		
1300	907-632-PP001		1	Each	Air Release Valve, Per Plans		
1310	907-632-PP002		2	Each	Cut and Cap 12" Ductile Iron Pipe, Per Plans		
1320	907-639-A008		2	Each	Traffic Signal Equipment Pole, Type II, 17' Shaft, 55' Arm		
1330	907-639-A034		3	Each	Traffic Signal Equipment Pole, Type VI, 8' Shaft		
1340	907-639-A104		1	Each	Traffic Signal Equipment Pole, Type II, 17' Shaft, 50' & 65' Arms		
1350	907-639-C002		4	Cubic Yard	Pole Foundations, 36" Diameter		
1360	907-639-C003		6	Cubic Yard	Pole Foundations, 24" Diameter		
1370	907-639-C004		4	Cubic Yard	Pole Foundations, 30" Diameter		
1380	907-649-A004		4	Each	Video Detection System, 1 Sensor, Type 2		
1390	907-650-A002		2	Each	On Street Video Equipment, Fixed Type		
1400	907-650-A003		1	Each	On Street Video Equipment, PTZ Type		

Line No.	Item Code	Adj Code	Quantity	Units	Description	Unit Price	Bid Amount
1410	907-653-A001		4	Each	Traffic Sign, Internally Illuminated Sign		
1420	907-657-B001		430	Linear Feet	Fiber Optic Drop Cable, 12 SM		
1425	907-657-D001 Added 03/19/2012		960	Linear Feet	Relocation of Existing Fiber Optic Cable		
1430	907-659-A001		1	Lump Sum	Traffic Management Center Modifications	XXXXXXXXXX	XXX
1440	907-699-A002		1	Lump Sum	Roadway Construction Stakes	XXXXXXXXXX	XXX
1450	907-810-PP002		1	Each	Galvanized Steel Box Cover, Per Plans		
ALTERNATE GROUP AA NUMBER 1							
1460	907-403-A006 (BA1)		670	Ton	Hot Mix Asphalt, MT, 12.5-mm mixture		
1470	907-403-A007 (BA1)		1,075	Ton	Hot Mix Asphalt, MT, 19-mm mixture		
1480	907-403-A010 (BA1)		700	Ton	Hot Mix Asphalt, MT, 9.5-mm mixture		
1490	907-403-B004 (BA1)		255	Ton	Hot Mix Asphalt, MT, 12.5-mm mixture, Leveling		
ALTERNATE GROUP AA NUMBER 2							
1500	907-403-M002 (BA1)		670	Ton	Warm Mix Asphalt, MT, 12.5-mm mixture		

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Line No.	Item Code	Adj Code	Quantity	Units	Description	Unit Price	Bid Amount
1510	907-403-M006	(BA1)	700	Ton	Warm Mix Asphalt, MT, 9.5-mm mixture		
1520	907-403-M007	(BA1)	1,075	Ton	Warm Mix Asphalt, MT, 19-mm mixture		
1530	907-403-N006	(BA1)	255	Ton	Warm Mix Asphalt, MT, 12.5-mm mixture, Leveling		

*** BID CERTIFICATION ***

TOTAL BID \$ _____

*** SIGNATURE STATEMENT ***

BIDDER ACKNOWLEDGES THAT HE/SHE HAS CHECKED ALL ITEMS IN THIS PROPOSAL FOR ACCURACY AND CERTIFIED THAT THE FIGURES SHOWN THEREIN CONSTITUTE THEIR OFFICIAL BID.

BIDDER'S SIGNATURE

BIDDER'S COMPANY

BIDDER'S FEDERAL TAX ID NUMBER