



# Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

February 21, 2013

SUBJECT: FAI Route 80(I-80)  
Project ESP-080-5(071)149  
Section 2012-0711  
Will & Cook Counties  
Contract No. 60V81  
Item No. 67, March 8, 2013 Letting  
Addendum A

## NOTICE TO PROSPECTIVE BIDDERS:

Attached is an addendum to the plans or proposal. This addendum involves revised and/or added material.

1. Replaced the Schedule of Prices.
2. Revised the Table of Contents to the Special Provisions.
3. Revised pages 36, 37, 62 – 70 and 166 of the Special Provisions.
4. Revised sheets 1, 2 & 4 of the Plans.
5. Added sheets 37A & 37B to the Plans.

Prime contractors must utilize the enclosed material when preparing their bid and must include any Schedule of Prices changes in their bidding proposal.

Bidders using computer-generated bids are cautioned to reflect any and all Schedule of Prices changes, if involved, into their computer programs.

Very truly yours,

John D. Baranzelli, P. E.  
Acting Engineer of Design and Environment

A handwritten signature in black ink, appearing to read 'Ted B. Walschleger P.E.'.

By: Ted B. Walschleger, P. E.  
Engineer of Project Management

cc: John Fortmann, Region 1, District 1; Mike Renner; Estimates

dp

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 SCHEDULE OF PRICES  
 CONTRACT  
 NUMBER -

60V81

State Job # - C-91-154-09

County Name - COOK- WILL-  
 Code - 31 - 197 -  
 District - 1 - 1 -  
 Section Number - 2012-0711

Project Number  
 ESP-0805/071/149

Route  
 FAI 80

\* REVISED: FEBRUARY 20, 2013

| Item Number   | Pay Item Description  | Unit of Measure | Quantity   | x | Unit Price | = | Total Price |
|---------------|-----------------------|-----------------|------------|---|------------|---|-------------|
| X0323898      | CCTV DOME CAMERA      | EACH            | 2.000      |   |            |   |             |
| X0323914      | FOC SPLICE - LATERAL  | EACH            | 9.000      |   |            |   |             |
| X0325040      | FO INNERDUCT 1 1/4"   | FOOT            | 53,375.000 |   |            |   |             |
| X0326946      | CCTV CAMERA INSTALL   | EACH            | 2.000      |   |            |   |             |
| X0326948      | CCTV CAMERA STR 50 MH | EACH            | 2.000      |   |            |   |             |
| *ADD X0326949 | CCTV CAMERA ST FD 30D | FOOT            | 20.000     |   |            |   |             |
| X0326964      | FO INTERCONNECT CAB   | EACH            | 1.000      |   |            |   |             |
| X0327561      | BUDG ALLOW CCTV INTGR | L SUM           | 1.000      |   |            |   |             |
| X0327562      | CCTV CAM CONTROLLER   | EACH            | 2.000      |   |            |   |             |
| X0327563      | MOD CNTRLR F CCTV PWR | EACH            | 2.000      |   |            |   |             |
| *ADD X0327571 | CCTV EQUIP CABINET GM | EACH            | 2.000      |   |            |   |             |
| X7011015      | TR C-PROT EXPRESSWAYS | L SUM           | 1.000      |   |            |   |             |
| X8710035      | FIB OPT CBL 96F SM    | FOOT            | 56,538.000 |   |            |   |             |
| X8710036      | FIB OPT CBL 12F SM    | FOOT            | 2,387.000  |   |            |   |             |
| Z0013798      | CONSTRUCTION LAYOUT   | L SUM           | 1.000      |   |            |   |             |
| Z0033052      | COMMUNICATIONS VAULT  | EACH            | 21.000     |   |            |   |             |
| 67000400      | ENGR FIELD OFFICE A   | CAL MO          | 12.000     |   |            |   |             |



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## **FIBER OPTIC INTERCONNECT CABINET**

Effective: January 1, 2011

Description. This item shall consist of furnishing and installing an outside plant fiber optic interconnect cabinet. The cabinet shall have sufficient space and mounting appurtenances to store a total of six 96-fiber cable splices, 120v power, and a shelf for the installation of media converts and Ethernet switches. The splice enclosures used for determining the size shall be full size closures, i.e., not a "mini" variant. The cabinet shall be similar to a Multilink 4 Bay OTN cabinet. The minimum dimensions of the cabinet shall be 78"W x36"D x 62"H, however the cabinet may need to be larger to accommodate the number of splice enclosures specified.

Enclosure.

Main Body: 1/8" Aluminum 5052-H32.  
Hardware: Type 304 Stainless Steel.  
Finish: Polyester Powder Coated.  
Racks: 3/16" Aluminum, E.I.A. / T.I.A. spacing (10-32 threads).  
Doors: Minimum of 4 with 3 point latches, padlock able.

Main Cabinet:

2 - 19"-23" Adjustable width racks, also adjustable front to rear position (43" tall)  
2 - 19"23" Adjustable width racks, swing out for ease of rear equipment access  
(40" tall)  
Minimum of 166" of total inches of rack space (95 RU)

The lock shall be Corbin #2 and two keys shall be supplied to the Department with each lock. The keys shall be removable in the locked position only.

A data pocket of high impact thermoplastic material shall be provided. The nominal dimensions of this pocket shall be 12 inches by 12 inches.

Collar studs shall be provided for mounting the stainless steel backboard panel.

The interconnect cabinet at the I-355 interchange shall have 120v power extended from the existing lighting controller as a part of this item. The cables, raceway, and trench and backfill shall be paid for separately. All other work to provide power to the cabinet shall be included in the cost of this item.

The contractor may provide a rack mounted DC power supply to power the media converters and Ethernet switches as long as the power supply is fully coordinated with the other equipment manufacturers. Otherwise a sufficient quantity of 120v outlets shall be provided for the individual power supplies. Outlets shall be surge protected and shall rated for the environment. Standard corded outlet strips are not acceptable.

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The outlets shall be of sufficient quantity to provide outlets for all equipment required in the cabinet plus and additional spare duplex outlet. A surge suppressor shall be provided for the outlets. The outlets shall be suitable for the application and cannot be typical indoor power strips.

Installation. The cabinet shall be installed on a concrete foundation as a part of this item. The Contractor shall confirm the orientation of the cabinet, with the Engineer, prior to installing the foundation. A reinforced portland cement concrete foundation shall be constructed in accordance with the cabinet manufacturer's instructions and shall be a minimum of 36" deep. The top of the foundation shall extend a minimum of 12-inches above grade.

Two 4-inch diameter galvanized steel conduit stub out with large radius sweeps shall be provide on each side of the cabinet foundation for a total of eight.

The cabinet shall be set plumb and level on the foundation. It shall be fastened to the anchor rods with hot-dipped galvanized or stainless steel nuts and washers. Foundation mounted lighting controllers shall be caulked at the base with silicone.

All conduit entries shall be sealed with a rodent and dust/moisture barrier.

Work Pad. A poured, 5 inch thick concrete pad, extending not less than 48 in. from the foundation edge shall be provided. ~~on all four sides of the cabinet.~~

Method Of Measurement. Fiber optic interconnect cabinet shall be counted, each installed.

Basis Of Payment. This item shall be paid at the contract unit each for **FIBER OPTIC INTERCONNECT CABINET** as specified.

### **FIBER OPTIC SPLICE**

Effective: April 1, 2005

Description. The Contractor will splice optical fibers from different cable sheaths and protect them with a splice closure at the locations shown on the Plans. Fiber splicing consists of in-line fusion splices for all fibers described in the cable plan at the particular location.

Two splices are identified. A mainline splice includes all fibers in the cable sheath. In a lateral splice, the buffer tubes in the mainline cable are dressed out and those fibers identified on the plans are accessed in and spliced to lateral cables.

Materials.

Splice Closures. Splice Closures shall be designed for use under the most severe conditions such as moisture, vibration, impact, cable stress and flex temperature extremes as demonstrated by successfully passing the factory test procedures and minimum specifications listed below:

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Safety Requirements / Agency Approvals. The Ethernet switch shall comply with the following electrical safety requirements or equivalents: UL60950 or CSA C22.2 No. 60950 (safety requirements for IT equipment). The Ethernet switch shall also have CE (Europe) qualification. The Ethernet switch shall also comply with FCC Part15 Class A for EMI emissions.

**Fiber Optic Cable Termination**

The Contractor shall include all necessary wires and cables necessary to interconnect the components of the CCTV cabinet. The Contractor shall provide a factory terminated patch block with a 12 fiber pigtail of sufficient length to connect to the lateral splice handhole without the use of any intermediate splices. The patch block shall be a Fiber Connections, Gator Patch II or approved equal..

**Method Of Measurement.** CCTV equipment shall be counted, each installed.

**Basis Of Payment.** This item shall be paid at the contract unit each for **CCTV CAMERA CONTROLLER** of the distribution method specified.



## **CCTV CAMERA STRUCTURE**

Effective: March 1, 2010

### Description:

This item shall consist of furnishing and installing a conventional type round tapered aluminum pole complete with CCTV camera mount and all required hardware including bolt covers as specified herein.

### Materials:

#### Pole Shaft

Unless otherwise indicated the shaft shall be made of aluminum alloy conforming to current ASTM designation B 221, alloy 6063 with final temper T6. The shaft shall be spun drawn to smooth circular, tubular, seamless, tapered design.

Unless otherwise indicated, the pole shall be designed and manufactured to withstand loadings of up to and including a 34.019 kg (75 pound) camera having an effective projected area of 0.149 m<sup>2</sup> (1.6 ft<sup>2</sup>) on a single 4 foot arm, and shall also to withstand loadings of up to and including the same camera on each of two 3.658 m (12 foot) arms (twin) oriented at any angle from 45 to 180 degrees apart, meeting the criteria of AASHTO for 128.748 km/h (80 mph) wind loading with 167.371 km/h (104 mph) gusts. These loading requirements shall include all camera and arm combinations possible for the given pole height, up to and including the limits given. Information submitted for approval shall document satisfaction of this requirement.

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The indicated mounting height shall be taken from the bottom of the pole shaft base plate and shall be obtained with a nominal arm rise of 863.6 mm (34-inches) as specified elsewhere herein. This shall determine the required length of the pole shaft regardless of the actual mounting method of the pole.

Unless otherwise indicated, poles for mounting heights of 10.668 m (35 feet) or less shall have a single piece shaft with a 203.2 mm (8 inch) outside bottom diameter tapering to 114.3 mm (4.5 inch) outside top diameter. The shafts shall be designed to accommodate loading of the arm configuration indicated, but the minimum design criteria shall be to accommodate loading on a single arm of length from 1.219 m to 3.048 m (4 to 10 feet) and loading on twin arms of length from 1.219 m to 1.829 m (4 to 6 feet) oriented 180 degrees apart, all with a minimum wall thickness of 5.563 mm (0.219 inch). Where the indicated arm configuration exceeds these minimum criteria, the wall thickness shall be increased to satisfy the design loading requirements.

Unless otherwise indicated, poles for mounting heights greater than 10.668 (35 feet) but less than 12.07m (47.5 feet) shall have a single piece shaft with a 254.0 mm (10 inch) outside bottom diameter tapering to 12.77 mm (6 inch) outside top diameter. The shafts shall be designed to accommodate loading of the arm configuration indicated, but the minimum design criteria shall be to accommodate loading on a single arm of length from 1.219 m to 4.572 m (4 to 15 feet) and loading on twin arms of length from 1.219 m to 3.658 m (4 to 12 feet) oriented 180 degrees apart, all with a minimum wall thickness of 6.35 mm (0.250 inch). Where the indicated arm configuration exceeds these minimum criteria, the wall thickness shall be increased to satisfy the design loading requirements.

Unless otherwise indicated, poles for mounting heights of 14.478 m (47.5-feet) shall have a 254.0 mm (10 inch) outside bottom diameter tapering to 152.4 mm (6 inch) outside top diameter. The shafts shall be designed to accommodate loading of the arm configuration indicated, but the minimum design criteria shall be to accommodate loading on a single arm of length from 1.219 m to 4.572 m (4 to 15 feet) and loading on twin arms of length from 1.219 m to 3.658 m (4 to 12 feet) oriented 180 degrees apart, all with a minimum wall thickness of 6.35 mm (0.250 inch). Where the indicated arm configuration exceeds these minimum criteria, the wall thickness shall be increased to satisfy the design loading requirements.

Unless otherwise indicated, poles for mounting heights greater than 14.478 m (47.5 feet) but less than 19.812 m (65 feet) shall have a 304.8 mm (12-inch) outside bottom diameter tapering to a 114.3 mm (4.5-inch) outside top diameter. The shafts shall be designed to accommodate loading of the arm configuration indicated, but the minimum design criteria shall be to accommodate loading on a single arm of length from 1.219 m to 4.572 m (4 to 15 feet) and loading on twin arms of length from 1.219 m to 3.658 m (4 to 12 feet) oriented 180 degrees apart, all with a minimum wall thickness of 6.35 mm (0.250 inch). Where the indicated arm configuration exceeds these minimum criteria, the wall thickness shall be increased to satisfy the design loading requirements.

**Handhole.** There shall be an oval shaped opening in the side of the shaft for the purpose of a handhole. Unless otherwise indicated, the centerline of the handhole shall be 457.2 mm (18") from the bottom of the shaft. The handhole shall be 101.6 mm X 203.2 mm (4" x 8") in size with the 203.2 mm (8") dimension being situated vertically and in the same plane as any one of the sides of the base. The opening in the shaft shall be reinforced with a handhole frame situated on the inside of the shaft and welded to the shaft. A 12.7 mm (1/2")-13 tapped hole shall be provided in the frame for attaching a mechanical grounding connector. The handhole cover shall be fastened to the frame with 25.4 mm (1/4")-20 size steel core nylon hex-head screws and the holes for the screws shall be tapped to match the screws. Unless otherwise indicated, the orientation of the handhole shall be such that its pole face shall be opposite to the pole face exposed to oncoming traffic and unless otherwise indicated, the handhole shall be oriented on a face 90 degrees from arm orientation.

All exposed surfaces of the shaft shall be of a smooth, even texture, free from marks and imperfections. The pole shall have a satin ground finish, 100 grit or finer.

**Cap.** Top of the shaft shall be enclosed with a removable cap. The cap shall be secured in place with 300 series stainless steel screws. The design of the cap shall be such that it shall not permit entry of water into the shaft.

Grommets at the top portion of the shaft two 38.1 mm (1 1/2") diameter openings shall be made and two 31.75 mm (1 1/4") inside diameter rubber grommets shall be provided, for wiring purposes through the top member(s) of the arm(s). The grommet openings shall be at 90 degree angles from the position of the handhole, i.e., there shall be two (2) grommet openings for each shaft, 180 degrees apart from each other and at 90 degrees apart from the handhole, unless otherwise indicated.

**Base Plate.** The bottom portion of the shaft shall be fitted with a base. The base shall be a permanent mold casting of aluminum alloy conforming to current Aluminum Association designations 356.0 or 4356.0, with final temper T6. The base shall be welded to the shaft by the inert gas shielded arc method. All welds shall be free from cracks and pores. All shafts with base plates shall be heat treated after welding. The base shall be equipped with anchor bolt covers. Anchor bolt slots shall be provided in the base to accommodate the required bolt circle diameter. Unless otherwise indicated, poles for mounting heights of 10.668 m (35-feet) or less shall have 292.1 mm (11.5-inch) bolt circles and poles for mounting heights greater than 10.668 m (35-feet) shall have 381.0 mm (15-inch) bolt circles. The size of the slots shall be 1 1/4 inch by 2 inches as detailed on the pole drawing.

**Anchor Bolt Covers.** The anchor bolt covers shall be made from aluminum, conforming to current ASTM B 108, S5A F or, B 26, SG70A. The anchor bolt covers shall be fastened to the base with 6.35 mm (1/4) 20 threaded steel reinforced plastic fasteners. The fasteners shall be threaded with 6.35 mm (1/4) 20 threaded holes for bolt covers.

Vibration Damper. The pole shall be coordinated with all cameras being provided on this project to be free of susceptibility to harmful harmonics and vibrations. The pole shall incorporate an internal vibration damper. The material submitted for approval shall address this requirement.

Bundling. The shafts shall be shipped in bundles without any wrapping on the individual shafts or the entire bundle. Appropriate bundling materials shall be used to make a rigid, long lasting bundle capable of being handled, shipped and stored without shifting or breaking of contents.

#### Arm

The arm shall be made of aluminum alloy tube, round, seamless, conforming to the current ASTM Designation B 221 and Designation 6063 T6.

Top members of the arms shall have raceway openings extending through the bracket. Raceway openings shall be free of burrs and rough edges that may be injurious to the wires.

The arms shall be supplied with fabricated aluminum brackets welded to the arms. All welds shall be heat treated after welding. The fastening of the arms to the shaft shall be clamp type bracket with stainless steel bolts, nuts and lockwashers.

All hardware shall be anodized aluminum conforming to the current ASTM Designation B 211, 2024 T4, or 300 series stainless steel.

Exterior surfaces of the arms shall be free of all protuberances, dents, cracks, or other imperfections.

The arms shall be shipped in bundles without any wrapping on the individual arms or the entire bundle. Appropriate bundling materials shall be used to make a rigid, long lasting bundle capable of being handled, shipped and stored without shifting or breaking of contents.

Unless otherwise indicated, the rise of the arm, shall be 863.6 mm (34-inches)

#### Vibration requirements:

The detailed design and fabrication of the shaft and of the arms shall be such as to withstand 128.748 kmph (80 MPH) AASHTO criteria for wind and vibrations, caused by the wind pressure.

There shall be no excessive vibrations in the shaft, arm(s) under moderate wind pressure, where damage may result to the camera(s) and/or its component parts, and/or arms(s). A dampening device, as an integral part of the shaft, shall be installed in the shaft to alleviate such excessive vibrations. The proposed vibration dampening device shall be submitted for Engineer's approval.

No information contained herein shall be construed to relieve the Contractor of the above requirements.

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Certification and guarantee:

The submittal information shall include a written certification of compliance with the contract requirements from the Manufacturer. The certification shall specifically identify the project route, location, section number, and contract number, as applicable and shall identify specifically the equipment covered by the certification. The certification shall be made on the Manufacturer's corporate stationery and it shall be dated and signed by a responsible officer of the company, with the signee's title listed.

In addition submittal information shall include the guarantee as specified under General Electrical Provisions.

Installation:

The lighting unit shall be set plumb on the foundation without the use of shims, grout or any other leveling devices under the pole base. The arm or arms shall be set at right angles to the centerline of the pavement. (The leveling area of the camera shall be set in a plane parallel to the roadway taking into consideration the up grade or down grade and the super elevation of the roadway).

This item shall be coordinated with the applicable camera (with pole wire and fusing), foundation and anchor bolts, breakaway device (as applicable) which shall be provided under separate pay items, as applicable.

Poles shall not be installed until cameras are available for installation at the same time the poles are installed. Poles shall not be installed and left standing without a coordinated installation of arm and camera. **POLES SHALL NOT BE PAID UNLESS THE COORDINATED ASSEMBLY, IS COMPLETE.**

Basis of payment:

This item shall be paid for at the contract unit price each for **CCTV CAMERA STRUCTURE**, of the mounting height, indicated, which shall be payment in full for the work as described herein.

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## **CCTV EQUIPMENT CABINET – GROUND MOUNT**

Effective: February 14, 2013

### **Description.**

This work shall consist of all materials and labor required to install, a ground mounted CCTV equipment cabinet.

### **Materials.**

General. The cabinet shall be constructed in accordance with UL Std. 508A, Industrial Control Panel, and carry the UL label.

Enclosure. The cabinet shall be UL 50, NEMA Type 3R unfinished single door design with back panel. The cabinet shall be fabricated from Type 5052 H-32 aluminum with the frame and door 0.125-inch (3.175 mm) thick, the top 0.250-inch (6.350 mm) thick and the bottom 0.500-inch (12.70 mm) thick. Seams shall be continuous welded and ground smooth. The door and door opening shall be double flanged. The door shall be approximately 80% of the front surface, with a full length tamperproof stainless steel .075-inch (1.91 mm) thick hinge bolted to the cabinet with stainless steel carriage bolts and nylocks nuts. The locking mechanism shall be slam-latch type with a keyhole cover. The cabinet shall be sized to adequately house all required components with extra space for arrangement and termination of wiring. A minimum size of 40-inches (1000 mm) high, 16-inches (400 mm) wide and 15-inches (375 mm) in depth is required. The cabinet shall include a meter socket compatible and coordinated with the electric utility as required. The cabinet shall be mounted upon a square Type A concrete foundation as indicated on the plans. The foundation shall be included in the cost of this item and not paid for separately.

Ground and Neutral Bus Bars. A single copper ground and neutral bus bar, mounted on the equipment panel shall be provided. Ground and neutral conductors shall be separated on the bus bar. Compression lugs, plus 2 spare lugs, shall be sized to accommodate the cables with the heads of the connector screws painted green for ground connections and white for neutral connections.

Utility Services Connection. Were required; the Contractor shall notify the Utility Company marketing representative a minimum of 30 working days prior to the anticipated date of hook-up. This 30 day advance notification will begin only after the Utility Company marketing representative has received service charge payments from the Contractor. Prior to contacting the Utility Company marketing representative for service connection, the service installation controller cabinet and cable must be installed for inspection by the Utility Company.

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Ground Rod. Ground rods shall be copper-clad steel, a minimum of 10 feet (3.0m) in length, and 3/4 inch (20mm) in diameter. Ground rod resistance measurements to ground shall be 25 ohms or less. If necessary additional rods shall be installed to meet resistance requirements at no additional cost to the contract.

Concrete Foundation. This work shall include a concrete foundation as specified in Article 878 and as indicated in the plans and not be paid for separately. Add the following to Article 878.03 of the Standard Specifications:

All anchor bolts shall be according to Article 1006.09, with all anchor bolts hot dipped galvanized a minimum of 12 in. (300 mm) from the threaded end. foundations shall be a minimum depth of 48 inches (1220 mm).

The foundation shall extend 12-inches above the finished grade.

### **Installation.**

General. The Contractor shall confirm the orientation of the installation and its door side with the engineer, prior to installation. All conduit entrances into the service installation shall be sealed with a pliable waterproof material.

The cabinet shall be mounted plumb and level on the foundation and fastened to the anchor bolts with hot-dipped galvanized or stainless steel nuts and washers. The space between the bottom of the enclosure and the top of the foundation shall be caulked at the base with silicone.

### **Basis of Payment.**

The service installation shall be paid for at the contract unit price each for **CCTV EQUIPMENT CABINET – GROUND MOUNT**, which shall be payment in full for the work described herein. Utility company charges shall be paid for under the pay item Electric Utility Service Connection.

**CLOSED CIRCUIT DOME VIDEO CAMERA**

Effective: August 1, 2012

1. **Description.**

This item shall consist of furnishing an integrated Closed-Circuit Television (CCTV) Dome Camera Assembly as described herein and as indicated in the Plans.

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