State Job No. 457723
Project No. _____

PID No. 92494
Federal No. E120138

STATE OF OHIO
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT NO. 5, IN THE COUNTIES OF COSHOCTON, FAIRFIELD, GUERNSEY, LICKING, MUSKINGUM & PERRY
INTERSECTION TRAFFIC SIGNAL IMPROVEMENTS

PROJECT DESCRIPTION: The purpose of this contract is to modify existing signalized intersections by installing signal heads with LEDs and blackplates, uninterruptible power supplies, tether wires and other signal related devices and work.

2010 SPECIFICATIONS
The Standard 2010 Specifications of the State of Ohio Department of Transportation, including changes and supplemental specifications listed in the plans and proposal shall govern these improvements.

I hereby approve these plans and declare that the making of this improvement will not require the closing of the highway to traffic and that the provisions for the maintenance and safety of traffic will be as set forth in the plans and estimates.

Date approved: 2/21/12 District Deputy Director: _____

Date approved: _____ Director, Department of Transportation: _____

STANDARD CONSTRUCTION DRAWINGS

HL-20.11	01/19/07	MT-35.10	04/20/01	TC-21.20	04/15/11		
HL-30.11	01/16/09	MT-95.30	07/17/09	TC-81.10	10/21/11		
HL-30.22	04/17/09	MT-95.31	07/17/09	TC-81.21	10/21/11		
		MT-95.32	07/17/09	TC-82.10	10/21/11		
		MT-97.10	10/15/10	TC-83.10	01/19/07		
		MT-105.10	01/16/09	TC-83.20	01/21/11		
				TC-85.10	10/16/09	Plan Insert Sheets	
				TC-85.20	07/15/11	208521	07/15/11
						208522	10/21/11

Lat: 39 - 57 - 06 Long: 82 - 24 - 41

PLAN PREPARED BY:
ODOT – District 05, Office
Of Planning & Engineering

ENGINEERS SEAL:

STATE OF OHIO
BRIAN F. BOSCH
E-61548
REGISTERED PROFESSIONAL ENGINEER

SIGNED: Brian F. Bosch
DATE: Feb. 21, 2012

SUPPLEMENTAL SPECIFICATIONS:
800 01/20/12

SPECIAL PROVISIONS:
NONE

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General Notes

Scope of Work

The purpose of this contract is to modify existing signalized intersections within District 5 to furnish and install some or all of the following items at each intersection:

- Vehicular signal heads with light emitting diode (LED) lamps and backplates
- Pedestrian signal heads with light emitting diode (LED) lamps
- Bottom tether wires for span wire mounted signal heads, rigid mounting for mast arm signals
- Adjust existing span wire pole attachment height or sag to increase signal head clearance to pavement
- Uninterruptible power supplies
- Pavement loops

Locations

All signalized intersections are located within the Ohio Department of Transportation, District 05 counties.

During the term of this contract, the District will designate a maximum of 46 existing signalized intersections where the work will be preformed.

Term of Contract

The term of the contract shall be from the date of award for a period of twelve (12) months or until all work described in the plans is completed, whichever comes first.

Work Assignment Process

The District, through the Engineer, will provide the Contractor with locations to be upgraded. Prior to assigning the work to the Contractor, the Contractor and the Engineer will perform a site inspection to establish the quantities for the location and determine if there are utility conflicts with the proposed tether wires. See notes for "Signalization Misc.: Span Wire Adjustment" and "Utility Note".

If it is determined that the work can be performed, the Project Engineer shall record the date that the Contractor acknowledges acceptance of the location. This date will be used to establish an interim completion date subject to liquidated damages of $750.00 per day according to CMS 108.07. The Contractor shall have 60 days to complete the work. To facilitate completion of the work within the required time period, the Contractor has the option to accept a maximum of 10 sites in any 30 day period at any time during the contract, unless otherwise agreed to by the Contractor. Completion of the 10 day performance test does not absolve the Contractor from the liquidated damages if the project work has not been completed to the satisfaction of the Engineer.

General Summary Estimated Quantities

Quantities shown in the general summary are estimated quantities based on all of the potential locations being included within this contract. They are not to be construed as exact and variance can be expected in the actual quantities based on actual field review. All pay items listed in the plans are considered contingency quantities meaning that the Contractor will not receive payment for work that is not performed or materials that are not used unless otherwise specified in the plans.

The Contractor shall not order materials for any location until the Engineer establishes the quantities through the site inspection.

Work Inspection

The Contractor shall provide the Engineer with 48 hour notice of any work to be performed at the intersection site so that inspection services can be supplied.

Contractor's Commitment

If at any time the Contractor is unable to meet his commitment under the terms of this contract, as determined by the Engineer, the State will proceed by any means necessary to complete the work. Any expense incurred by ODOT in connection with the completion of the work shall be charged against any amounts due the Contractor.

Materials

All materials furnished for this project shall be in accordance with the requirements of the Ohio Department of Transportation Construction and Material Specifications (CM&S) dated as shown on sheet 1. Furnish new materials and equipment of first quality, of current design and free from defects. No used material will be permitted.

Utilities Note

During the site inspection, the Contractor shall check for conflicts between proposed tether wires, existing utility lines, and the need to raise the existing span wire. Where such conflicts exist, the Contractor shall propose a work plan to avoid the conflicts. If the utility conflicts cannot be worked around, the Engineer may cancel work at this location.

There are no utilities shown in these plans. It shall be the Contractor's responsibility to properly locate and work around all utilities if any conflicts exist.

Guarantee

The Contractor shall guarantee that the traffic control equipment installed as part of this contract shall operate satisfactorily for a period of 90 days following the successful completion of the 10 day performance test.

The guarantee shall cover all traffic signal equipment, lamps and wiring installed by the contractor at the intersection as part of this contract.

Customary and applicable ODOT specified manufacturer's guarantees for the installed items shall be turned over to the state following acceptance of the equipment.

The cost of guaranteeing the traffic control system will be incidental to and included in the contract unit price of the various items making up the system.

614 Maintaining Traffic Misc.: Per Location

The Contractor shall be responsible for maintaining traffic during the installation of all intersection work items. All traffic control devices shall be furnished, erected, maintained and removed by the contractor. The following requirements apply:

1. Lane closures on any street, ramp or business entrance in the project will not occur during the peak volume hours of 7 am to 9 am, and 4 pm to 6 pm.

2. The use of a law enforcement officer with patrol car is required where a complete blockage of approach traffic is required.

3. The use of a law enforcement officer with patrol car is required if the contractor turns the intersection signals off or puts the intersection in flashing operation.

Payment for Item 614 "Maintaining Traffic Misc.: Per Location" shall include all the items required to maintain traffic in accordance with these requirements. The payment bid item shall be on an each basis for each of the signalized intersections at which work shall be performed.

614 Law Enforcement Officer With Patrol Car For Assistance

The official patrol car shall be a public safety vehicle as required by the Ohio Revised Code. The law enforcement officers (LEOs) are considered to be employed by the Contractor and the Contractor shall be responsible for their actions. Although they are employed by the Contractor, the Engineer shall have control over their placement. The hours paid shall include minimum show-up time required by the law enforcement agency involved.

The Contractor shall use LEOs where required in the note for "Maintaining Traffic Misc.: Per Location". Use of LEOs for other operations will require prior approval from the Engineer. LEOs should not be used where the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) intends that flaggers be used.

Payment for Item 614, "Law Enforcement Officer with Patrol Car For Assistance" will be on a unit price (hourly) basis. Any additional costs (administrative or otherwise) incurred by the Contractor to obtain the services of a LEO are included with the bid unit price.

624 Mobilization, As Per Plan

Because the total number of locations to be upgraded may be revised by the site inspection and may be spread across the District's counties, payment for Item 624 "Mobilization, As Per Plan" will be on an each basis for each signalized intersection where the Contractor has satisfactorily completed the contract work.

632 Vehicular Signal Head, LED, (By Type), With Backplate, As Per Plan

This item will be used to replace vehicular signal heads at the existing signalized intersection. New attachment hardware shall be installed for span wire (including the signal head hanger on the span wire) or rigid mounted mast arm installation. In addition to the requirements of CMS 632 and 732, the following shall apply:

1. Signal heads and visors shall be constructed of black polycarbonate plastic with cutaway visors and meet ITE specifications.
2. Proper exterior colors shall be obtained by use of colored plastic material rather than painting.
3. All upper signal support hardware and piping up to and including the wire inlet fitting shall be ferrous metal.
4. The entrance fitting shall be of the tri-stud design with serrated rings in order to achieve positive locking.
5. Aluminum backplates with reflective tape will be in accordance with CMS 732.22.
6. The light emitting diode (LED) signal lamp units shall meet the requirements of C&MS 732.04-C. The contractor shall provide ODOT, in writing, with the LED manufacturer name, serial number, part number, description of lamp, and date of manufacture for all LED units that are to be used in the signal head prior to installation, for acceptance and warranty purposes.

Removal of an existing signal head shall be by separate bid item.

Payment for Item 632 "Vehicular Signal Head, LED, (By Type), with Backplate, As Per Plan" shall be made for complete signal head furnished and installed, including all labor, equipment, materials and new attachment hardware.

632 Signalization Misc: Unlash and Relash Messenger Wire

The contractor shall remove existing messenger wire lashing rods and reinstall them as necessary for the installation of any new cables on the existing intersection signal spans. The cables shall enter the existing strain pole through the pole cable entrance fitting and use the existing conduit system to get to the controller cabinet. The new cables shall be supported by a new cable support assembly at the top of the strain pole.

The new signal cables shall be bid by separate bid items.

Payment for Item 632 "Signalization Misc: Unlash and Relash Messenger Wire" will be per foot and include all labor, materials, cable support assemblies and equipment to install new cables on existing signal span wire installations.

632 Tether Wire with Accessories, As Per Plan

Arrange tether wire with accessories to stabilize signal heads and prevent excessive swinging. Accessories included with tether wire include anchor shackles, S-hooks yielding element, thimbles, turnbuckles, guy grips, wire rope clips, lock wire, safety tie wire, lead sheet, and signal head tether anchors and extenders.

Adjust the tether span to be horizontal on simple spans. On complex spans, the tether span shall be essentially parallel to the overlying messenger span. Bull Rings will be used at all internal corners of the tether span. Safety ties shall be installed at all yielding (S-hook) locations to prevent the span end from dropping into the roadway if the S-hook opens. No electrical or communication cables of any kind shall be attached to the tether wire. No signs or other devices shall be suspended from or attached to the tether wire.

Furnish Utilities Grade tether wire, ¼-inch (6 mm), twisted strand galvanized steel according to ASTM A475, Class B, with the exception that tags according to Section 19.2 are not required on lengths less than 1000 feet (300 m). Ensure that all accessories except S-hooks have rated load strength equal to or greater than the tether wire minimum breaking strength. S-hooks shall be made of mild low-carbon galvanized steel and of the wire size indicated on the plans; larger wire sizes and higher-strength steel S-hooks shall not be substituted. Safety tie wire shall be 304 or 316 stainless steel, 1x19 stranded, 1/8-inch (3 mm) with stainless steel wire rope clips. Lead sheet to wrap tether wire in breakaway anchors shall be commercially pure lead of thickness 0.030 to 0.042 inches (0.75 to 1.0 mm).

Installation of the tether wire shall be in accordance with plan insert sheets 208521 & 208522.

Payment for Item 632 "Tether Wire with Accessories, As Per Plan" will be measured by the number of feet in place, and will include all necessary accessories such as anchor shackles, S-hooks yielding element, thimbles, turnbuckles, guy grips, wire rope clips, lock wire, safety tie wire, lead sheet, and signal head tether anchors and extenders. Measurement will be from pole center to pole center, or pole center to bullring, or bullring to bullring. No measurement will be made for any length of tether wire for attachment to poles or bullrings by bending, lapping or wrapping.

632 Signalization Misc.: Span Wire Adjustment

For the "Safety" upgrades, the new signal heads with backplates may result in insufficient clearance from the pavement to the bottom of the backplate or tether wire. PIS 208521 and PIS 208522 require a clearance of 17 to 19 feet for tethered signal heads and a clearance of 16 to 18 feet for untethered signal heads. During the site inspection, the Engineer and Contractor will determine if the existing signal span wire elevation will provide

a minimum 17 ft. clearance with the new signal heads. If not, they will determine if the span wire attachments at the strain pole can be raised or the span wire sag reduced. It is preferable to raise the span at the poles instead of adjusting the sag.

The Engineer may reduce the minimum clearance to 16.5 ft. at any location. Work at this location will not be assigned (cancelled) if this minimum cannot be obtained.

Payment for Item 632 "Signalization Misc.: Span Wire Adjustment" will be made for each strain pole on which the Contractor raises the span wire, including all labor and equipment. If the span wire sag is adjusted from a strain pole, payment will be for work on that strain pole only and not for other affected poles. Raising the span wire and adjusting the sag from the same pole will be not paid as separate items of work.

632 Signalization Misc.: Power Cable Adjustment

For the "Safety" upgrades, the new signal heads with backplates may result in insufficient clearance from the pavement to the bottom of the backplate or tether wire. PIS 208521 and PIS 208522 require a clearance of 17 to 19 feet for tethered signal heads and a clearance of 16 to 18 feet for untethered signal heads. During the site inspection, the Engineer and Contractor will determine if the existing signal span wire elevation will provide a minimum 17 ft. clearance with the new signal heads. If not, they will determine if the power cable attachments at the strain pole can be raised or the power cable sag reduced. It is preferable to raise the span at the poles instead of adjusting the sag.

The Engineer may reduce the minimum clearance to 16.5 ft. at any location. Work at this location will not be assigned (cancelled) if this minimum cannot be obtained.

Payment for Item 632 "Signalization Misc.: Power Cable Adjustment" will be made for each strain pole on which the Contractor raises the power cable, including all labor and equipment. If the power cable sag is adjusted from a strain pole, payment will be for work on that strain pole only and not for other affected poles. Raising the power cable and adjusting the sag from the same pole will be not paid as separate items of work.

632 Signalization Misc.: Separate existing 2-way signal heads into 2 separate 1-way signal heads

As per Plan Insert Sheet 208522, Multi-way heads shall not be used on tethered spans. Therefore this item shall include all necessary work, hardware, equipment and labor to separate the multi-way signal heads.

Additional signal cable, if needed, shall be included as a separate pay item.

Payment for Item 632 "Signalization Misc.: Separate existing 2-Way Signal Heads into 2 Separate 1-Way Signal Heads" will be made for each set of signal heads the contractor separates, including all labor and equipment.

632 Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head

Signal heads removed on this project shall be delivered to the District facility at:

Place	Ohio Department of Transportation, District 5
Address	9600 Jacksontown Rd., Jacksontown, Ohio 43030
Contact person and telephone no.	Ron Miller 740-323-5286
Hours of operation	7:30 AM to 3:00 PM

633 Cabinet Foundation As Per Plan

This item shall provide a stand-alone foundation for an Uninterruptible Power Supply (UPS). It is the contractor's responsibility to provide a foundation large enough to accommodate the UPS being provided by separate bid item. As a minimum, the foundation shall be 30 inches square and be otherwise constructed in accordance with NEMA cabinet foundations shown on TC-83.20.

Payment for Item 633 "Cabinet Foundation, As Per Plan" shall include all equipment, labor and materials to install the foundation, including conduit ells and anchor bolts.

633 Controller Item Misc.: Modify Cabinet Foundation

This item shall expand an existing controller cabinet foundation to base mount an UPS against the side of the controller cabinet. The UPS foundation expansion shall:

1. Be mounted flush against the existing foundation
2. Be doweled into the existing foundation with four (4), ½ inch rebars
3. Match the bottom and top elevation of the existing foundation
4. Match the front to back depth of the existing foundation

The width of the foundation expansion will vary depending on the UPS cabinet size provided, but should provide a minimum of 4 inches additional foundation in front of the mounted UPS cabinet.

Payment for Item 633 "Controller Item Misc.: Modify Cabinet Foundation" shall include all equipment, labor and materials to modify the existing foundation.

633 Uninterruptible Power Supply (UPS), As Per Plan

In addition to the requirements of CMS 633 and 733, pole attachment hardware will be included for pole mounted cabinets, and a cabinet riser (8 inch minimum) and anchor bolts will be provided for base mounted cabinets. All UPS units shall be 1000 watt, except for the unit to be installed at the intersection of SR 16/37 & SR 661 WB ramps which shall be a 1600 watt unit.

Existing Plans

The contractor will be given an existing plan sheet for each signal intersection at the pre-construction meeting. The existing plan sheets will identify any signal equipment that is to be relocated. The signal heads and vehicle detection loops identified in the following locations will be noted on these drawings.

632 Loop Detector Lead-In Cable

A quantity of 600' of loop detector lead-in cable is included in the general summary to be used as Directed by the Engineer if needed to replace the existing lead-in cable for the detector loops that are included with this plan to be replaced.

This item shall include all work necessary to remove and replace the existing loop detector lead-in cable including all labor, materials and equipment required to remove and replace the existing loop detector lead-in cable.

Location and Work Description

Coshocton County Locations

Location 1 - Details for SR 16 & SR 83

The work at this location shall include separating 1 set of 2-way signal heads. Move head "A", 2' towards head "B", making sure to maintain at least 8' horizontal separation.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	1 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Signalization Misc.: Unlash and Relash Messenger Wire	10 Foot
Item 632	Signalization Misc.: Separate existing 2-Way Signal Heads into 2 Separate 1-Way Signal Heads	1 Each

Location 2 - Details for US 36 & SR 16/83

The work at this location shall include separating 2 sets of 2-way signal heads. Move head "G" 2' towards head "D" and move head "B" 2' towards head "C". This will require new signal cable from head F to G and head A to B.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	2 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Signal Cable, 5-Conductor, No. 14 AWG	63 Foot
Item 632	Signalization Misc.: Unlash and Relash Messenger Wire	96 Foot
Item 632	Signalization Misc.: Separate existing 2-Way Signal Heads into 2 Separate 1-Way Signal Heads	2 Each

Location 3 - Details for US 36 & SR 83/CR 1A

The work at this location shall include cutting two new in pavement loops. Loops L-9 and L-16.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	2 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Detector Loop	2 Each

Location 4 - Details for US 36 & SR 93

The work at this location shall include cutting a new stop bar loop L-7 and running new loop lead-in cable.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	1 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Detector Loop	1 Each
Item 632	Loop Detector Lead-In Cable	60 Foot

Location 5 - Details for US 36 & CR 621

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing "H" Span. The span wire will need to be raised at the NW & SW corners.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	7 Each
Item 632	Tether Wire with Accessories, As Per Plan	415 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	7 Each
Item 632	Signalization Misc.: Span Wire Adjustment	2 Each

Fairfield County Locations

Location 6 - Details for SR 204 & Harmon Rd.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Box with Tails Span.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	9 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	1 Each
Item 632	Tether Wire with Accessories, As Per Plan	390 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	10 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each

Location 7 - Details for IR 70 WB ramps & SR 256

The work at this location shall include replacing the existing signal heads with new signal heads with backplates on existing Mast Arms. (2-left turn arrow signal heads)

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	9 Each
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	9 Each

Location 8 - Details for IR 70 EB ramps & SR 256

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing "H" Span. (2-right turn arrow signal heads and 2-left turn arrow signal heads)

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	10 Each
Item 632	Tether Wire with Accessories, As Per Plan	427 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	10 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each

Location 9 - Details for US 33 WB ramps & Diley Rd. (King's Crossing)

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Box with Tails Span. Install a ground mounted UPS with riser and work pad. (3-left turn arrow signal heads)

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	9 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	2 Each

Item 632	Tether Wire with Accessories, As Per Plan	508 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	11 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each
Item 632	Signalization Misc.: Power Cable Adjustment	4 Each
Item 633	Controller Work Pad	1 Each
Item 633	Controller Item Misc.: Modify Cabinet Foundation	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each

Location 10 - Details for US 33 EB ramps & Diley Rd.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates on existing Mast MonoTube and Mast Arm. Install a ground mounted UPS with riser and work pad. (4-left turn arrow signal heads)

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	9 Each
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	9 Each
Item 633	Controller Work Pad	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each
Item 633	Controller Item Misc.: Modify Cabinet Foundation	1 Each

Location 11 - Details for SR 204 & Milnor Rd.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Modified Box with Tails Span.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	5 Each
Item 632	Vehicular Signal Head, LED, Black, 4-Section, 12" Lens, 1-Way with Backplate, As Per Plan	3 Each
Item 632	Tether Wire with Accessories, As Per Plan	283 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	8 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each

Location 12 - Details for US 22 & Trace Dr.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Box with Tails Span.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	6 Each
Item 632	Tether Wire with Accessories, As Per Plan	241 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	6 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each

Location 13 - Details for SR 37 & Arbor Valley Dr. (Lancaster HS Ent.)

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Box with Tails Span.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	6 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	2 Each
Item 632	Tether Wire with Accessories, As Per Plan	352 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	8 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each
Item 632	Signalization Misc.: Power Cable Adjustment	2 Each

Guernsey County Locations

Location 14 - Details for US 22 & SR 723

The work at this location shall include separating 2 sets of 2-way signal heads. Move heads "E & F" 3' towards cabinet, trying to line them up with the center of the EB lanes of US 22.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	2 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Signalization Misc.: Unlash and Relash Messenger Wire	20 Foot

Item 632	Signalization Misc.: Separate existing 2-Way Signal Heads into 2 Separate 1-Way Signal Heads	2 Each

Location 15 - Details for IR 70 WB ramps & SR 209/Georgetown Rd.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates on existing Mast Arms. Also replace loop L-6 (2-left turn arrow signal heads)

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	2 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	8 Hour
Item 624	Mobilization, As Per Plan	2 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	12 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	2 Each
Item 632	Detector Loop	1 Each
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	14 Each

Location 16 - Details for IR 70 EB ramps & SR 209

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Simple Span.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	5 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	1 Each
Item 632	Tether Wire with Accessories, As Per Plan	143 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	6 Each
Item 632	Signalization Misc.: Span Wire Adjustment	2 Each

Licking County Locations

Location 17 - Details for SR 16 & Owens Corning Ent.

The work at this location shall include installing a ground mounted UPS with riser on the back side of the signal cabinet. Also recut detector loops L-1 & L-2 (WB front loops).

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each

Item 632	Detector Loop	2 Each
Item 633	Controller Work Pad	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each
Item 633	Cabinet Foundation, As Per Plan	1 Each

Location 18 - Details for US 40 & Mink St.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing "H" Span. Also separating 2 sets of 2-way signal and 1 set of Back to back signal heads. Move heads "C & D" from mid span to the leg of the span. Move heads "H & I" 1' each direction away from each other

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	10 Each
Item 632	Tether Wire with Accessories, As Per Plan	315 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	10 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each
Item 632	Signalization Misc.: Unlash and Relash Messenger Wire	30 Foot
Item 632	Signalization Misc.: Separate existing 2-Way Signal Heads into 2 Separate 1-Way Signal Heads	3 Each

Location 19 - Details for US 40 & SR 310

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing "H" Span. Also recut detector loop L-10. (2-left turn arrow signal heads)

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	8 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	2 Each
Item 632	Detector Loop	1 Each
Item 632	Tether Wire with Accessories, As Per Plan	436 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	10 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each

Location 20 - Details for IR 70 WB ramps & SR 37

The work at this location shall include installing a ground mounted UPS with riser on the back side of the signal cabinet.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each
Item 633	Controller Work Pad	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each
Item 633	Controller Item Misc.: Modify Cabinet Foundation	1 Each

Location 21 - Details for IR 70 EB ramps & SR 37

The work at this location shall include installing a ground mounted UPS with riser on the back side of the signal cabinet. Also recut detector loops L-11 & L-12 (SR 37 NB back loops).

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each
Item 632	Detector Loop	2 Each
Item 633	Controller Work Pad	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each
Item 633	Controller Item Misc.: Modify Cabinet Foundation	1 Each

Location 22 - Details for SR 310 & CR 25 (Morse Rd.)

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Simple Span. Also separate 4 sets of 2-way signal heads. Move heads "A & B", 2' towards cabinet. Move head "C", 2' away from cabinet. Move head "F", 2' towards cabinet. Also recut detector loop L-6 (SB front).

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Signal Cable, 5-Conductor, No. 14 AWG.	135 Foot
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	8 Each
Item 632	Detector Loop	1 Each
Item 632	Tether Wire with Accessories, As Per Plan	155 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	8 Each
Item 632	Signalization Misc.: Span Wire Adjustment	2 Each
Item 632	Signalization Misc.: Unlash and Relash Messenger Wire	90 Foot
Item 632	Signalization Misc.: Separate existing 2-Way Signal Heads into 2 Separate 1-Way Signal Heads	4 Each

Location 23 - Details for IR 70 WB ramps & SR 310

The work at this location shall include installing a ground mounted UPS with riser on the back side of the signal cabinet.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each
Item 633	Controller Work Pad	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each
Item 633	Controller Item Misc.: Modify Cabinet Foundation	1 Each

Location 24 - Details for IR 70 EB ramps & SR 310

The work at this location shall include installing a ground mounted UPS with riser on the back side of the signal cabinet.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each
Item 633	Controller Work Pad	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each
Item 633	Controller Item Misc.: Modify Cabinet Foundation	1 Each

Location 25 - Details for US 40 & Etna Pkwy

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Box with Tails Span.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	7 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	1 Each
Item 632	Tether Wire with Accessories, As Per Plan	461 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	8 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each

Location 26 - Details for IR 70 EB ramps & SR 13

The work at this location shall include installing a ground mounted UPS with riser on the back side of the signal cabinet. Also recut detector loops L-5 & L-6.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each
Item 632	Detector Loop	2 Each
Item 633	Controller Work Pad	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each
Item 633	Controller Item Misc.: Modify Cabinet Foundation	1 Each

Location 27 - Details for IR 70 WB ramps & SR 13

The work at this location shall include installing a ground mounted UPS with riser on the back side of the signal cabinet.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each
Item 633	Controller Work Pad	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each
Item 633	Controller Item Misc.: Modify Cabinet Foundation	1 Each

Location 28 - Details for US 40 & CR 42 (Watkins Rd.)

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing "H" Span. Also recut detector loops L-11 (Watkins Rd. lt turn) & L-5 (US 40 EB Lt.)

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	9 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	1 Each
Item 632	Detector Loop	2 Each
Item 632	Tether Wire with Accessories, As Per Plan	311 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	10 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each

Location 29 - Details for SR 16/37 & 661 WB ramps

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Box with Tails Span. Also installing a ground mounted UPS (1600 watt) with riser on the back side of the signal cabinet.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	5 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	1 Each
Item 632	Tether Wire with Accessories, As Per Plan	235 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	6 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each
Item 633	Controller Work Pad	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each
Item 633	Cabinet Foundation, As Per Plan	1 Each

Location 30 - Details for SR 16/37 & 661 EB ramps

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing 3-Simple Spans.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	5 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	1 Each
Item 632	Tether Wire with Accessories, As Per Plan	250 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	6 Each
Item 632	Signalization Misc.: Span Wire Adjustment	3 Each

Location 31 - Details for SR 310 & Refugee Rd.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Box with Tails Span. Install a ground mounted UPS with riser and work pad.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	8 Each
Item 632	Tether Wire with Accessories, As Per Plan	404 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	8 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each
Item 633	Controller Work Pad	1 Each
Item 633	Controller Item Misc.: Modify Cabinet Foundation	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each

Location 32 - Details for US 62 & CR 33 (Duncan Plains Rd.)

The work at this location shall include replacing the existing signal heads with new signal heads with backplates on existing Mast Arms.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	6 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	2 Each
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	8 Each

Location 33 - Details for US 40 & Columbia Rd.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Box with Tails Span.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate,	8 Each

	As Per Plan	
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	2 Each
Item 632	Tether Wire with Accessories, As Per Plan	442 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	10 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each

Muskingum County Locations

Location 34 - Details for SR 60 & Raiders Rd.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Simple Span. Also separate 1 set of 2-way signal heads. Move head "S7" 2' farther from head "S6". Install a ground mounted UPS with riser and work pad.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	4 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	4 Each
Item 632	Tether Wire with Accessories, As Per Plan	185 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	8 Each
Item 632	Signalization Misc.: Span Wire Adjustment	2 Each
Item 632	Signalization Misc.: Unlash and Relash Messenger Wire	10 Foot
Item 632	Signalization Misc.: Separate existing 2-Way Signal Heads into 2 Separate 1-Way Signal Heads	1 Each
Item 633	Controller Work Pad	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each
Item 633	Controller Item Misc.: Modify Cabinet Foundation	1 Each

Location 35 - Details for US 40 & Richards Rd.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates on existing Mast Arms.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	6 Each

Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	1 Each
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	7 Each

Location 36 - Details for US 40 & Dillion Falls Rd.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Simple Span. Separate 2 sets of 2-way signal heads "C & E" and "D & F" by moving heads "E & F" 2' closer to signal cabinet. Install pole mounted UPS.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	6 Each
Item 632	Tether Wire with Accessories, As Per Plan	162 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	6 Each
Item 632	Signalization Misc.: Span Wire Adjustment	2 Each
Item 632	Signalization Misc.: Unlash and Relash Messenger Wire	20 Foot
Item 632	Signalization Misc.: Separate existing 2-Way Signal Heads into 2 Separate 1-Way Signal Heads	2 Each
Item 633	Controller Work Pad	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each

Location 37 - Details for SR 60 & Bridge St.

The work at this location shall include separating 3 sets of 2-way signal heads.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Signalization Misc.: Unlash and Relash Messenger Wire	40 Foot
Item 632	Signalization Misc.: Separate existing 2-Way Signal Heads into 2 Separate 1-Way	3 Each

Location 38 - Details for US 22 & Panther Dr.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Box with Tails Span. Separate 1 set of back to back signal heads (H & I) by moving them 1' each way. (2-left turn arrow heads)

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each

Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	12 Each
Item 632	Tether Wire with Accessories, As Per Plan	395 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	12 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each
Item 632	Signalization Misc.: Unlash and Relash Messenger Wire	20 Foot
Item 632	Signalization Misc.: Separate existing 2-Way Signal Heads into 2 Separate 1-Way	1 Each

Location 39 - Details for SR 719 & Juanita Dr.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Simple Span. Separate 2 sets of back to back signal heads (2 & 6 and 4 & 8) by moving heads 2 & 4, 2' to 3' west (away from signal cabinet). Also install a pull mounted UPS, opposite of the control cabinet.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	8 Each
Item 632	Signal Cable, 5-Conductor, No. 14 AWG	160 Foot
Item 632	Tether Wire with Accessories, As Per Plan	152 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	8 Each
Item 632	Signalization Misc.: Span Wire Adjustment	2 Each
Item 632	Signalization Misc.: Unlash and Relash Messenger Wire	100 Foot
Item 632	Signalization Misc.: Separate existing 2-Way Signal Heads into 2 Separate 1-Way	2 Each
Item 633	Controller Work Pad	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each

Location 40 - Details for US 22 & Walmart Ent.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Box with Tails Span.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	9 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	1 Each

Item 632	Tether Wire with Accessories, As Per Plan	460 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	10 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each

Location 41 - Details for SR 60 & North Pointe Dr.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Box with Tails Span. Install ground mounted UPS with riser and work pad.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	8 Each
Item 632	Tether Wire with Accessories, As Per Plan	552 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	8 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each
Item 633	Controller Work Pad	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each
Item 633	Controller Item Misc.: Modify Cabinet Foundation	1 Each

Location 42 - Details for SR 146 & OUZ/MATC Ent.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates on existing Mast Arms.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	6 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	2 Each
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	8 Each

Location 43 - Details for SR 60 & Millers Ln.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing Box with Tails. Install pole mounted UPS.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	7 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	1 Each
Item 632	Tether Wire with Accessories, As Per Plan	333 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	8 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each
Item 633	Controller Work Pad	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each

Location 44 - Details for SR 146 & North Pointe Dr.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates and installing bottom tether wires for the existing "H". Install ground mounted UPS with riser to existing cabinet foundation.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 625	Ground Rod	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	4 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	4 Each
Item 632	Tether Wire with Accessories, As Per Plan	278 Foot
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	8 Each
Item 632	Signalization Misc.: Span Wire Adjustment	4 Each
Item 633	Controller Work Pad	1 Each
Item 633	Uninterruptible Power Supply (UPS), As Per Plan	1 Each
Item 633	Controller Item Misc.: Modify Cabinet Foundation	1 Each

Location 45 - Details for SR 146 & Adams Ln.

The work at this location shall include replacing the existing signal heads with new signal heads with backplates on existing Mast Arms.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	4 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Vehicular Signal Head, LED, Black, 3-Section, 12" Lens, 1-Way with Backplate, As Per Plan	5 Each
Item 632	Vehicular Signal Head, LED, Black, 5-Section, 12" Lens, 1-Way with Backplate, As Per Plan	1 Each
Item 632	Removal of Miscellaneous Traffic Signal Item, Vehicular Signal Head	6 Each

Perry County Location

Location 46 - Details for SR 13 & SR 204

The work at this location shall include separating 1 set of back to back signal heads. Move EB head 2' to 3' closer towards cabinet, making sure to maintain at least 8' horizontal separation.

This work shall be performed while traffic is maintained by an LEO and or flaggers.

The following quantities have been included in the General Summary for this intersection:

Item 614	Maintaining Traffic Misc.: Per Location	1 Each
Item 614	Law Enforcement Officer with Patrol Car for Assistance	1 Hour
Item 624	Mobilization, As Per Plan	1 Each
Item 632	Signalization Misc.: Unlash and Relash Messenger Wire	10 Foot
Item 632	Signalization Misc.: Separate existing 2-Way Signal Heads into 2 Separate 1-Way Signal Heads	1 Each

Locations per Participation Breakdowns

Interstate
Locations: 15,16,20,21,23,24,26,27

NHS (non-Interstate)
Locations: 1,2,3,4,5,17

OFAH (Urban)
Locations: 6,7,8,9,10,11,12,13,14,18,19,25,29,31,33,35,38,39,40,42,44,45

OFAH (Rural)
Locations: 22,28,30,32,34,36,37,41,43,46

GENERAL SUMMARY

PARTICIPATION				ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
INTERSTATE	NHS (NON-INTERSTATE)	URBAN (OFAH)	RURAL (OFAH)					
12	10	86	37	614	11110	145	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE
9	6	22	10	614	18000	47	EACH	MAINTAINING TRAFFIC MISC.: PER LOCATION
9	6	22	10	624	15001	47	EACH	MOBILIZATION, AS PER PLAN
120				625	25902	120	FOOT	CONDUIT, 3", JACKED OR DRILLED,
2				625	30706	2	EACH	PULL BOX, 725.08, 18"
6	1	6	4	625	32000	17	EACH	GROUND ROD
17	7	159	53	632	05007	236	EACH	VEHICULAR SIGNAL HEAD, LED, BLACK, 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE WITH BACKPLATE, AS PER PLAN
		3		632	05067	3	EACH	VEHICULAR SIGNAL HEAD, LED, BLACK, 4-SECTION, 12" LENS, 1-WAY, POLYCARBONATE WITH BACKPLATE, AS PER PLAN
3		20	9	632	05087	32	EACH	VEHICULAR SIGNAL HEAD, LED, BLACK, 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE WITH BACKPLATE, AS PER PLAN
5	5	1	3	632	26500	14	EACH	DETECTOR LOOP
143	415	5779	1948	632	30601	8285	FOOT	TETHER WIRE WITH ACCESSORIES, AS PER PLAN
	63	160	135	632	40500	358	FOOT	SIGNAL CABLE, 5-CONDUCTOR, No. 14 AWG.
216	276	39	129	632	65200	660	FOOT	LOOP DETECTOR LEAD-IN CABLE
20	7	182	62	632	90020	271	EACH	REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM, VEHICULAR SIGNAL HEAD
		6		632	90400	6	EACH	SIGNALIZATION MISC.: POWER CABLE ADJUSTMENT
2	2	62	21	632	90400	87	EACH	SIGNALIZATION MISC.: SPAN WIRE ADJUSTMENT
	3	8	11	632	90400	22	EACH	SIGNALIZATION MISC.: SPLIT EXISTING 2-WAY SIGNAL HEADS INTO 2 SEPARATE 1-WAY SIGNAL HEADS
	96	220	130	632	90500	446	FOOT	SIGNALIZATION MISC.: UNLASH AND RELASH MESSENGER WIRE
	1	1		633	67101	2	EACH	CABINET FOUNDATION, AS PER PLAN
6	1	6	4	633	67200	17	EACH	CONTROLLER WORK PAD
6	1	6	4	633	74001	17	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), AS PER PLAN
6		4	2	633	99000	12	EACH	CONTROLLER ITEM, MISC.: MODIFY CABINET FOUNDATION