

RETURN WITH BID

State of _____)
) ss.
County of _____)

AFFIDAVIT

_____, of _____,
(name of affiant) *(bidder)*

being first duly sworn upon oath, states as follows:

1. That I am the _____ of _____
(Officer or position) *(Bidder)*
and have personal knowledge of the facts herein stated.

2. That, if selected under this bid proposal, _____ will
(Bidder)
maintain a business office in the State of Illinois which will be located in _____
County, Illinois.

3. That this business office will serve as the primary place of employment for any persons
employed in the construction contemplated by this bid proposal.

4. That this Affidavit is given as a requirement of state law as provided in Section 30-22(8) of
the Illinois Procurement Code.

(Signature)

(Printed name of Affiant)

This instrument was signed and attested before me on the _____ day of _____, 20 ____

by _____.
(Notary Public Name)

(Notary Public Signature)

(NOTARY SEAL)

BID PROPOSAL INSTRUCTIONS

ABOUT IDOT PROPOSALS: All proposals are potential bidding proposals. Each proposal contains all certifications and affidavits, a proposal signature sheet and a proposal bid bond.

PREQUALIFICATION

Any contractor who desires to become pre-qualified to bid on work advertised by IDOT must submit the properly completed pre-qualification forms to the Bureau of Construction no later than 4:30 p.m. prevailing time twenty-one days prior to the letting of interest. This pre-qualification requirement applies to first time contractors, contractors renewing expired ratings, contractors maintaining continuous pre-qualification or contractors requesting revised ratings. To be eligible to bid, existing pre-qualification ratings must be effective through the date of letting.

WHO CAN BID ?

Bids will be accepted from only those companies that request and receive written Authorization to Bid from IDOT's Central Bureau of Construction.

REQUESTS FOR AUTHORIZATION TO BID

Contractors wanting to bid on items included in a particular letting must submit the properly completed "Request for Authorization to Bid/or Not For Bid Status" (BDE 124) and the ORIGINAL "Affidavit of Availability" (BC 57) to the proper office no later than 4:30 p.m. prevailing time, three (3) days prior to the letting date.

WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID?

When a prospective prime bidder submits a "Request for Authorization to Bid/or Not For Bid Status"(BDE 124) he/she must indicate at that time which items are being requested For Bidding purposes. Only those items requested For Bidding will be analyzed. After the request has been analyzed, the bidder will be issued an **Authorization to Bid or Not for Bid Report**, approved by the Central Bureau of Construction and the Chief Procurement Officer that indicates which items have been approved For Bidding. If **Authorization to Bid** cannot be approved, the **Authorization to Bid or Not for Bid Report** will indicate the reason for denial.

ABOUT AUTHORIZATION TO BID

Firms that have not received an Authorization to Bid or Not For Bid Report within a reasonable time of complete and correct original document submittal should contact the Department as to the status. Firms unsure as to authorization status should call the Prequalification Section of the Bureau of Construction at the number listed at the end of these instructions.

ADDENDA AND REVISIONS

It is the bidder's responsibility to determine which, if any, addenda or revisions pertain to any project they may be bidding. Failure to incorporate all relevant addenda or revisions may cause the bid to be declared unacceptable.

Each addendum or revision will be included with the Electronic Plans and Proposals. Addenda and revisions will also be placed on the Addendum/Revision Checklist and each subscription service subscriber will be notified by e-mail of each addendum and revision issued.

The Internet is the Department's primary way of doing business. The subscription service emails are an added courtesy the Department provides. It is suggested that bidders check IDOT's website at <http://www.dot.il.gov/desenv/delett.html> before submitting final bid information.

IDOT IS NOT RESPONSIBLE FOR ANY E-MAIL FAILURES.

Addenda questions may be directed to the Contracts Office at (217)782-7806 or DOT.D&Econtracts@illinois.gov

Technical questions about downloading these files may be directed to Tim Garman at (217)524-1642 or Timothy.Garman@illinois.gov.

STANDARD GUIDELINES FOR SUBMITTING BIDS

- All pages should be single sided.
- Use the Cover Page that is provided in the Bid Proposal (posted on the IDOT Web Site) as the first page of your submitted bid. It has the item number in large bold type in the upper left-hand corner and lines provided for your company name and address in the upper right-hand corner.
- Do not use report covers, presentation folders or special bindings and do not staple multiple times on left side like a book. Use only 1 staple in the upper left hand corner. Make sure all elements of your bid are stapled together including the bid bond or guaranty check (if required).
- Do not include any certificates of eligibility, your authorization to bid, Addendum Letters or affidavit of availability.
- Do not include the Subcontractor Documentation with your bid (pages i – iii and pages a – g). This documentation is required only if you are awarded the project.
- Use the envelope cover sheet (provided with the proposal) as the cover for the proposal envelope.
- Do not rely on overnight services to deliver your proposal prior to 10 AM on letting day. It will not be read if it is delivered after 10 AM.
- Do not submit your Substance Abuse Prevention Program (SAPP) with your bid. If you are awarded the contract this form is to be submitted to the district engineer at the pre-construction conference.

BID SUBMITTAL CHECKLIST

- Cover page** (the sheet that has the item number on it) – This should be the first page of your bid proposal, **followed by your bid (the Schedule of Prices/Pay Items)**. If you are using special software or CBID to generate your schedule of prices, do not include the blank pages of the schedule of prices that came with the proposal package.
- Page 4 (Item 9)** – Check “YES” if you will use a subcontractor(s) with an annual value over \$50,000. Include the subcontractor(s) name, address, general type of work to be performed and the dollar amount. If you will use subcontractor(s) but are uncertain who or the dollar amount; check “YES” but leave the lines blank.
- After page 4** – Insert the following documents: The **Illinois Office Affidavit** (Not applicable to federally funded projects) followed by Cost Adjustments for Steel, Bituminous and Fuel (if applicable) and the Contractor Letter of Assent (if applicable). The general rule should be, if you don’t know where it goes, put it after page 4.
- Page 10 (Paragraph J)** – Check “YES” or “NO” whether your company has any business in Iran.
- Page 10 (Paragraph K)** – (Not applicable to federally funded projects) List the name of the apprenticeship and training program sponsor holding the certificate of registration from the US Department of Labor. If no applicable program exists, please indicate the work/job category. Do not include certificates with your bid. Keep the certificates in your office in case they are requested by IDOT.
- Page 11 (Paragraph L)** – A copy of your State Board of Elections certificate of registration is no longer required with your bid.
- Page 11 (Paragraph M)** – Indicate if your company has hired a lobbyist in connection with the job for which you are submitting the bid proposal.
- Page 12 (Paragraph C)** – This is a work sheet to determine if a completed Form A is required. It is not part of the form and you do not need to make copies for each completed Form A.
- Pages 14-17 (Form A)** – One Form A (4 pages) is required for each applicable person in your company. Copies of the forms can be used and only need to be changed when the information changes. The certification signature and date must be original for each letting. **Do not staple the forms together.** If you answered “NO” to all of the questions in Paragraph C (page 12), complete the first section (page 14) with your company information and then sign and date the Not Applicable statement on page 17.
- Page 18 (Form B)** - If you check “YES” to having other current or pending contracts it is acceptable to use the phrase, “See Affidavit of Availability on file”. **Ownership Certification** (at the bottom of the page) - Check N/A if the Form A(s) you submitted accounts for 100 percent of the company ownership. Check YES if any percentage of ownership falls outside of the parameters that require reporting on the Form A. Checking NO indicates that the Form A(s) you submitted is not correct and you will be required to submit a revised Form A.
- Page 20 (Workforce Projection)** – Be sure to include the Duration of the Project. It is acceptable to use the phrase “Per Contract Specifications”.

Proposal Bid Bond – (Insert after the proposal signature page) Submit your proposal Proposal Bid Bond (if applicable) using the current Proposal Bid Bond form provided in the proposal package. The Power of Attorney page should be stapled to the Proposal Bid Bond. If you are using an electronic bond, include your bid bond number on the Proposal Bid Bond and attach the Proof of Insurance printed from the Surety’s Web Site.

Disadvantaged Business Utilization Plan and/or Good Faith Effort – The last items in your bid should be the DBE Utilization Plan (SBE 2026), followed by the DBE Participation Statement (SBE 2025) and supporting paperwork. If you have documentation of a Good Faith Effort, it is to follow the SBE Forms.

The Bid Letting is now available in streaming Audio/Video from the IDOT Web Site. A link to the stream will be placed on the main page of the current letting on the day of the Letting. The stream will not begin until 10 AM. The actual reading of the bids does not begin until approximately 10:30 AM.

Following the Letting, the As-Read Tabulation of Bids will be posted by the end of the day. You will find the link on the main Web page for the current letting.

QUESTIONS: pre-letting up to execution of the contract

Contractor pre-qualification	217-782-3413
Small Business, Disadvantaged Business Enterprise (DBE)	217-785-4611
Contracts, Bids, Letting process or Internet downloads	217-782-7806
Estimates Unit.....	217-785-3483
Aeronautics.....	217-785-8515
IDNR (Land Reclamation, Water Resources, Natural Resources).....	217-782-6302

QUESTIONS: following contract execution

Subcontractor documentation, payments	217-782-3413
Railroad Insurance	217-785-0275

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Proposal Submitted By
Name
Address
City

Letting September 19, 2014

NOTICE TO PROSPECTIVE BIDDERS

This proposal can be used for bidding purposes by only those companies that request and receive written AUTHORIZATION TO BID from IDOT's Central Bureau of Construction.

BIDDERS NEED NOT RETURN THE ENTIRE PROPOSAL

Notice to Bidders, Specifications, Proposal, Contract and Contract Bond



**Illinois Department
of Transportation**

Springfield, Illinois 62764

**Contract No. 74643
Various Counties
Section D7 ITS 2014
Various Routes
District 7 Construction Funds**

PLEASE MARK THE APPROPRIATE BOX BELOW:

- A Bid Bond is included.
- A Cashier's Check or a Certified Check is included.
- An Annual Bid Bond is included or is on file with IDOT.

Prepared by

S

Checked by

(Printed by authority of the State of Illinois)

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PROPOSAL

TO THE DEPARTMENT OF TRANSPORTATION

1. Proposal of _____

Taxpayer Identification Number (Mandatory) _____ a

For the improvement identified and advertised for bids in the Invitation for Bids as:

**Contract No. 74643
Various Counties
Section D7 ITS 2014
Various Routes
District 7 Construction Funds**

This project consists of furnishing and installing overhead sign truss and butterfly truss mounted dynamic message signs and closed circuit television cameras along various routes and rest areas within District 7 including furnishing and installing all communication equipment and software required to connect the DMS and CCTV to the Operations Office and Traffic Sign Shop Communications Center.

2. The undersigned bidder will furnish all labor, material and equipment to complete the above described project in a good and workmanlike manner as provided in the contract documents provided by the Department of Transportation. This proposal will become part of the contract and the terms and conditions contained in the contract documents will govern performance and payments.

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT
 NUMBER - 74643

State Job # - C-97-004-14

Project Number

Route

County Name - VARIOUS-

VARIOUS

Code - 0 - -

District - 7 - -

Section Number - D7 ITS 2014

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
X0323909	DATA NETWORK PORT ADP	EACH	2.000				
X0323920	POLE MT EQUIP CAB TB	EACH	6.000				
X0323923	SUPPORT EQUIP & MAINT	L SUM	1.000				
X0324597	CCTV CABINET	EACH	8.000				
X0324603	CB 1P 20A/120V EX CAB	EACH	10.000				
X0325077	FIB OPT UTILIT MARKER	EACH	27.000				
X0325485	TR MTD LED DYN MSG SN	EACH	6.000				
X0325922	CELLULAR MODEM	EACH	4.000				
X0326252	COMPUTER WORKSTATION	EACH	5.000				
X0326253	LCD MONITOR	EACH	11.000				
X0326254	LAPTOP COMPUTER	EACH	3.000				
X0326255	APPLICATION SERVER	EACH	1.000				
X0326258	NETWORK SECURITY APPL	EACH	1.000				
X0326260	ETHERNET SWITCH MAT O	EACH	1.000				
X0326263	EQUIPMENT CABINET	EACH	1.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT
 NUMBER - 74643

State Job # - C-97-004-14

Project Number

Route

County Name - VARIOUS- -

VARIOUS

Code - 0 - -

District - 7 - -

Section Number - D7 ITS 2014

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
X0326267	VIDEO SERVER	EACH	4.000				
X0326812	CAT 5 ETHERNET CABLE	FOOT	435.000				
X0326905	CCTV DOME CAM IP BASE	EACH	14.000				
X0327121	CAMERA POLE 55 FT	EACH	5.000				
X0327763	ELECT WORK IDOT D7 HQ	L SUM	1.000				
X3120005	STAB SUBBASE HMA VD	TON	340.000				
X7010216	TRAF CONT & PROT SPL	L SUM	1.000				
X7010410	SPEED DISPLAY TRAILER	CAL MO	16.000				
X8620200	UNINTER POWER SUP SPL	EACH	1.000				
X8710029	FIB OPT CBL 24F SM	FOOT	18,770.000				
X8710050	FO ETN DROP REPEAT SW	EACH	19.000				
Z0033052	COMMUNICATIONS VAULT	EACH	29.000				
Z0048665	RR PROT LIABILITY INS	L SUM	1.000				
42400100	PC CONC SIDEWALK 4	SQ FT	200.000				
44000600	SIDEWALK REM	SQ FT	200.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT
 NUMBER -

State Job # - C-97-004-14

74643

Project Number

Route

County Name - VARIOUS- -

VARIOUS

Code - 0 - -

District - 7 - -

Section Number - D7 ITS 2014

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
63000001	SPBGR TY A 6FT POSTS	FOOT	3,287.500				
63100045	TRAF BAR TERM T2	EACH	15.000				
63100167	TR BAR TRM T1 SPL TAN	EACH	15.000				
67100100	MOBILIZATION	L SUM	1.000				
73300300	OVHD SIN STR-SPAN T3A	FOOT	386.000				
73301805	OSS BUTFLY TY III-F-A	FOOT	37.500				
73301810	OSS WALKWAY TY A	FOOT	168.000				
73301900	OSS WLKWY BFLY TYPE A	FOOT	7.000				
73400200	DRILL SHAFT CONC FDN	CU YD	115.800				
78200410	GUARDRAIL MKR TYPE A	EACH	60.000				
78201000	TERMINAL MARKER - DA	EACH	15.000				
80400100	ELECT SERV INSTALL	EACH	6.000				
81028350	UNDRGRD C PVC 2	FOOT	15,025.000				
81028370	UNDRGRD C PVC 3	FOOT	3,635.000				
81028750	UNDRGRD C CNC 2	FOOT	400.000				

ILLINOIS DEPARTMENT OF TRANSPORTATION
 SCHEDULE OF PRICES
 CONTRACT
 NUMBER - 74643

State Job # - C-97-004-14

Project Number

Route

County Name - VARIOUS- -

VARIOUS

Code - 0 - -

District - 7 - -

Section Number - D7 ITS 2014

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
81100600	CON AT ST 2 GALVS	FOOT	55.000				
81300550	JUN BX SS AS 12X12X6	EACH	8.000				
81300948	JUN BX SS AS 24X24X10	EACH	1.000				
81702130	EC C XLP USE 1C 6	FOOT	18,280.000				
87301795	ELCBL C SERV 3 1C	FOOT	10,755.000				
87800415	CONC FDN TY E 36D	FOOT	122.000				
87900100	DRILL EX FOUNDATION	EACH	3.000				
87900200	DRILL EX HANDHOLE	EACH	28.000				

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6. **COMBINATION BIDS.** The undersigned bidder further agrees that if awarded the contract for the sections contained in the following combination, he/she will perform the work in accordance with the requirements of each individual contract comprising the combination bid specified in the schedule below, and that the combination bid shall be prorated against each section in proportion to the bid submitted for the same. If an error is found to exist in the gross sum bid for one or more of the individual sections included in a combination, the combination bid shall be corrected as provided in the specifications.

When a combination bid is submitted, the schedule below must be completed in each proposal comprising the combination.

If alternate bids are submitted for one or more of the sections comprising the combination, a combination bid must be submitted for each alternate.

Schedule of Combination Bids

Combination No.	Sections Included in Combination	Combination Bid	
		Dollars	Cents

7. **SCHEDULE OF PRICES.** The undersigned bidder submits herewith, in accordance with the rules and instructions, a schedule of prices for the items of work for which bids are sought. The unit prices bid are in U.S. dollars and cents, and all extensions and summations have been made. The bidder understands that the quantities appearing in the bid schedule are approximate and are provided for the purpose of obtaining a gross sum for the comparison of bids. If there is an error in the extension of the unit prices, the unit prices will govern. Payment to the contractor awarded the contract will be made only for actual quantities of work performed and accepted or materials furnished according to the contract. The scheduled quantities of work to be done and materials to be furnished may be increased, decreased or omitted as provided elsewhere in the contract.
8. **AUTHORITY TO DO BUSINESS IN ILLINOIS.** Section 20-43 of the Illinois Procurement Code (the Code) (30 ILCS 500/20-43) provides that a person (other than an individual acting as a sole proprietor) must be a legal entity authorized to do business in the State of Illinois prior to submitting the bid.
9. **EXECUTION OF CONTRACT:** The Department of Transportation will, in accordance with the rules governing Department procurements, execute the contract and shall be the sole entity having the authority to accept performance and make payments under the contract. Execution of the contract by the Chief Procurement Officer (CPO) or the State Purchasing Officer (SPO) is for approval of the procurement process and execution of the contract by the Department. Neither the CPO nor the SPO shall be responsible for administration of the contract or determinations respecting performance or payment there under except as otherwise permitted in the Code.

10. **The services of a subcontractor will be used.**

Check box Yes
 Check box No

For known subcontractors with subcontracts with an annual value of more than \$50,000, the contract shall include their name, address, general type of work to be performed, and the dollar allocation for each subcontractor.
 (30 ILCS 500/20-120)

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STATE REQUIRED ETHICAL STANDARDS GOVERNING CONTRACT PROCUREMENT: ASSURANCES, CERTIFICATIONS AND DISCLOSURES

I. GENERAL

A. Article 50 of the Code establishes the duty of all State CPOs, SPOs, and their designees to maximize the value of the expenditure of public moneys in procuring goods, services, and contracts for the State of Illinois and to act in a manner that maintains the integrity and public trust of State government. In discharging this duty, they are charged by law to use all available information, reasonable efforts, and reasonable actions to protect, safeguard, and maintain the procurement process of the State of Illinois.

B. In order to comply with the provisions of Article 50 and to carry out the duty established therein, all bidders are to adhere to ethical standards established for the procurement process, and to make such assurances, disclosures and certifications required by law. Except as otherwise required in subsection III, paragraphs J-M, by execution of the Proposal Signature Sheet, the bidder indicates that each of the mandated assurances have been read and understood, that each certification is made and understood, and that each disclosure requirement has been understood and completed.

C. In addition to all other remedies provided by law, failure to comply with any assurance, failure to make any disclosure or the making of a false certification shall be grounds for the CPO to void the contract, and may result in the suspension or debarment of the bidder or subcontractor. If a false certification is made by a subcontractor the contractor's submitted bid and the executed contract may not be declared void unless the contractor refuses to terminate the subcontract upon the State's request after a finding that the subcontractor's certification was false.

I acknowledge, understand and accept these terms and conditions.

II. ASSURANCES

The assurances hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder.

A. Conflicts of Interest

Section 50-13. Conflicts of Interest.

(a) Prohibition. It is unlawful for any person holding an elective office in this State, holding a seat in the General Assembly, or appointed to or employed in any of the offices or agencies of state government and who receives compensation for such employment in excess of 60% of the salary of the Governor of the State of Illinois, or who is an officer or employee of the Capital Development Board or the Illinois State Toll Highway Authority, or who is the spouse or minor child of any such person to have or acquire any contract, or any direct pecuniary interest in any contract therein, whether for stationery, printing, paper, or any services, materials, or supplies, that will be wholly or partially satisfied by the payment of funds appropriated by the General Assembly of the State of Illinois or in any contract of the Capital Development Board or the Illinois State Toll Highway Authority.

(b) Interests. It is unlawful for any firm, partnership, association or corporation, in which any person listed in subsection (a) is entitled to receive (i) more than 7 1/2% of the total distributable income or (ii) an amount in excess of the salary of the Governor, to have or acquire any such contract or direct pecuniary interest therein.

(c) Combined interests. It is unlawful for any firm, partnership, association, or corporation, in which any person listed in subsection (a) together with his or her spouse or minor children is entitled to receive (i) more than 15%, in the aggregate, of the total distributable income or (ii) an amount in excess of 2 times the salary of the Governor, to have or acquire any such contract or direct pecuniary interest therein.

(d) Securities. Nothing in this Section invalidates the provisions of any bond or other security previously offered or to be offered for sale or sold by or for the State of Illinois.

(e) Prior interests. This Section does not affect the validity of any contract made between the State and an officer or employee of the State or member of the General Assembly, his or her spouse, minor child or any combination of those persons if that contract was in existence before his or her election or employment as an officer, member, or employee. The contract is voidable, however, if it cannot be completed within 365 days after the officer, member, or employee takes office or is employed.

The current salary of the Governor is \$177,412.00. Sixty percent of the salary is \$106,447.20.

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The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-13, or that an effective exemption has been issued by the Board of Ethics to any individual subject to the Section 50-13 prohibitions pursuant to the provisions of Section 50-20 of the Code. Information concerning the exemption process is available from the Department upon request.

B. Negotiations

Section 50-15. Negotiations.

It is unlawful for any person employed in or on a continual contractual relationship with any of the offices or agencies of State government to participate in contract negotiations on behalf of that office or agency with any firm, partnership, association, or corporation with whom that person has a contract for future employment or is negotiating concerning possible future employment.

The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-15, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

C. Inducements

Section 50-25. Inducement.

Any person who offers or pays any money or other valuable thing to any person to induce him or her not to bid for a State contract or as recompense for not having bid on a State contract is guilty of a Class 4 felony. Any person who accepts any money or other valuable thing for not bidding for a State contract or who withholds a bid in consideration of the promise for the payment of money or other valuable thing is guilty of a Class 4 felony.

The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-25, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

D. Revolving Door Prohibition

Section 50-30. Revolving door prohibition.

CPOs, SPOs, procurement compliance monitors, their designees whose principal duties are directly related to State procurement, and executive officers confirmed by the Senate are expressly prohibited for a period of 2 years after terminating an affected position from engaging in any procurement activity relating to the State agency most recently employing them in an affected position for a period of at least 6 months. The prohibition includes, but is not limited to: lobbying the procurement process; specifying; bidding; proposing bid, proposal, or contract documents; on their own behalf or on behalf of any firm, partnership, association, or corporation. This Section applies only to persons who terminate an affected position on or after January 15, 1999.

The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-30, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

E. Reporting Anticompetitive Practices

Section 50-40. Reporting anticompetitive practices.

When, for any reason, any vendor, bidder, contractor, CPO, SPO, designee, elected official, or State employee suspects collusion or other anticompetitive practice among any bidders, offerors, contractors, proposers, or employees of the State, a notice of the relevant facts shall be transmitted to the Attorney General and the CPO.

The bidder assures the Department that it has not failed to report any relevant facts concerning the practices addressed in Section 50-40 which may involve the contract for which the bid is submitted.

F. Confidentiality

Section 50-45. Confidentiality.

Any CPO, SPO, designee, or executive officer who willfully uses or allows the use of specifications, competitive bid documents, proprietary competitive information, proposals, contracts, or selection information to compromise the fairness or integrity of the procurement, bidding, or contract process shall be subject to immediate dismissal, regardless of the Personnel code, any contract, or any collective bargaining agreement, and may in addition be subject to criminal prosecution.

The bidder assures the Department that it has no knowledge of any fact relevant to the practices addressed in Section 50-45 which may involve the contract for which the bid is submitted.

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G. Insider Information

Section 50-50. Insider information.

It is unlawful for any current or former elected or appointed State official or State employee to knowingly use confidential information available only by virtue of that office or employment for actual or anticipated gain for themselves or another person.

The bidder assures the Department that it has no knowledge of any facts relevant to the practices addressed in Section 50-50 which may involve the contract for which the bid is submitted.

I acknowledge, understand and accept these terms and conditions for the above assurances.

III. CERTIFICATIONS

The certifications hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. Section 50-2 of the Code provides that every person that has entered into a multi-year contract and every subcontractor with a multi-year subcontract shall certify, by July 1 of each fiscal year covered by the contract after the initial fiscal year, to the responsible CPO whether it continues to satisfy the requirements of Article 50 pertaining to the eligibility for a contract award. If a contractor or subcontractor is not able to truthfully certify that it continues to meet all requirements, it shall provide with its certification a detailed explanation of the circumstances leading to the change in certification status. A contractor or subcontractor that makes a false statement material to any given certification required under Article 50 is, in addition to any other penalties or consequences prescribed by law, subject to liability under the Whistleblower Reward and Protection Act for submission of a false claim.

A. Bribery

Section 50-5. Bribery.

(a) Prohibition. No person or business shall be awarded a contract or subcontract under this Code who:

(1) has been convicted under the laws of Illinois or any other state of bribery or attempting to bribe an officer or employee of the State of Illinois or any other state in that officer's or employee's official capacity; or

(2) has made an admission of guilt of that conduct that is a matter of record but has not been prosecuted for that conduct.

(b) Businesses. No business shall be barred from contracting with any unit of State or local government, or subcontracting under such a contract, as a result of a conviction under this Section of any employee or agent of the business if the employee or agent is no longer employed by the business and:

(1) the business has been finally adjudicated not guilty; or

(2) the business demonstrates to the governmental entity with which it seeks to contract, or which is signatory to the contract which the subcontract relates, and that entity finds that the commission of the offense was not authorized, requested, commanded, or performed by a director, officer, or high managerial agent on behalf of the business as provided in paragraph (2) of subsection (a) of Section 5-4 of the Criminal Code of 2012.

(c) Conduct on behalf of business. For purposes of this Section, when an official, agent, or employee of a business committed the bribery or attempted bribery on behalf of the business and in accordance with the direction or authorization of a responsible official of the business, the business shall be chargeable with the conduct.

(d) Certification. Every bid submitted to and contract executed by the State, and every subcontract subject to Section 20-120 of the Code shall contain a certification by the contractor or the subcontractor, respectively, that the contractor or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO may declare the related contract void if any certifications required by this Section are false. A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

The contractor or subcontractor certifies that it is not barred from being awarded a contract under Section 50.5.

B. Felons

Section 50-10. Felons.

(a) Unless otherwise provided, no person or business convicted of a felony shall do business with the State of Illinois or any State agency, or enter into a subcontract, from the date of conviction until 5 years after the date of completion of the sentence for that felony, unless no person held responsible by a prosecutorial office for the facts upon which the conviction was based continues to have any involvement with the business.

(b) Certification. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Code shall contain a certification by the bidder or contractor or subcontractor, respectively, that the bidder, contractor, or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO may declare the related contract void if any of the certifications required by this Section are false.

RETURN WITH BID

C. Debt Delinquency

Section 50-11 and 50-12. Debt Delinquency.

The contractor or bidder or subcontractor, respectively, certifies that it, or any affiliate, is not barred from being awarded a contract or subcontract under the Code. Section 50-11 prohibits a person from entering into a contract with a State agency, or entering into a subcontract, if it knows or should know that it, or any affiliate, is delinquent in the payment of any debt to the State as defined by the Debt Collection Board. Section 50-12 prohibits a person from entering into a contract with a State agency, or entering into a subcontract, if it, or any affiliate, has failed to collect and remit Illinois Use Tax on all sales of tangible personal property into the State of Illinois in accordance with the provisions of the Illinois Use Tax Act. The bidder or contractor or subcontractor, respectively, further acknowledges that the CPO may declare the related contract void if this certification is false or if the bidder, contractor, or subcontractor, or any affiliate, is determined to be delinquent in the payment of any debt to the State during the term of the contract.

D. Prohibited Bidders, Contractors and Subcontractors

Section 50-10.5 and 50-60(c). Prohibited bidders, contractors and subcontractors.

The bidder or contractor or subcontractor, respectively, certifies in accordance with 30 ILCS 500/50-10.5 that no officer, director, partner or other managerial agent of the contracting business has been convicted of a felony under the Sarbanes-Oxley Act of 2002 or a Class 3 or Class 2 felony under the Illinois Securities Law of 1953 or if in violation of Subsection (c) for a period of five years from the date of conviction. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Code shall contain a certification by the bidder, contractor, or subcontractor, respectively, that the bidder, contractor, or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO shall declare the related contract void if any of the certifications completed pursuant to this Section are false.

E. Section 42 of the Environmental Protection Act

The bidder or contractor or subcontractor, respectively, certifies in accordance with 30 ILCS 500/50-14 that the bidder, contractor, or subcontractor, is not barred from being awarded a contract or entering into a subcontract under this Section which prohibits the bidding on or entering into contracts with the State of Illinois or a State agency, or entering into any subcontract, that is subject to the Code by a person or business found by a court or the Pollution Control Board to have committed a willful or knowing violation of Section 42 of the Environmental Protection Act for a period of five years from the date of the order. The bidder or contractor or subcontractor, respectively, acknowledges that the CPO may declare the contract void if this certification is false.

F. Educational Loan

Section 3 of the Educational Loan Default Act provides no State agency shall contract with an individual for goods or services if that individual is in default, as defined in Section 2 of this Act, on an educational loan. Any contract used by any State agency shall include a statement certifying that the individual is not in default on an educational loan as provided in this Section.

The bidder, if an individual as opposed to a corporation, partnership or other form of business organization, certifies that the bidder is not in default on an educational loan as provided in Section 3 of the Act.

G. Bid-Rigging/Bid Rotating

Section 33E-11 of the Criminal Code of 2012 provides:

(a) Every bid submitted to and public contract executed pursuant to such bid by the State or a unit of local government shall contain a certification by the prime contractor that the prime contractor is not barred from contracting with any unit of State or local government as a result of a violation of either Section 33E-3 or 33E-4 of this Article

(b) A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

A violation of Section 33E-3 would be represented by a conviction of the crime of bid-rigging which, in addition to Class 3 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be barred for 5 years from the date of conviction from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

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A violation of Section 33E-4 would be represented by a conviction of the crime of bid-rotating which, in addition to Class 2 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be permanently barred from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

The bidder certifies that it is not barred from contracting with the Department by reason of a violation of either Section 33E-3 or Section 33E-4.

H. International Anti-Boycott

Section 5 of the International Anti-Boycott Certification Act provides every contract entered into by the State of Illinois for the manufacture, furnishing, or purchasing of supplies, material, or equipment or for the furnishing of work, labor, or services, in an amount exceeding the threshold for small purchases according to the purchasing laws of this State or \$10,000.00, whichever is less, shall contain certification, as a material condition of the contract, by which the contractor agrees that neither the contractor nor any substantially-owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the U.S. Export Administration Act of 1979 or the regulations of the U.S. Department of Commerce promulgated under that Act.

The bidder makes the certification set forth in Section 5 of the Act.

I. Drug Free Workplace

The Illinois "Drug Free Workplace Act" applies to this contract and it is necessary to comply with the provisions of the "Act" if the contractor is a corporation, partnership, or other entity (including a sole proprietorship) which has 25 or more employees.

The bidder certifies that if awarded a contract in excess of \$5,000 it will provide a drug free workplace in compliance with the provisions of the Act.

J. Disclosure of Business Operations in Iran

Section 50-36 of the Code, 30ILCS 500/50-36 provides that each bid, offer, or proposal submitted for a State contract shall include a disclosure of whether or not the Company acting as the bidder, offeror, or proposing entity, or any of its corporate parents or subsidiaries, within the 24 months before submission of the bid, offer, or proposal had business operations that involved contracts with or provision of supplies or services to the Government of Iran, companies in which the Government of Iran has any direct or indirect equity share, consortiums or projects commissioned by the Government of Iran, or companies involved in consortiums or projects commissioned by the Government of Iran and either of the following conditions apply:

- (1) More than 10% of the Company's revenues produced in or assets located in Iran involve oil-related activities or mineral-extraction activities; less than 75% of the Company's revenues produced in or assets located in Iran involve contracts with or provision of oil-related or mineral-extraction products or services to the Government of Iran or a project or consortium created exclusively by that government; and the Company has failed to take substantial action.
- (2) The Company has, on or after August 5, 1996, made an investment of \$20 million or more, or any combination of investments of at least \$10 million each that in the aggregate equals or exceeds \$20 million in any 12-month period, which directly or significantly contributes to the enhancement of Iran's ability to develop petroleum resources of Iran.

The terms "Business operations", "Company", "Mineral-extraction activities", "Oil-related activities", "Petroleum resources", and "Substantial action" are all defined in the Code.

Failure to make the disclosure required by the Code shall cause the bid, offer or proposal to be considered not responsive. The disclosure will be considered when evaluating the bid or awarding the contract. The name of each Company disclosed as doing business or having done business in Iran will be provided to the State Comptroller.

Check the appropriate statement:

Company has no business operations in Iran to disclose.

Company has business operations in Iran as disclosed the attached document.

RETURN WITH BID

K. Apprenticeship and Training Certification (Does not apply to federal aid projects)

In accordance with the provisions of Section 30-22 (6) of the Code, the bidder certifies that it is a participant, either as an individual or as part of a group program, in the approved apprenticeship and training programs applicable to each type of work or craft that the bidder will perform with its own forces. The bidder further certifies for work that will be performed by subcontract that each of its subcontractors submitted for approval either (a) is, at the time of such bid, participating in an approved, applicable apprenticeship and training program; or (b) will, prior to commencement of performance of work pursuant to this contract, begin participation in an approved apprenticeship and training program applicable to the work of the subcontract. The Department, at any time before or after award, may require the production of a copy of each applicable Certificate of Registration issued by the United States Department of Labor evidencing such participation by the contractor and any or all of its subcontractors. Applicable apprenticeship and training programs are those that have been approved and registered with the United States Department of Labor. The bidder shall list in the space below, the official name of the program sponsor holding the Certificate of Registration for all of the types of work or crafts in which the bidder is a participant and that will be performed with the bidder's forces. Types of work or craft work that will be subcontracted shall be included and listed as subcontract work. The list shall also indicate any type of work or craft job category that does not have an applicable apprenticeship or training program. **The bidder is responsible for making a complete report and shall make certain that each type of work or craft job category that will be utilized on the project as reported on the Construction Employee Workforce Projection (Form BC-1256) and returned with the bid is accounted for and listed.**

The requirements of this certification and disclosure are a material part of the contract, and the contractor shall require this certification provision to be included in all approved subcontracts. In order to fulfill this requirement, it shall not be necessary that an applicable program sponsor be currently taking or that it will take applications for apprenticeship, training or employment during the performance of the work of this contract.

TO BE RETURNED WITH BID

L. Political Contributions and Registration with the State Board of Elections

Sections 20-160 and 50-37 of the Code regulate political contributions from business entities and any affiliated entities or affiliated persons bidding on or contracting with the state. Generally under Section 50-37, any business entity, and any affiliated entity or affiliated person of the business entity, whose current year contracts with all state agencies exceed an awarded value of \$50,000, are prohibited from making any contributions to any political committees established to promote the candidacy of the officeholder responsible for the awarding of the contracts or any other declared candidate for that office for the duration of the term of office of the incumbent officeholder or a period 2 years after the termination of the contract, whichever is longer. Any business entity and affiliated entities or affiliated persons whose state contracts in the current year do not exceed an awarded value of \$50,000, but whose aggregate pending bids and proposals on state contracts exceed \$50,000, either alone or in combination with contracts not exceeding \$50,000, are prohibited from making any political contributions to any political committee established to promote the candidacy of the officeholder responsible for awarding the pending contract during the period beginning on the date the invitation for bids or request for proposals is issued and ending on the day after the date of award or selection if the entity was not awarded or selected. Section 20-160 requires certification of registration of affected business entities in accordance with procedures found in Section 9-35 of The Election Code.

By submission of a bid, the contractor business entity acknowledges and agrees that it has read and understands Sections 20-160 and 50-37 of the Code, and that it makes the following certification:

The undersigned bidder certifies that it has registered as a business with the State Board of Elections and acknowledges a continuing duty to update the registration in accordance with the above referenced statutes. If the business entity is required to register, the CPO shall verify that it is in compliance on the date the bid or proposal is due. The CPO shall not accept a bid or proposal if the business entity is not in compliance with the registration requirements.

These requirements and compliance with the above referenced statutory sections are a material part of the contract, and any breach thereof shall be cause to void the contract under Section 50-60 of the Code. This provision does not apply to Federal-aid contracts.

M. Lobbyist Disclosure

Section 50-38 of the Code requires that any bidder or offeror on a State contract that hires a person required to register under the Lobbyist Registration Act to assist in obtaining a contract shall:

- (i) Disclose all costs, fees, compensation, reimbursements, and other remunerations paid or to be paid to the lobbyist related to the contract,
- (ii) Not bill or otherwise cause the State of Illinois to pay for any of the lobbyist's costs, fees, compensation, reimbursements, or other remuneration, and
- (iii) Sign a verification certifying that none of the lobbyist's costs, fees, compensation, reimbursements, or other remuneration were billed to the State.

This information, along with all supporting documents, shall be filed with the agency awarding the contract and with the Secretary of State. The CPO shall post this information, together with the contract award notice, in the online Procurement Bulletin.

Pursuant to Subsection (c) of this Section, no person or entity shall retain a person or entity to attempt to influence the outcome of a procurement decision made under the Code for compensation contingent in whole or in part upon the decision or procurement. Any person who violates this subsection is guilty of a business offense and shall be fined not more than \$10,000.

Bidder acknowledges that it is required to disclose the hiring of any person required to register pursuant to the Illinois Lobbyist Registration Act (25 ILCS 170) in connection with this contract.

Bidder has not hired any person required to register pursuant to the Illinois Lobbyist Registration Act in connection with this contract.

Or

Bidder has hired the following persons required to register pursuant to the Illinois Lobbyist Registration Act in connection with the contract:

Name and address of person: _____
All costs, fees, compensation, reimbursements and other remuneration paid to said person: _____

I acknowledge, understand and accept these terms and conditions for the above certifications.

RETURN WITH BID

IV. DISCLOSURES

- A. The disclosures hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The bidder further certifies that the Department has received the disclosure forms for each bid.

The CPO may void the bid, or contract, respectively, if it is later determined that the bidder or subcontractor rendered a false or erroneous disclosure. A contractor or subcontractor may be suspended or debarred for violations of the Code. Furthermore, the CPO may void the contract and the surety providing the performance bond shall be responsible for completion of the contract.

B. Financial Interests and Conflicts of Interest

1. Section 50-35 of the Code provides that all bids of more than \$25,000 shall be accompanied by disclosure of the financial interests of the bidder. This disclosed information for the successful bidder, will be maintained as public information subject to release by request pursuant to the Freedom of Information Act, filed with the Procurement Policy Board, and shall be incorporated as a material term of the contract. Furthermore, pursuant to Section 5-5, the Procurement Policy Board may review a proposal, bid, or contract and issue a recommendation to void a contract or reject a proposal or bid based on any violation of the Code or the existence of a conflict of interest as provided in subsections (b) and (d) of Section 50-35.

The financial interests to be disclosed shall include ownership or distributive income share that is in excess of 5%, or an amount greater than 60% of the annual salary of the Governor, of the bidding entity or its parent entity, whichever is less, unless the contractor or bidder is a publicly traded entity subject to Federal 10K reporting, in which case it may submit its 10K disclosure in place of the prescribed disclosure. If a bidder is a privately held entity that is exempt from Federal 10K reporting, but has more than 200 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. The disclosure shall include the names, addresses, and dollar or proportionate share of ownership of each person making the disclosure, their instrument of ownership or beneficial relationship, and notice of any potential conflict of interest resulting from the current ownership or beneficial interest of each person making the disclosure having any of the relationships identified in Section 50-35 and on the disclosure form.

The current annual salary of the Governor is \$177,412.00

In addition, all disclosures shall indicate any other current or pending contracts, proposals, leases, or other ongoing procurement relationships the bidding entity has with any other unit of state government and shall clearly identify the unit and the contract, proposal, lease, or other relationship.

2. Disclosure Forms. Disclosure Form A is attached for use concerning the individuals meeting the above ownership or distributive share requirements. A separate Disclosure Form A must be submitted with the bid for each individual meeting the above requirements. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies and a total ownership certification. **The forms must be included with each bid.**

C. Disclosure Form Instructions

Form A Instructions for Financial Information & Potential Conflicts of Interest

If the bidder is a publicly traded entity subject to Federal 10K reporting, the 10K Report may be submitted to meet the requirements of Form A. If a bidder is a privately held entity that is exempt from Federal 10K reporting, but has more than 200 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. If a bidder is not subject to Federal 10K reporting, the bidder must determine if any individuals are required by law to complete a financial disclosure form. To do this, the bidder should answer each of the following questions. A "YES" answer indicates Form A must be completed. If the answer to each of the following questions is "NO", then the NOT APPLICABLE STATEMENT on Form A must be signed and dated by a person that is authorized to execute contracts for the bidding company. Note: These questions are for assistance only and are not required to be completed.

1. Does anyone in your organization have a direct or beneficial ownership share of greater than 5% of the bidding entity or parent entity? YES ___ NO ___
2. Does anyone in your organization have a direct or beneficial ownership share of less than 5%, but which has a value greater than 60% of the annual salary of the Governor? YES ___ NO ___
3. Does anyone in your organization receive more than 60% of the annual salary of the Governor of the bidding entity's or parent entity's distributive income? YES ___ NO ___

(Note: Distributive income is, for these purposes, any type of distribution of profits. An annual salary is not distributive income.)

4. Does anyone in your organization receive greater than 5% of the bidding entity's or parent entity's total distributive income, but which is less than 60% of the annual salary of the Governor? YES ___ NO ___

(Note: Only one set of forms needs to be completed per person per bid even if a specific individual would require a yes answer to more than one question.)

A "YES" answer to any of these questions requires the completion of Form A. The bidder must determine each individual in the bidding entity or the bidding entity's parent company that would cause the questions to be answered "Yes". Each form must be signed and dated by a person that is authorized to execute contracts for your organization. **Photocopied or stamped signatures are not acceptable.** The person signing can be, but does not have to be, the person for which the form is being completed. The bidder is responsible for the accuracy of any information provided.

If the answer to each of the above questions is "NO", then the NOT APPLICABLE STATEMENT of Form A must be signed and dated by a person that is authorized to execute contracts for your company.

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Form B: Instructions for Identifying Other Contracts & Procurement Related Information

Disclosure Form B must be completed for each bid submitted by the bidding entity. *Note: Checking the NOT APPLICABLE STATEMENT on Form A does not allow the bidder to ignore Form B. Form B must be completed, checked, and dated or the bidder may be considered nonresponsive and the bid will not be accepted.*

The Bidder shall identify, by checking Yes or No on Form B, whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other (non-IDOT) State of Illinois agency. If "No" is checked, the bidder only needs to complete the check box on the bottom of Form B. If "Yes" is checked, the bidder must do one of the following:

Option I: If the bidder did not submit an Affidavit of Availability to obtain authorization to bid, the bidder must list all non-IDOT State of Illinois agency pending contracts, leases, bids, proposals, and other ongoing procurement relationships. These items may be listed on Form B or on an attached sheet(s). Do not include IDOT contracts. Contracts with cities, counties, villages, etc. are not considered State of Illinois agency contracts and are not to be included. Contracts with other State of Illinois agencies such as the Department of Natural Resources or the Capital Development Board must be included. Bidders who submit Affidavits of Availability are suggested to use Option II.

Option II: If the bidder is required and has submitted an Affidavit of Availability in order to obtain authorization to bid, the bidder may write or type "See Affidavit of Availability" which indicates that the Affidavit of Availability is incorporated by reference and includes all non-IDOT State of Illinois agency pending contracts, leases, bids, proposals, and other ongoing procurement relationships. For any contracts that are not covered by the Affidavit of Availability, the bidder must identify them on Form B or on an attached sheet(s). These might be such things as leases.

**ILLINOIS DEPARTMENT
OF TRANSPORTATION**

**Form A
Financial Information &
Potential Conflicts of Interest
Disclosure**

Contractor Name		
Legal Address		
City, State, Zip		
Telephone Number	Email Address	Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Code (30 ILCS 500). Vendors desiring to enter into a contract with the State of Illinois must disclose the financial information and potential conflict of interest information as specified in this Disclosure Form. This information shall become part of the publicly available contract file. This Form A must be completed for bids in excess of \$25,000, and for all open-ended contracts. **A publicly traded company may submit a 10K disclosure (or equivalent if applicable) in satisfaction of the requirements set forth in Form A. See Disclosure Form Instructions.**

The current annual salary of the Governor is \$177,412.00.

DISCLOSURE OF FINANCIAL INFORMATION

1. Disclosure of Financial Information. The individual named below has an interest in the BIDDER (or its parent) in terms of ownership or distributive income share in excess of 5%, or an interest which has a value of more than 60% of the annual salary of the Governor. **(Make copies of this form as necessary and attach a separate Disclosure Form A for each individual meeting these requirements)**

FOR INDIVIDUAL (type or print information)	
NAME:	_____
ADDRESS	_____
Type of ownership/distributable income share:	
stock _____ sole proprietorship _____ Partnership _____ other: (explain on separate sheet):	
% or \$ value of ownership/distributable income share:	_____

2. Disclosure of Potential Conflicts of Interest. Check "Yes" or "No" to indicate which, if any, of the following potential conflict of interest relationships apply. If the answer to any question is "Yes", please attach additional pages and describe.

- (a) State employment, currently or in the previous 3 years, including contractual employment of services. Yes ___ No ___

If your answer is yes, please answer each of the following questions.

- Are you currently an officer or employee of either the Capitol Development Board or the Illinois State Toll Highway Authority? Yes ___ No ___
- Are you currently appointed to or employed by any agency of the State of Illinois? If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, provide the name the State agency for which you are employed and your annual salary. _____

RETURN WITH BID

3. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 100% of the annual salary of the Governor?
Yes ___ No ___

4. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, are you and your spouse or minor children entitled to receive (i) more than 15 % in the aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of two times the salary of the Governor?
Yes ___ No ___

(b) State employment of spouse, father, mother, son, or daughter, including contractual employment for services in the previous 2 years.

Yes ___ No ___

If your answer is yes, please answer each of the following questions.

1. Is your spouse or any minor children currently an officer or employee of the Capitol Development Board or the Illinois State Toll Highway Authority?
Yes ___ No ___

2. Is your spouse or any minor children currently appointed to or employed by any agency of the State of Illinois? If your spouse or minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, provide the name of your spouse and/or minor children, the name of the State agency for which he/she is employed and his/her annual salary. _____

3. If your spouse or any minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 100% of the annual salary of the Governor?
Yes ___ No ___

4. If your spouse or any minor children are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, are you and your spouse or minor children entitled to receive (i) more than 15 % in the aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of two times the salary of the Governor?
Yes ___ No ___

(c) Elective status; the holding of elective office of the State of Illinois, the government of the United States, any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois currently or in the previous 3 years.
Yes ___ No ___

(d) Relationship to anyone holding elective office currently or in the previous 2 years; spouse, father, mother, son, or daughter.
Yes ___ No ___

(e) Appointive office; the holding of any appointive government office of the State of Illinois, the United States of America, or any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois, which office entitles the holder to compensation in excess of the expenses incurred in the discharge of that office currently or in the previous 3 years.
Yes ___ No ___

(f) Relationship to anyone holding appointive office currently or in the previous 2 years; spouse, father, mother, son, or daughter.
Yes ___ No ___

(g) Employment, currently or in the previous 3 years, as or by any registered lobbyist of the State government.
Yes ___ No ___

RETURN WITH BID

(h) Relationship to anyone who is or was a registered lobbyist in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___ No ___

(i) Compensated employment, currently or in the previous 3 years, by any registered election or reelection committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections. Yes ___ No ___

(j) Relationship to anyone; spouse, father, mother, son, or daughter; who was a compensated employee in the last 2 years by any registered election or re-election committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections. Yes ___ No ___

3. Communication Disclosure.

Disclose the name and address of each lobbyist and other agent of the bidder or offeror who is not identified in Section 2 of this form, who is has communicated, is communicating, or may communicate with any State officer or employee concerning the bid or offer. This disclosure is a continuing obligation and must be promptly supplemented for accuracy throughout the process and throughout the term of the contract. If no person is identified, enter "None" on the line below:

Name and address of person(s): _____

RETURN WITH BID

4. Debarment Disclosure. For each of the persons identified under Sections 2 and 3 of this form, disclose whether any of the following has occurred within the previous 10 years: debarment from contracting with any governmental entity; professional licensure discipline; bankruptcies; adverse civil judgments and administrative findings; and criminal felony convictions. This disclosure is a continuing obligation and must be promptly supplemented for accuracy throughout the procurement process and term of the contract. If no person is identified, enter "None" on the line below:

Name of person(s): _____

Nature of disclosure: _____

APPLICABLE STATEMENT

This Disclosure Form A is submitted on behalf of the INDIVIDUAL named on previous page. Under penalty of perjury, I certify the contents of this disclosure to be true and accurate to the best of my knowledge.

Completed by: _____ Date _____
Signature of Individual or Authorized Representative

NOT APPLICABLE STATEMENT

Under penalty of perjury, I have determined that no individuals associated with this organization meet the criteria that would require the completion of this Form A.

This Disclosure Form A is submitted on behalf of the CONTRACTOR listed on the previous page.

_____ Date _____
Signature of Authorized Representative

The bidder has a continuing obligation to supplement these disclosures under Sec. 50-35 of the Code.

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ILLINOIS DEPARTMENT OF TRANSPORTATION

Form B Other Contracts & Financial Related Information Disclosure

Contractor Name, Legal Address, City, State, Zip, Telephone Number, Email Address, Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Code (30 ILCS 500). This information shall become part of the publicly available contract file. This Form B must be completed for bids in excess of \$25,000, and for all open-ended contracts.

DISCLOSURE OF OTHER CONTRACTS AND PROCUREMENT RELATED INFORMATION

1. Identifying Other Contracts & Procurement Related Information. The BIDDER shall identify whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other State of Illinois agency: Yes ___ No ___

If "No" is checked, the bidder only needs to complete the signature box on the bottom of this page.

2. If "Yes" is checked. Identify each such relationship by showing State of Illinois agency name and other descriptive information such as bid or project number (attach additional pages as necessary). SEE DISCLOSURE FORM INSTRUCTIONS:

THE FOLLOWING STATEMENT MUST BE CHECKED

Signature of Authorized Representative, Date

OWNERSHIP CERTIFICATION

Please certify that the following statement is true if the individuals for all submitted Form A disclosures do not total 100% of ownership.

Any remaining ownership interest is held by individuals receiving less than \$106,447.20 of the bidding entity's or parent entity's distributive income or holding less than a 5% ownership interest.

Yes No N/A (Form A disclosure(s) established 100% ownership)

RETURN WITH BID

SPECIAL NOTICE TO CONTRACTORS

The following requirements of the Illinois Department of Human Rights' Rules and Regulations are applicable to bidders on all construction contracts advertised by the Illinois Department of Transportation:

CONSTRUCTION EMPLOYEE UTILIZATION PROJECTION

- (a) All bidders on construction contracts shall complete and submit, along with and as part of their bids, a Bidder's Employee Utilization Form (Form BC-1256) setting forth a projection and breakdown of the total workforce intended to be hired and/or allocated to such contract work by the bidder including a projection of minority and female employee utilization in all job classifications on the contract project.
- (b) The Department of Transportation shall review the Employee Utilization Form, and workforce projections contained therein, of the contract awardee to determine if such projections reflect an underutilization of minority persons and/or women in any job classification in accordance with the Equal Employment Opportunity Clause and Section 7.2 of the Illinois Department of Human Rights' Rules and Regulations for Public Contracts adopted as amended on September 17, 1980. If it is determined that the contract awardee's projections reflect an underutilization of minority persons and/or women in any job classification, it shall be advised in writing of the manner in which it is underutilizing and such awardee shall be considered to be in breach of the contract unless, prior to commencement of work on the contract project, it submits revised satisfactory projections or an acceptable written affirmative action plan to correct such underutilization including a specific timetable geared to the completion stages of the contract.
- (c) The Department of Transportation shall provide to the Department of Human Rights a copy of the contract awardee's Employee Utilization Form, a copy of any required written affirmative action plan, and any written correspondence related thereto. The Department of Human Rights may review and revise any action taken by the Department of Transportation with respect to these requirements.

RETURN WITH BID

**Contract No. 74643
Various Counties
Section D7 ITS 2014
Various Routes
District 7 Construction Funds**

PART II. WORKFORCE PROJECTION - continued

- B. Included in "Total Employees" under Table A is the total number of **new hires** that would be employed in the event the undersigned bidder is awarded this contract.

The undersigned bidder projects that: (number) _____ new hires would be recruited from the area in which the contract project is located; and/or (number) _____ new hires would be recruited from the area in which the bidder's principal office or base of operation is located.

- C. Included in "Total Employees" under Table A is a projection of numbers of persons to be employed directly by the undersigned bidder as well as a projection of numbers of persons to be employed by subcontractors.

The undersigned bidder estimates that (number) _____ persons will be directly employed by the prime contractor and that (number) _____ persons will be employed by subcontractors.

PART III. AFFIRMATIVE ACTION PLAN

- A. The undersigned bidder understands and agrees that in the event the foregoing minority and female employee utilization projection included under **PART II** is determined to be an underutilization of minority persons or women in any job category, and in the event that the undersigned bidder is awarded this contract, he/she will, prior to commencement of work, develop and submit a written Affirmative Action Plan including a specific timetable (geared to the completion stages of the contract) whereby deficiencies in minority and/or female employee utilization are corrected. Such Affirmative Action Plan will be subject to approval by the contracting agency and the **Department of Human Rights**.
- B. The undersigned bidder understands and agrees that the minority and female employee utilization projection submitted herein, and the goals and timetable included under an Affirmative Action Plan if required, are deemed to be part of the contract specifications.

Company _____ Telephone Number _____

Address _____

NOTICE REGARDING SIGNATURE

The Bidder's signature on the Proposal Signature Sheet will constitute the signing of this form. The following signature block needs to be completed if revisions are required.

Signature: _____ Title: _____ Date: _____

- Instructions: All tables must include subcontractor personnel in addition to prime contractor personnel.
- Table A - Include both the number of employees that would be hired to perform the contract work and the total number currently employed (Table B) that will be allocated to contract work, and include all apprentices and on-the-job trainees. The "Total Employees" column should include all employees including all minorities, apprentices and on-the-job trainees to be employed on the contract work.
- Table B - Include all employees currently employed that will be allocated to the contract work including any apprentices and on-the-job trainees currently employed.
- Table C - Indicate the racial breakdown of the total apprentices and on-the-job trainees shown in Table A.

RETURN WITH BID
Contract No. 74643
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PROPOSAL SIGNATURE SHEET

The undersigned bidder hereby makes and submits this bid on the subject Proposal, thereby assuring the Department that all requirements of the Invitation for Bids and rules of the Department have been met, that there is no misunderstanding of the requirements of paragraph 3 of this Proposal, and that the contract will be executed in accordance with the rules of the Department if an award is made on this bid.

(IF AN INDIVIDUAL)

Firm Name _____

Signature of Owner _____

Business Address _____

(IF A CO-PARTNERSHIP)

Firm Name _____

By _____

Business Address _____

Name and Address of All Members of the Firm:

(IF A CORPORATION)

Corporate Name _____

By _____

Signature of Authorized Representative

Typed or printed name and title of Authorized Representative

Attest _____

Signature

(IF A JOINT VENTURE, USE THIS SECTION FOR THE MANAGING PARTY AND THE SECOND PARTY SHOULD SIGN BELOW)

Business Address _____

(IF A JOINT VENTURE)

Corporate Name _____

By _____

Signature of Authorized Representative

Typed or printed name and title of Authorized Representative

Attest _____

Signature

Business Address _____

If more than two parties are in the joint venture, please attach an additional signature sheet.



This Annual Proposal Bid Bond shall become effective at 12:01 AM (CDST) on _____ and shall be valid until _____ 11:59 PM (CDST).

KNOW ALL PERSONS BY THESE PRESENTS, That We _____

as PRINCIPAL, and _____

as SURETY, and held jointly, severally and firmly bound unto the STATE OF ILLINOIS in the penal sum of 5 percent of the total bid price, or for the amount specified in the bid proposal under "Proposal Guaranty" in effect on the date of the Invitation for Bids, whichever is the lesser sum, well and truly to be paid unto said STATE OF ILLINOIS, for the payment of which we bind ourselves, our heirs, executors, administrators, successors and assigns.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that whereas, the PRINCIPAL may submit bid proposal(s) to the STATE OF ILLINOIS, acting through the Department of Transportation, for various improvements published in the Transportation Bulletin during the effective term indicated above.

NOW, THEREFORE, if the Department shall accept the bid proposal(s) of the PRINCIPAL; and if the PRINCIPAL shall, within the time and as specified in the bidding and contract documents; and if, after award by the Department, the PRINCIPAL shall enter into a contract in accordance with the terms of the bidding and contract documents including evidence of the required insurance coverages and providing such bond as specified with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof; or if, in the event of the failure of the PRINCIPAL to enter into such contract and to give the specified bond, the PRINCIPAL pays to the Department the difference not to exceed the penalty hereof between the amount specified in the bid proposal and such larger amount for which the Department may contract with another party to perform the work covered by said bid proposal, then this obligation shall be null and void, otherwise, it shall remain in full force and effect.

IN THE EVENT the Department determines the PRINCIPAL has failed to comply with any requirement as set forth in the preceding paragraph, then Surety shall pay the penal sum to the Department within fifteen (15) days of written demand therefor. If Surety does not make full payment within such period of time, the Department may bring an action to collect the amount owed. Surety is liable to the Department for all its expenses, including attorney's fees, incurred in any litigation in which it prevails either in whole or in part.

In TESTIMONY WHEREOF, the said PRINCIPAL has caused this instrument to be signed by its officer _____ day of _____ A.D., _____

In TESTIMONY WHEREOF, the said SURETY has caused this instrument to be signed by its officer _____ day of _____ A.D., _____

(Company Name)

(Company Name)

By _____
(Signature and Title)

By _____
(Signature of Attorney-in-Fact)

Notary for PRINCIPAL

Notary for SURETY

STATE OF _____
COUNTY OF _____

STATE OF _____
COUNTY OF _____

Signed and attested before me on _____ (date)

Signed and attested before me on _____ (date)

by _____
(Name of Notary Public)

by _____
(Name of Notary Public)

(Seal) _____
(Signature of Notary Public)

(Seal) _____
(Signature of Notary Public)

(Date Commission Expires)

(Date Commission Expires)

In lieu of completing the above section of the Annual Proposal Bid Bond form, the Principal may file an Electronic Bid Bond. By signing the proposal(s) the Principal is ensuring the identified electronic bid bond has been executed and the Principal and Surety are firmly bound unto the State of Illinois under the conditions of the bid bond as shown above.

Electronic Bid Bond ID #	Company/Bidder Name	Signature and Title
--------------------------	---------------------	---------------------

This bond may be terminated, at Surety's request, upon giving not less than thirty (30) days prior written notice of the cancellation/termination of the bond. Said written notice shall be issued to the Illinois Department of Transportation, Chief Contracts Official, 2300 South Dirksen Parkway, Springfield, Illinois, 62764, and shall be served in person, by receipted courier delivery or certified or registered mail, return receipt requested. Said notice period shall commence on the first calendar day following the Department's receipt of written cancellation/termination notice. Surety shall remain firmly bound to all obligations herein for proposals submitted prior to the cancellation/termination. Surety shall be released and discharged from any obligation(s) for proposals submitted for any letting or date after the effective date of cancellation/termination.



Item No. _____

Letting Date _____

KNOW ALL PERSONS BY THESE PRESENTS, That We _____

as PRINCIPAL, and _____

as SURETY, and held jointly, severally and firmly bound unto the STATE OF ILLINOIS in the penal sum of 5 percent of the total bid price, or for the amount specified in the bid proposal under "Proposal Guaranty" in effect on the date of the Invitation for Bids, whichever is the lesser sum, well and truly to be paid unto said STATE OF ILLINOIS, for the payment of which we bind ourselves, our heirs, executors, administrators, successors and assigns.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that whereas, the PRINCIPAL has submitted a bid proposal to the STATE OF ILLINOIS, acting through the Department of Transportation, for the improvement designated by the Transportation Bulletin Item Number and Letting Date indicated above.

NOW, THEREFORE, if the Department shall accept the bid proposal of the PRINCIPAL; and if the PRINCIPAL shall, within the time and as specified in the bidding and contract documents; and if, after award by the Department, the PRINCIPAL shall enter into a contract in accordance with the terms of the bidding and contract documents including evidence of the required insurance coverages and providing such bond as specified with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof; or if, in the event of the failure of the PRINCIPAL to enter into such contract and to give the specified bond, the PRINCIPAL pays to the Department the difference not to exceed the penalty hereof between the amount specified in the bid proposal and such larger amount for which the Department may contract with another party to perform the work covered by said bid proposal, then this obligation shall be null and void, otherwise, it shall remain in full force and effect.

IN THE EVENT the Department determines the PRINCIPAL has failed to comply with any requirement as set forth in the preceding paragraph, then Surety shall pay the penal sum to the Department within fifteen (15) days of written demand therefor. If Surety does not make full payment within such period of time, the Department may bring an action to collect the amount owed. Surety is liable to the Department for all its expenses, including attorney's fees, incurred in any litigation in which it prevails either in whole or in part.

In TESTIMONY WHEREOF, the said PRINCIPAL has caused this instrument to be signed by its officer
_____ day of _____ A.D., _____.

In TESTIMONY WHEREOF, the said SURETY has caused this instrument to be signed by its officer
_____ day of _____ A.D., _____.

(Company Name)

(Company Name)

By _____
(Signature and Title)

By _____
(Signature of Attorney-in-Fact)

Notary for PRINCIPAL

Notary for SURETY

STATE OF _____
COUNTY OF _____

STATE OF _____
COUNTY OF _____

Signed and attested before me on _____ (date)
by _____
(Name of Notary Public)

Signed and attested before me on _____ (date)
by _____
(Name of Notary Public)

(Seal) _____
(Signature of Notary Public)

(Seal) _____
(Signature of Notary Public)

(Date Commission Expires)

(Date Commission Expires)

In lieu of completing the above section of the Proposal Bid Bond form, the Principal may file an Electronic Bid Bond. By signing the proposal the Principal is ensuring the identified electronic bid bond has been executed and the Principal and Surety are firmly bound unto the State of Illinois under the conditions of the bid bond as shown above.

Electronic Bid Bond ID # _____ Company/Bidder Name _____ Signature and Title _____



(1) Policy

It is public policy that disadvantageded businesses as defined in 49 CFR Part 26 and the Special Provision shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with Federal or State funds. Consequently the requirements of 49 CFR Part 26 apply to this contract.

(2) Obligation

The contractor agrees to ensure that disadvantageded businesses as defined in 49 CFR Part 26 and the Special Provision have the maximum opportunity to participate in the performance of contracts or subcontracts financed in whole or in part with Federal or State funds. The contractor shall take all necessary and reasonable steps in accordance with 49 CFR Part 26 and the Special Provision to ensure that said businesses have the maximum opportunity to compete for and perform under this contract. The contractor shall not discriminate on the basis of race, color, national origin or sex in the award and performance of contracts.

(3) Project and Bid Identification

Complete the following information concerning the project and bid:

Route _____

Section _____

Project _____

County _____

Letting Date _____

Contract No. _____

Letting Item No. _____

Total Bid _____

Contract DBE Goal _____

(Percent) (Dollar Amount)

(4) Assurance

I, acting in my capacity as an officer of the undersigned bidder (or bidders if a joint venture), hereby assure the Department that on this project my company : (check one)

- Meets or exceeds contract award goals and has provided documented participation as follows:
Disadvantaged Business Participation _____ percent

Attached are the signed participation statements, forms SBE 2025, required by the Special Provision evidencing availability and use of each business participating in this plan and assuring that each business will perform a commercially useful function in the work of the contract.

- Failed to meet contract award goals and has included good faith effort documentation to meet the goals and that my company has provided participation as follows:
Disadvantaged Business Participation _____ percent

The contract goals should be accordingly modified or waived. Attached is all information required by the Special Provision in support of this request including good faith effort. Also attached are the signed participation statements, forms SBE 2025, required by the Special Provision evidencing availability and use of each business participating in this plan and assuring that each business will perform a commercially useful function in the work of the contract.

_____ Company

By _____

Title _____

Date _____

The "as read" Low Bidder is required to comply with the Special Provision.

Submit only one utilization plan for each project. The utilization plan shall be submitted in accordance with the special provision.

Bureau of Small Business Enterprises **Local Let Projects**
2300 South Dirksen Parkway Submit forms to the
Springfield, Illinois 62764 Local Agency

The Department of Transportation is requesting disclosure of information that is necessary to accomplish the purpose as outlined under State and Federal law. Disclosure of this information is **REQUIRED**. Failure to provide any information will result in the contract not being awarded. This form has been approved by the State Forms Manager Center.

PROPOSAL ENVELOPE



PROPOSALS

for construction work advertised for bids by the
Illinois Department of Transportation

Item No.	Item No.	Item No.

Submitted By:

Name:
Address:
Phone No.

Bidders should use an IDOT proposal envelope or affix this form to the front of a 10" x 13" envelope for the submittal of bids. If proposals are mailed, they should be enclosed in a second or outer envelope addressed to:

Engineer of Design and Environment - Room 326
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

NOTICE

Individual bids, including Bid Bond and/or supplemental information if required, should be securely stapled.

CONTRACTOR OFFICE COPY OF CONTRACT SPECIFICATIONS

NOTICE

None of the following material needs to be returned with the bid package unless the special provisions require documentation and/or other information to be submitted.

**Contract No. 74643
Various Counties
Section D7 ITS 2014
Various Routes
District 7 Construction Funds**



Illinois Department of Transportation

SUBCONTRACTOR DOCUMENTATION

Public Acts 96-0795, 96-0920, and 97-0895 enacted substantial changes to the provisions of the Code (30 ILCS 500). Among the changes are provisions affecting subcontractors. The Contractor awarded this contract will be required as a material condition of the contract to implement and enforce the contract requirements applicable to subcontractors that entered into a contractual agreement with a total value of \$50,000 or more with a person or entity who has a contract subject to the Code and approved in accordance with article 108.01 of the Standard Specifications for Road and Bridge Construction.

If the Contractor seeks approval of subcontractors to perform a portion of the work, and approval is granted by the Department, the Contractor shall provide a copy of the subcontract to the Illinois Department of Transportation's CPO upon request within 15 calendar days after execution of the subcontract.

Financial disclosures required pursuant to Sec. 50-35 of the Code must be submitted for all applicable subcontractors. The subcontract shall contain the certifications required to be made by subcontractors pursuant to Article 50 of the Code. This Notice to Bidders includes a document incorporating all required subcontractor certifications and disclosures for use by the Contractor in compliance with this mandate. The document is entitled State Required Ethical Standards Governing Subcontractors.

RETURN WITH SUBCONTRACT

STATE ETHICAL STANDARDS GOVERNING SUBCONTRACTORS

Article 50 of the Code establishes the duty of all State CPOs, SPOs, and their designees to maximize the value of the expenditure of public moneys in procuring goods, services, and contracts for the State of Illinois and to act in a manner that maintains the integrity and public trust of State government. In discharging this duty, they are charged by law to use all available information, reasonable efforts, and reasonable actions to protect, safeguard, and maintain the procurement process of the State of Illinois.

The certifications hereinafter made by the subcontractor are each a material representation of fact upon which reliance is placed should the Department approve the subcontractor. The CPO may terminate or void the contract approval if it is later determined that the bidder or subcontractor rendered a false or erroneous certification. If a false certification is made by a subcontractor the contractor's submitted bid and the executed contract may not be declared void unless the contractor refuses to terminate the subcontract upon the State's request after a finding that the subcontractor's certification was false.

Section 50-2 of the Code provides that every person that has entered into a multi-year contract and every subcontractor with a multi-year subcontract shall certify, by July 1 of each fiscal year covered by the contract after the initial fiscal year, to the responsible CPO whether it continues to satisfy the requirements of Article 50 pertaining to the eligibility for a contract award. If a contractor or subcontractor is not able to truthfully certify that it continues to meet all requirements, it shall provide with its certification a detailed explanation of the circumstances leading to the change in certification status. A contractor or subcontractor that makes a false statement material to any given certification required under Article 50 is, in addition to any other penalties or consequences prescribed by law, subject to liability under the Whistleblower Reward and Protection Act for submission of a false claim.

A. Bribery

Section 50-5. Bribery.

(a) Prohibition. No person or business shall be awarded a contract or subcontract under this Code who:

(1) has been convicted under the laws of Illinois or any other state of bribery or attempting to bribe an officer or employee of the State of Illinois or any other state in that officer's or employee's official capacity; or

(2) has made an admission of guilt of that conduct that is a matter of record but has not been prosecuted for that conduct.

(b) Businesses. No business shall be barred from contracting with any unit of State or local government, or subcontracting under such a contract, as a result of a conviction under this Section of any employee or agent of the business if the employee or agent is no longer employed by the business and:

(1) the business has been finally adjudicated not guilty; or

(2) the business demonstrates to the governmental entity with which it seeks to contract, or which is signatory to the contract to which the subcontract relates, and that entity finds that the commission of the offense was not authorized, requested, commanded, or performed by a director, officer, or high managerial agent on behalf of the business as provided in paragraph (2) of subsection (a) of Section 5-4 of the Criminal Code of 2012.

(c) Conduct on behalf of business. For purposes of this Section, when an official, agent, or employee of a business committed the bribery or attempted bribery on behalf of the business and in accordance with the direction or authorization of a responsible official of the business, the business shall be chargeable with the conduct.

(d) Certification. Every bid submitted to and contract executed by the State, and every subcontract subject to Section 20-120 of the Code shall contain a certification by the contractor or the subcontractor, respectively, that the contractor or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO may declare the related contract void if any certifications required by this Section are false. A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

The contractor or subcontractor certifies that it is not barred from being awarded a contract under Section 50.5.

B. Felons

Section 50-10. Felons.

Unless otherwise provided, no person or business convicted of a felony shall do business with the State of Illinois or any State agency, or enter into a subcontract, from the date of conviction until 5 years after the date of completion of the sentence for that felony, unless no person held responsible by a prosecutorial office for the facts upon which the conviction was based continues to have any involvement with the business.

Certification. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Code shall contain a certification by the bidder or contractor or subcontractor, respectively, that the bidder, contractor, or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO may declare the related contract void if any of the certifications required by this Section are false.

RETURN WITH SUBCONTRACT

C. Debt Delinquency

Section 50-11 and 50-12. Debt Delinquency.

The contractor or bidder or subcontractor, respectively, certifies that it, or any affiliate, is not barred from being awarded a contract or subcontract under the Code. Section 50-11 prohibits a person from entering into a contract with a State agency, or entering into a subcontract, if it knows or should know that it, or any affiliate, is delinquent in the payment of any debt to the State as defined by the Debt Collection Board. Section 50-12 prohibits a person from entering into a contract with a State agency, or entering into a subcontract, if it, or any affiliate, has failed to collect and remit Illinois Use Tax on all sales of tangible personal property into the State of Illinois in accordance with the provisions of the Illinois Use Tax Act. The bidder or contractor or subcontractor, respectively, further acknowledges that the CPO may declare the related contract void if this certification is false or if the bidder, contractor, or subcontractor, or any affiliate, is determined to be delinquent in the payment of any debt to the State during the term of the contract.

D. Prohibited Bidders, Contractors and Subcontractors

Section 50-10.5 and 50-60(c). Prohibited bidders, contractors and subcontractors.

The bidder or contractor or subcontractor, respectively, certifies in accordance with 30 ILCS 500/50-10.5 that no officer, director, partner or other managerial agent of the contracting business has been convicted of a felony under the Sarbanes-Oxley Act of 2002 or a Class 3 or Class 2 felony under the Illinois Securities Law of 1953 or if in violation of Subsection (c) for a period of five years from the date of conviction. Every bid submitted to and contract executed by the State and every subcontract subject to Section 20-120 of the Code shall contain a certification by the bidder, contractor, or subcontractor, respectively, that the bidder, contractor, or subcontractor is not barred from being awarded a contract or subcontract under this Section and acknowledges that the CPO shall declare the related contract void if any of the certifications completed pursuant to this Section are false.

E. Section 42 of the Environmental Protection Act

The bidder or contractor or subcontractor, respectively, certifies in accordance with 30 ILCS 500/50-14 that the bidder, contractor, or subcontractor, is not barred from being awarded a contract or entering into a subcontract under this Section which prohibits the bidding on or entering into contracts with the State of Illinois or a State agency, or entering into any subcontract, that is subject to the Code by a person or business found by a court or the Pollution Control Board to have committed a willful or knowing violation of Section 42 of the Environmental Protection Act for a period of five years from the date of the order. The bidder or contractor or subcontractor, respectively, acknowledges that the CPO may declare the contract void if this certification is false.

The undersigned, on behalf of the subcontracting company, has read and understands the above certifications and makes the certifications as required by law.

_____ Name of Subcontracting Company		
_____ Authorized Officer	_____ Date	

RETURN WITH SUBCONTRACT
SUBCONTRACTOR DISCLOSURES

I. DISCLOSURES

- A.** The disclosures hereinafter made by the subcontractor are each a material representation of fact upon which reliance is placed. The subcontractor further certifies that the Department has received the disclosure forms for each subcontract.

The CPO may void the bid, contract, or subcontract, respectively, if it is later determined that the bidder or subcontractor rendered a false or erroneous disclosure. A contractor or subcontractor may be suspended or debarred for violations of the Code. Furthermore, the CPO may void the contract.

B. Financial Interests and Conflicts of Interest

1. Section 50-35 of the Code provides that all subcontracts with a total value of \$50,000 or more from subcontractors identified in Section 20-120 of the Code, shall be accompanied by disclosure of the financial interests of the subcontractor. This disclosed information for the subcontractor, will be maintained as public information subject to release by request pursuant to the Freedom of Information Act, filed with the Procurement Policy Board, and shall be incorporated as a material term of the Prime Contractor's contract. Furthermore, pursuant to this Section, the Procurement Policy Board may recommend to allow or void a contract or subcontract based on a potential conflict of interest.

The financial interests to be disclosed shall include ownership or distributive income share that is in excess of 5%, or an amount greater than 60% of the annual salary of the Governor, of the subcontracting entity or its parent entity, whichever is less, unless the subcontractor is a publicly traded entity subject to Federal 10K reporting, in which case it may submit its 10K disclosure in place of the prescribed disclosure. If a subcontractor is a privately held entity that is exempt from Federal 10K reporting, but has more than 200 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. The disclosure shall include the names, addresses, and dollar or proportionate share of ownership of each person making the disclosure, their instrument of ownership or beneficial relationship, and notice of any potential conflict of interest resulting from the current ownership or beneficial interest of each person making the disclosure having any of the relationships identified in Section 50-35 and on the disclosure form.

The current annual salary of the Governor is \$177,412.00.

In addition, all disclosures shall indicate any other current or pending contracts, subcontracts, proposals, leases, or other ongoing procurement relationships the subcontracting entity has with any other unit of state government and shall clearly identify the unit and the contract, subcontract, proposal, lease, or other relationship.

2. Disclosure Forms. Disclosure Form A is attached for use concerning the individuals meeting the above ownership or distributive share requirements. A separate Disclosure Form A must be submitted with the bid for each individual meeting the above requirements. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies and a total ownership certification. **The forms must be included with each bid.**

C. Disclosure Form Instructions

Form A Instructions for Financial Information & Potential Conflicts of Interest

If the subcontractor is a publicly traded entity subject to Federal 10K reporting, the 10K Report may be submitted to meet the requirements of Form A. If a subcontractor is a privately held entity that is exempt from Federal 10K reporting, but has more than 200 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. If a subcontractor is not subject to Federal 10K reporting, the subcontractor must determine if any individuals are required by law to complete a financial disclosure form. To do this, the subcontractor should answer each of the following questions. A "YES" answer indicates Form A must be completed. If the answer to each of the following questions is "NO", then the **NOT APPLICABLE STATEMENT** on the second page of Form A must be signed and dated by a person that is authorized to execute contracts for the subcontracting company. Note: These questions are for assistance only and are not required to be completed.

1. Does anyone in your organization have a direct or beneficial ownership share of greater than 5% of the bidding entity or parent entity? YES ___ NO ___
2. Does anyone in your organization have a direct or beneficial ownership share of less than 5%, but which has a value greater than 60% of the annual salary of the Governor? YES ___ NO ___
3. Does anyone in your organization receive more than 60% of the annual salary of the Governor of the subcontracting entity's or parent entity's distributive income? YES ___ NO ___

(Note: Distributive income is, for these purposes, any type of distribution of profits. An annual salary is not distributive income.)

4. Does anyone in your organization receive greater than 5% of the subcontracting entity's or parent entity's total distributive income, but which is less than 60% of the annual salary of the Governor? YES ___ NO ___

(Note: Only one set of forms needs to be completed per person per subcontract even if a specific individual would require a yes answer to more than one question.)

A "YES" answer to any of these questions requires the completion of Form A. The subcontractor must determine each individual in the subcontracting entity or the subcontracting entity's parent company that would cause the questions to be answered "Yes". Each form must be signed and dated by a person that is authorized to execute contracts for your organization. **Photocopied or stamped signatures are not acceptable.** The person signing can be, but does not have to be, the person for which the form is being completed. The subcontractor is responsible for the accuracy of any information provided.

If the answer to each of the above questions is "NO", then the **NOT APPLICABLE STATEMENT** on page 2 of Form A must be signed and dated by a person that is authorized to execute contracts for your company.

RETURN WITH SUBCONTRACT

Form B: Instructions for Identifying Other Contracts & Procurement Related Information

Disclosure Form B must be completed for each subcontract submitted by the subcontracting entity. *Note: Checking the NOT APPLICABLE STATEMENT on Form A does not allow the subcontractor to ignore Form B. Form B must be completed, checked, and dated or the subcontract will not be approved.*

The Subcontractor shall identify, by checking Yes or No on Form B, whether it has any pending contracts, subcontracts, leases, bids, proposals, or other ongoing procurement relationship with any other (non-IDOT) State of Illinois agency. If "No" is checked, the subcontractor only needs to complete the check box on the bottom of Form B. If "Yes" is checked, the subcontractor must list all non-IDOT State of Illinois agency pending contracts, subcontracts, leases, bids, proposals, and other ongoing procurement relationships. These items may be listed on Form B or on an attached sheet(s). Contracts with cities, counties, villages, etc. are not considered State of Illinois agency contracts and are not to be included. Contracts or subcontracts with other State of Illinois agencies such as the Department of Natural Resources or the Capital Development Board must be included.

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form A Subcontractor: Financial Information & Potential Conflicts of Interest Disclosure

Subcontractor Name, Legal Address, City, State, Zip, Telephone Number, Email Address, Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Code (30 ILCS 500). Subcontractors desiring to enter into a subcontract of a State of Illinois contract must disclose the financial information and potential conflict of interest information as specified in this Disclosure Form.

The current annual salary of the Governor is \$177,412.00.

DISCLOSURE OF FINANCIAL INFORMATION

1. Disclosure of Financial Information. The individual named below has an interest in the SUBCONTRACTOR (or its parent) in terms of ownership or distributive income share in excess of 5%, or an interest which has a value of more than 60% of the annual salary of the Governor.

FOR INDIVIDUAL (type or print information) NAME: ADDRESS Type of ownership/distributable income share: stock sole proprietorship Partnership other: (explain on separate sheet): % or \$ value of ownership/distributable income share:

2. Disclosure of Potential Conflicts of Interest. Check "Yes" or "No" to indicate which, if any, of the following potential conflict of interest relationships apply. If the answer to any question is "Yes", please attach additional pages and describe.

(a) State employment, currently or in the previous 3 years, including contractual employment of services. Yes ___ No ___

If your answer is yes, please answer each of the following questions.

1. Are you currently an officer or employee of either the Capitol Development Board or the Illinois State Toll Highway Authority? Yes ___ No ___

2. Are you currently appointed to or employed by any agency of the State of Illinois? If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, provide the name the State agency for which you are employed and your annual salary.

RETURN WITH SUBCONTRACT

3. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 100% of the annual salary of the Governor?
Yes ___ No ___

4. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds 60% of the annual salary of the Governor, are you and your spouse or minor children entitled to receive (i) more than 15 % in the aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of two times the salary of the Governor?
Yes ___ No ___

(b) State employment of spouse, father, mother, son, or daughter, including contractual employment services in the previous 2 years.

Yes ___ No ___

If your answer is yes, please answer each of the following questions.

1. Is your spouse or any minor children currently an officer or employee of the Capitol Development Board or the Illinois Toll Highway Authority?
Yes ___ No ___

2. Is your spouse or any minor children currently appointed to or employed by any agency of the State of Illinois? If your spouse or minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, provide the name of your spouse and/or minor children, the name of the State agency for which he/she is employed and his/her annual salary. _____

3. If your spouse or any minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, as of 7/1/07) are you entitled to receive (i) more then 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 100% of the annual salary of the Governor?
Yes ___ No ___

4. If your spouse or any minor children are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds 60% of the annual salary of the Governor, are you and your spouse or minor children entitled to receive (i) more than 15 % in the aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of two times the annual salary of the Governor?
Yes ___ No ___

(c) Elective status; the holding of elective office of the State of Illinois, the government of the United States, any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois currently or in the previous 3 years.
Yes ___ No ___

(d) Relationship to anyone holding elective office currently or in the previous 2 years; spouse, father, mother, son, or daughter.
Yes ___ No ___

(e) Appointive office; the holding of any appointive government office of the State of Illinois, the United States of America, or any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois, which office entitles the holder to compensation in excess of the expenses incurred in the discharge of that office currently or in the previous 3 years.
Yes ___ No ___

(f) Relationship to anyone holding appointive office currently or in the previous 2 years; spouse, father, mother, son, or daughter.
Yes ___ No ___

(g) Employment, currently or in the previous 3 years, as or by any registered lobbyist of the State government.
Yes ___ No ___

RETURN WITH SUBCONTRACT

(h) Relationship to anyone who is or was a registered lobbyist in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___ No ___

(i) Compensated employment, currently or in the previous 3 years, by any registered election or reelection committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections. Yes ___ No ___

(j) Relationship to anyone; spouse, father, mother, son, or daughter; who was a compensated employee in the last 2 years by any registered election or re-election committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections. Yes ___ No ___

3 Communication Disclosure.

Disclose the name and address of each lobbyist and other agent of the bidder or offeror who is not identified in Section 2 of this form, who is has communicated, is communicating, or may communicate with any State officer or employee concerning the bid or offer. This disclosure is a continuing obligation and must be promptly supplemented for accuracy throughout the process and throughout the term of the contract. If no person is identified, enter "None" on the line below:

Name and address of person(s): _____

RETURN WITH SUBCONTRACT

4. Debarment Disclosure. For each of the persons identified under Sections 2 and 3 of this form, disclose whether any of the following has occurred within the previous 10 years: debarment from contracting with any governmental entity; professional licensure discipline; bankruptcies; adverse civil judgments and administrative findings; and criminal felony convictions. This disclosure is a continuing obligation and must be promptly supplemented for accuracy throughout the procurement process and term of the contract. If no person is identified, enter "None" on the line below:

Name of person(s): _____

Nature of disclosure: _____

APPLICABLE STATEMENT

This Disclosure Form A is submitted on behalf of the INDIVIDUAL named on previous page. Under penalty of perjury, I certify the contents of this disclosure to be true and accurate to the best of my knowledge.

Completed by: _____ Date _____
Signature of Individual or Authorized Officer

NOT APPLICABLE STATEMENT

Under penalty of perjury, I have determined that no individuals associated with this organization meet the criteria that would require the completion of this Form A.

This Disclosure Form A is submitted on behalf of the SUBCONTRACTOR listed on the previous page.

_____ Date _____
Signature of Authorized Officer

RETURN WITH SUBCONTRACT

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form B
Subcontractor: Other Contracts & Financial Related Information Disclosure

Form with fields: Subcontractor Name, Legal Address, City, State, Zip, Telephone Number, Email Address, Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Code (30 ILCS 500). This information shall become part of the publicly available contract file. This Form B must be completed for subcontracts with a total value of \$50,000 or more, from subcontractors identified in Section 20-120 of the Code, and for all open-ended contracts.

DISCLOSURE OF OTHER CONTRACTS, SUBCONTRACTS, AND PROCUREMENT RELATED INFORMATION

1. Identifying Other Contracts & Procurement Related Information. The SUBCONTRACTOR shall identify whether it has any pending contracts, subcontracts, including leases, bids, proposals, or other ongoing procurement relationship with any other State of Illinois agency: Yes ___ No ___

If "No" is checked, the subcontractor only needs to complete the signature box on the bottom of this page.

2. If "Yes" is checked. Identify each such relationship by showing State of Illinois agency name and other descriptive information such as bid or project number (attach additional pages as necessary). SEE DISCLOSURE FORM INSTRUCTIONS:

THE FOLLOWING STATEMENT MUST BE CHECKED

Signature box with fields: Signature of Authorized Representative, Date

OWNERSHIP CERTIFICATION

Please certify that the following statement is true if the individuals for all submitted Form A disclosures do not total 100% of ownership

Any remaining ownership interest is held by individuals receiving less than \$106,447.20 of the bidding entity's or parent entity's distributive income or holding less than a 5% ownership interest.

Yes No N/A (Form A disclosure(s) established 100% ownership)



NOTICE TO BIDDERS

1. TIME AND PLACE OF OPENING BIDS. Sealed proposals for the improvement described herein will be received by the Department of Transportation. Electronic bids are to be submitted to the electronic bidding system (icx-Integrated Contractors Exchange). Paper-based bids are to be submitted to the Chief Procurement Officer for the Department of Transportation in care of the Chief Contracts Official at the Harry R. Hanley Building, 2300 South Dirksen Parkway, in Springfield, Illinois until 10:00 o'clock a.m. September 19, 2014. All bids will be gathered, sorted, publicly opened and read in the auditorium at the Department of Transportation's Harry R. Hanley Building shortly after the 10:00 a.m. cut off time.

2. DESCRIPTION OF WORK. The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

**Contract No. 74643
Various Counties
Section D7 ITS 2014
Various Routes
District 7 Construction Funds**

This project consists of furnishing and installing overhead sign truss and butterfly truss mounted dynamic message signs and closed circuit television cameras along various routes and rest areas within District 7 including furnishing and installing all communication equipment and software required to connect the DMS and CCTV to the Operations Office and Traffic Sign Shop Communications Center.

3. INSTRUCTIONS TO BIDDERS. (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.

(b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.

4. AWARD CRITERIA AND REJECTION OF BIDS. This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to readvertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Erica J. Borggren,
Acting Secretary

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2014

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS, frequently used RECURRING SPECIAL PROVISIONS, and LOCAL ROADS AND STREETS RECURRING SPECIAL PROVISIONS.

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 1-1-12) (Revised 1-1-14)

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STATE OF ILLINOIS

SPECIAL PROVISIONS

CONTRACT SPECIFICATIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2012, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of Various Routes, Section D7 ITS 2014 in Various Counties, **Contract No. 74643** and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

LOCATION OF PROJECT

This project is located at various routes as follows:

Location 1:

Effingham County
FAI Route 70 (I-70) EB
2.05 miles West of I-70 & IL 128
Interchange in Altamont
M.P. 80.40
Sta. 1365+00

Location 2:

Effingham County
FAI Route 57 (I-57) NB
0.08 Miles North of E 400th Ave.
M.P. 148.4
Sta. 4500+00

Location 3:

Cumberland County
FAI Route 57 (I-57) SB
0.24 Miles South of Co Rd 1300N
M.P. 178.8
Sta. 217+50

Location 4:

Cumberland County
FAI Route 70 (I-70) WB
0.35 Miles East of Co Rd 675E
M.P. 107.6
Sta. 180+400

Location 5:

Clark County
FAI Route 70 (I-70) WB
0.79 Miles East of Illinois/Indiana State line
M.P. 155.0
Sta. 515+51

Location 6:

Lawrence County
US 50 (FAP 327) WB
West of the Wabash River Bridge
M.P. 21.5
Sta. 1063+06

DESCRIPTION OF PROJECT

This work shall consist of the following at the designated locations as follows:

LOCATION NO.	ROUTE & DIRECTION	COUNTY	M.P.	STATION	DESCRIPTION OF WORK
LOC: 1	FAI 70 (I-70) EB	EFFINGHAM	80.40	1365+00	FURNISH AND INSTALL OVERHEAD SIGN STRUCTURE - SPAN, DYNAMIC MESSAGE SIGN, CCTV CAMERA AND OTHER RELATED WORK.
LOC: 2	FAI 57 (I-57) NB	EFFINGHAM	148.4	4500+00	FURNISH AND INSTALL OVERHEAD SIGN STRUCTURE - SPAN, DYNAMIC MESSAGE SIGN, CCTV CAMERA AND OTHER RELATED WORK.
LOC: 3	FAI 57 (I-57) SB	CUMBERLAND	178.8	217+50	FURNISH AND INSTALL OVERHEAD SIGN STRUCTURE - SPAN, DYNAMIC MESSAGE SIGN, CCTV CAMERA AND OTHER RELATED WORK.
LOC: 4	FAI 70 (I-70) WB	CUMBERLAND	107.6	180+400	FURNISH AND INSTALL OVERHEAD SIGN STRUCTURE - SPAN, DYNAMIC MESSAGE SIGN, CCTV CAMERA AND OTHER RELATED WORK.
LOC: 5	FAI 70 (I-70) EB	CLARK	155.0	515+51	FURNISH AND INSTALL OVERHEAD SIGN STRUCTURE – SPAN DYNAMIC MESSAGE SIGN, CCTV CAMERA AND OTHER RELATED WORK.
LOC: 6	US 50 (FAP 327)	LAWRENCE	21.5	1063+06	FURNISH AND INSTALL BUTTERFLY SIGN STRUCTURE DYNAMIC MESSAGE SIGN , CCTV CAMERA AND OTHER RELATED WORK.

COMPLETION DATE

All work associated with this project shall be completed by December 31, 2015. Should the Contractor fail to complete all work by **December 31, 2015**, the Contractor shall be liable according to Article 108.09 of the Standard Specifications.

TRAFFIC CONTROL PLAN

Revised: October 5, 2010

Traffic control shall be in accordance with the applicable sections of the Standard Specifications for Road and Bridge Construction, the applicable guidelines contained in the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways, these special provisions, and any special details and Highway Standards herein and in the plans.

Special attention is called to the following sections of the Standard Specifications, the Highway Standards, and the special provisions relating to traffic control:

Standard Specifications:

Section 701 - Work Zone Traffic Control and Protection

ERRATA Standard Specifications for Road and Bridge Construction

Supplemental Specifications:

Section 701 - Work Zone Traffic Control and Protection

Section 1106 – Work Zone Traffic Control Devices

Highway Standards:

701001	701006	701011	701101	701106	701201
701400	701406	701428	701606	701701	701901

In addition, the following also relate to traffic control for this project:

SPECIAL PROVISIONS

Road Closure for Overhead Sign Truss Installation.

Lane Closure Adjustment

Plastic Drums

Vehicle Parking

Equipment Illumination

Traffic control standards shall be applied as directed by the Engineer. Suggested applications for each standard are as follows:

Standard 701001: This standard should be used when the Contractor's operations are located at least 15' from the edge of pavement. Typical operations where this standard is required include, but are not limited to utility operations.

Standard 701006: This standard should be used when the Contractor's operations are located between 2' and 15' from the edge of pavement. Typical operations where this standard is required include, but are not limited to utility operations.

Standard 701011: This standard should be used when the Contractor's operations are located on the shoulder immediately adjacent to the edge of pavement. Typical operations where this standard is required include, but are not limited to utility operations and overhead sign truss construction.

Standard 701101: This standard should be used when the Contractor's operations are located at least 2'to 15' from the edge of pavement. Typical operations where this standard is required include, but are not limited to utility operations and guardrail installation.

Standard 701106: This standard should be used when the Contractor's operations are located more than 15' from the edge of pavement. Typical operations where this standard is required include, but are not limited to utility operations and overhead sign truss construction.

Standard 701201: This standard should be used when the Contractor's operations are located between the centerline of the roadway and 2' outside the edge of pavement. Typical operations where this standard is required include, but are not limited to utility operations.

Standard 701400: This standard should be used when the Contractor's operations require a lane closure on a freeway/expressway. Typical operations where this standard is required include, but are not limited to utility operations, shoulder widening and overhead sign truss construction.

Standard 701406: This standard should be used when the Contractor's operations are located less than 2' outside the edge of pavement. Typical operations where this standard is required include, but are not limited to utility operations.

Standard 701428: This standard should be used when the Contractor's operations require a lane closure on a freeway/expressway. Typical operations where this standard is required include, but are not limited to utility operations, shoulder widening and overhead sign truss construction.

Standard 701606: This standard should be used when the Contractor's operations require the closure of one or more lanes of traffic in an urban area. Typical operations where this standard is required include, but are not limited to utility operations and camera installations.

Standard 701701: This standard should be used when the Contractor's operations require a lane closure in an urban area. Typical operations where this standard is required include, but are not limited to utility operations and camera installations.

Basis of Payment: Conformance to these traffic control and protection standards will not be paid for as a separate item, but will be included in the cost of the contract unit price per lump sum for TRAFFIC CONTROL AND PROTECTION (SPECIAL).

BORROW AREAS, USE AREAS, AND/OR WASTE AREAS

Effective: November, 2009

In addition to the provisions contained in Article 107.22 of the Standard Specifications, any required submittal(s) to the District office shall require four (4) copies sent for processing. All copies of pictures submitted shall be in color.

GUARD POSTS

Effective: March 5, 1997

Revised: September 1, 2006

This work shall consist of furnishing and setting guard posts according to Section 634 of the Standard Specifications except as follows:

- The cross section of the posts shall be nominal 4 inches by 4 inches (100 mm by 100 mm.)
- The tops of the posts shall not be rounded, but shall be sloped at 30 degrees to the horizontal.

- The length of the posts shall be 5 feet (1.5 m).
- The embedment of the posts shall be 33 inches (0.84 m.)

For closure of median ditch checks, the nominal spacing of the posts shall be 5 feet (1.5 m.)

LIGHTING FOR NIGHTTIME HIGHWAY CONSTRUCTION

Description: This work shall consist of furnishing, installing, operating, maintaining, moving and removing all necessary lighting equipment and materials for the duration of nighttime operations on the contract. Night time operations shall consist of work which occurs shortly before sunset until after sunrise. All work shall be done according to the "Standard Specifications for Road and Bridge Construction" and as further defined herein.

Materials: Furnished lighting equipment may include fixed and/or mobile lighting systems. The term fixed lighting systems shall include portable lighting supports and luminaires and may take the form of roadway luminaires on temporary poles. The term mobile lighting systems shall include luminaires attached to mobile construction equipment. Other lighting systems, such as balloon lighting, may be adapted to both fixed and mobile lighting. All lighting equipment shall be in good operating condition and in compliance with applicable safety and design codes to the satisfaction of the Engineer and shall meet the glare requirements.

General Requirements: Whenever the Contractor's operations are being conducted at night, the Contractor shall provide such artificial lighting as determined by the Engineer to ensure safety, quality of construction, and adequate conditions for inspection of the work by the Engineer. If multiple operations are underway simultaneously at various locations, lighting meeting the specifications herein shall be provided at each separate work area.

Lighting requirements in this specification are not intended to be a substitute for other required safety measures, including: reflective clothing, traffic control devices, warning lights, barricades, drums, cones, and signs. All vehicles in the work zone shall have properly functioning vehicle headlights and all contractors' vehicles and construction equipment shall have amber flashing or strobe lights.

Lighting Levels: Unless specified otherwise within this specification, the contractor shall provide a minimum lighting level of 54 lux (5fc) through out the immediate work area. Lighting levels will be measured with a light meter in a horizontal plane 3 ft. above the pavement or ground surface.

For mobile operations the work area shall be defined as an area 9 m (25ft) in front of and behind moving equipment.

For stationary operations the work area shall consist of the entire area where work operations are being performed.

Glare Control: All provided lighting shall be designed and operated so as to avoid glare that interferes with traffic on the roadway, workers or inspection personnel. Lighting devices meeting these requirements include:

- Large point source lighting with diffuse optics with the luminaries placed at a height between 12 and 14 feet above the roadway. Large point source lighting with diffuse optics shall be defined as large globe type fixtures with frosted or semi frosted (white in color) globes.
- Tower type stadium lighting or spot lights where the lights are aimed downward at the roadway surface and rotated outward no greater than 30 degrees from nadir (straight down).

Glare requirements also apply to flagger lighting.

Light Trespass: Lighting shall be provided and maintained so as not to cause annoyance for residences adjoining the worksite. If any complaints are received by the Engineer and/or the Contractor from residences adjoining the worksite, the Contractor shall respond immediately and modify lighting arrangement or add any necessary hardware to shield light trespass to adjoining properties. These modifications should not affect the Contractor's compliance with other requirements in this specification.

Lighting Equipment: All lighting equipment shall be furnished as required and retained by the Contractor after the work is completed. Material and/or equipment shall be in good operating condition. Before nighttime operations may begin all required lighting equipment and/or materials must be ready for operation to the satisfaction of the Engineer. Lighting shall be provided and maintained in conformity with the requirements of both the National Electrical Code (NEC) and the National Electrical Safety Code (NESC), and any applicable safety and design codes.

The Contractor shall provide sufficient fuel, spare lamps, generators, and personnel qualified to operate the lights to assure that they will be maintained in operation during night work. The Contractor shall provide backup lighting to replace failed lights and equipment during night work. The backup equipment shall be on the project and available for use at all times during night work.

Requirements for Mobile Operations:

Milling and Paving.

To provide the required lighting levels, the contractor shall mount a minimum of one large point source light on each piece of mobile construction equipment used in the construction zone. This would include the material transfer device, bituminous paving machine, bituminous rollers, milling machine, and any broom used in the milling process. Trucks used to transport materials and personnel, shall be excluded from this lighting requirement.

The additional light fixtures shall be mounted on construction equipment in a way that does not obstruct the sight of the equipment operator. The contractor shall not operate the standard headlights on the construction equipment when in the work zone.

Patching Operations

The contractor shall be required to provide the required lighting levels at each patching location where active work is being performed.

Striping, Raised Pavement Marker Removal/Installation and other Pavement Marking Operations

The striping truck shall use its normal headlights during the marking operations. Truck mounted attenuators with arrow boards used in this operation will not be required to have additional lighting. Additional lighting may be used as necessary for the operator to perform the pavement striping function.

For raised pavement marker removal and installation and other pavement marking operations, where workers are on foot outside the vehicle the required lighting levels shall be provided.

Installation and Removal of Work Zone Traffic Control Signs and Devices

Any truck used during the installation and removal of work zone traffic control devices shall have additional lighting to provide the required lighting levels.

Materials Testing and Construction Inspection Personnel

A portable lighting system meeting the requirements of this specification shall also be provided for the person performing material testing and straightedge or other smoothness test. The lighting levels shall be 54 lux (5fc) for a distance of 15 ft. in front and back of this individual.

Other Mobile Operations

For other mobile operations, a general guide shall be to provide the required lighting levels at any location where workers are on foot outside the vehicle working.

Requirements for Stationary Operations For stationary operations the contractor shall use lighting sources which meet the required specifications for General Requirements; Lighting Levels; Glare Control; Light Trespass; and Lighting Equipment.

Inspection: The Engineer and the Contractor shall have an on-site, after dark, meeting to inspect the conformity of provided lighting conditions on site to this specification. No work shall be permitted until all requirements are met. At any time during the course of nighttime work, should the lighting be deemed inadequate by the Engineer, the work shall be halted until adequate lighting is provided. This suspension of work shall be at no additional cost to the Department and the Contractor shall receive no time extension to complete the contract work.

Basis Of Payment: This work will not be paid for separately.

ROAD CLOSURE FOR OVERHEAD SIGN TRUSS INSTALLATION

Road shall be closed in one direction during the installation of the overhead sign trusses under the following conditions:

- a) The Engineer shall be notified a minimum of ten(10) working days in advance of any proposed road closure or lane restrictions. This time is required to coordinate closure operations with police forces and issue the necessary press release.
- b) Road closures for the purpose of installing the new overhead sign truss structure and or the dynamic message signs shall be scheduled between the hours of 10:00 p.m. to 6:00 a.m.

- c) Any and all road closures and lane restrictions shall be removed and/or rescheduled if adverse weather such as rain, snow or fog is present.
- d) All labor, equipment and materials required to perform the short term work shall be present prior to closing the lanes.
- e) Road closures on any road shall be limited to a maximum of 15 minutes and shall be coordinated with the Illinois State police by the Contractor and through the District 7, Traffic Control Supervisor, Jason Wells, phone (217) 342-8285, seventy-two (72) hour advance notice is required.
- f) After the 15 minute closure, "all" lanes shall be immediately reopened to traffic for a minimum clearing period of 30 minutes or longer before resuming normal construction activities as directed by the Engineer.
- g) Delays to the Contractor caused by complying with these requirements will be considered incidental to the item for Traffic Control and Protection, and no additional compensation will be allowed.
- h) The Contractor is notified that there are nearby contracts. This project shall coordinate with Contract #74295 & #74299. Cooperation between the Contractors shall abide as per Art. 105.08. The Engineer reserves the right to open all lanes of I-57 & I-70 to traffic.

Basis of Payment: Conformance for Road Closure for Overhead Sign truss Installation will not be paid for as a separate item, but will be included in the cost of the contract unit price per lump sum for TRAFFIC CONTROL AND PROTECTION (SPECIAL).

LANE CLOSURE ADJUSTMENT

In the event that the traffic control lane closure (taper section) falls within a curved section of roadway, the lane closure shall be extended until the taper section of the closure falls within the tangent section approaching the roadway curve. Sign spacing shall be adjusted accordingly to the applicable Traffic Control Standard involved.

Additional work or materials required for this adjustment shall not be paid for separately but shall be included in the cost of the Traffic Control and Protection (Special).

PLASTIC DRUMS

Effective: August 15, 2005

Revised: January 1, 2008

Plastic drums according to Standard 701901 with steady burning lights shall be used in lieu of cones, Type I and Type II barricades, and vertical barricades throughout lane closures.

VEHICLE PARKING

Revised: January 1, 2007

Parking of personal vehicles within the interstate right of way will be strictly prohibited. Parking of construction equipment within the right of way will be permitted only at locations approved by the Engineer and never within median area or overnight on any roadway area.

EQUIPMENT ILLUMINATION

Revised January 1, 2007

The Contractor shall equip all machinery and vehicles with a flashing amber dome light, installed so the illumination is visible from all directions.

STEEL PLATE BEAM GUARDRAIL

Description. This work shall consist of furnishing and installing Steel Plate Beam Guardrail as shown on plans in accordance with Section 630 and other applicable sections of the Standard Specifications.

Steel Plate Beam Guardrail shall be installed before the commencement of any work related to the installation of the sign structures.

SYSTEM IMPLEMENTATION, EQUIPMENT INTEGRATION AND SUPPORT

The Contractor shall install the dynamic message signs and CCTV cameras at the locations indicated on the plans.

All furnished components shall be subject to a 90 day burn-in period. During the "burn-in" period, all dynamic message boards, CCTV cameras, communications, and all other related components shall perform continuously, without any interruption of operation, for a period of ninety days. In the event that there are operational problems during the burn-in period, the burn-in period shall reset back to day one.

After the successful completion of the burn-in period, the system will have completed final acceptance.

The Department will program the cameras Ethernet switches, and the cellular modems.

The Contractor shall be responsible for installing the proposed dynamic message boards and CCTV cameras in accordance with the plans, specifications, and manufacturers recommended practices.

This work will not be paid for separately, but shall be included in the contract bid price.

DMS SIGN SOFTWARE AND MAINTENANCE TRAINING

As part of the contract, the Contractor shall provide on-site training for technicians and operators of the DMS software and associated equipment. This training will address normal operations of the system, routine system maintenance, provisioning and system setup, and fault diagnosis and system repair.

The Contractor shall provide the following training:

- Two (2) 4-hour software operations training sessions with capacity for twelve (12) participants for IDOT District Seven DMS software operators to be held at the IDOT District 7 headquarters located in Effingham.
- Two (2) 4-hour maintenance training sessions with capacity for ten (10) participants for IDOT District Seven maintenance personnel to be held at the IDOT District 7 headquarters located in Effingham.

The training shall include, but not be limited to, the following:

1. "Hands-on" operation of all sign control hardware and software
2. Explanation of all system commands, their function and usage
3. Insertion of data
4. Required preventative maintenance procedures
5. Servicing procedures
6. System "troubleshooting" or problem identification procedures

Training shall be hands-on with ample time for questions. The Contractor shall submit an agenda for the training and one complete set of training material (manual and schematic) along with the qualification of proposed instructors) to the Department for approval at least 30 calendar days before the training is to begin. The Department will review material and approve or request changes.

The DMS Manufacturer shall record the entire training on DVD and shall provide five copies of the DVD's to the Department for later use.

The Contractor shall furnish training manuals that contain a course outline, ATMS software operation information, hands-on training exercises, and any other pertinent items for each participant.

This work will not be paid for separately, but shall be included in the contract bid price for TRUSS MOUNTED LED DYNAMIC MESSAGE SIGN.

LOCATION OF UNDERGROUND STATE MAINTAINED FACILITIES

The Contractor shall be responsible for locating all existing IDOT electrical facilities prior to performing any work at his/her own expense if required. The Contractor shall also be liable for any damage to facilities resulting from inaccurate locating. The Contractor may obtain, on request, plans of existing electrical facilities from the Department.

The Contractor shall also be responsible for locating and providing protection for facilities during all phases of construction. If at any time, the facilities are damaged, the Contractor shall immediately notify the Department and make all necessary arrangements for repair to the satisfaction of the Engineer. This work shall be included in the contract bid price and no additional compensation will be allowed.

CONTRACT GUARANTEE

The Contractor shall guarantee all electrical equipment, apparatus, materials, and workmanship provided under the contract for a period of twelve (12) months after the date of final acceptance.

All instruction sheets required to be furnished by the manufacturer for materials and supplies and for operations shall be delivered to the Engineer prior to the acceptance of the project, with the following warranties and guarantees:

1. The manufacturer's standard written warranty for each piece of electrical equipment or apparatus furnished under the contract.
2. The Contractor's written guarantee that, for a period of twelve (12) months after the date of final inspection of the project, all necessary repairs to or replacement of said warranted equipment, or apparatus shall be made by the Contractor at no cost to the Department.
3. The Contractor's written guarantee for satisfactory operation of all electrical systems furnished and constructed under the contract for a period of twelve months after final inspection of the project.

UTILITY COMPANY CHARGES FOR PROVIDING ELECTRIC SERVICE

Charges incurred by the Department for establishing electric services at each dynamic message board location shall be paid for in accordance with Article 109.05 of the Standard Specifications.

The Contractor shall coordinate with the utility companies and their contractors to install electric services at each location.

The Contractor shall pay all charges directly to the utility companies. The Contractor shall receive as administrative costs an amount equal to five percent of the first \$10,000 and one percent of any amount over \$10,000 of the total actual amount paid per bill with the minimum payment being \$100.

POT-HOLING FOR LOCATION OF EXISTING UNDERGROUND UTILITIES

Potholing to locate existing underground utilities shall be included in the contract bid price for the pay item UNDERGROUND CONDUIT of the size and type specified.

Removal and replacement of existing sidewalk, pavement, and islands only for utility locating purposes will not be paid for separately, but shall be included in the contract bid price for the pay item UNDERGROUND CONDUIT of the size and type specified.

CONSTRUCTION PERMITS

The Contractor shall be responsible for obtaining all required permits from counties, municipalities, railroads, and other entities prior to beginning work. The Contractor shall pay all costs associated with obtaining the permits.

Basis of Payment. This work will not be paid for separately, but shall be included in the contract bid price.

AS-BUILT DOCUMENTATION

The Contractor shall locate all proposed conduit, communication vaults, and camera poles every 100 feet using a GIS locating device that is accurate to the nearest foot.

The Contractor shall provide a GIS based map of the conduit route and a complete listing of all of map coordinates in an electronic format (Google Earth KML or KMZ shape file).

Basis of Payment. This work will not be paid for separately, but shall be included in the contract bid price.

ELECTRIC SERVICE INSTALLATION

This work shall be in accordance with Section 804 and 1086 of the Standard Specifications except as modified herein.

The service installation shall include furnishing and installing a 25 foot class 3 treated wood pole, disconnect switch, and all associated appurtenances including a meter base if required by the utility company. The service disconnect shall be mounted on the wood pole.

Galvanized steel conduit shall be used for the service riser. The use of PVC conduit will not be allowed. In the event that the utility company will not allow rigid conduit to be installed, the Contractor shall install an aluminum or galvanized steel conduit cover to protect the service conduit from the ground up to a height of eight feet.

A rain tight hub assembly (Myers type) shall be used when conduit enters the switch from the top of the disconnect.

The service disconnect switch shall be a stainless steel, weatherproof NEMA 4X enclosure that meets the following specifications:

100-Ampere (250 V) Minimum Fused Disconnect Switch: Unless indicated otherwise on the plan sheets, the fused disconnect switch shall be single-throw, three-wire (two poles, two fuses, and solid neutral). The switch shall provide for locking the blades in either the "On" or "Off" position with one or two padlocks and for locking the cover in the closed position. The disconnect switch and fuse rating shall be rated at the voltage and amperage required to comply with utility company and equipment requirements. All fuses shall be provided with the disconnect installation.

The service disconnect shall be installed at a maximum height of 48”.

The Department will furnish all padlocks.

Basis of Payment: This work shall be paid for at the contract unit price each for ELECTRIC SERVICE INSTALLATION which price shall be payment in full for all labor, equipment, and materials required to provide and install the electrical service installation described above, complete.

SEEDING, MINOR AREAS

Effective: July 1, 1990

Revised: January 1, 2007

Seeding, fertilizing, and mulching shall be done in accordance with Article 250 of the Standard Specifications except for the following revisions:

All areas disturbed by the work performed shall be seeded, fertilized, and mulched in accordance with Article 251.03(a). The materials may be purchased locally and placed as directed by the engineer.

The estimated area is approximately 0.1 acre. The seed mixture shall be applied at 100 pounds/acre (110 kg/ha). The mixture shall be one that contains a high percentage of Kentucky Blue Grass. All seeds shall meet the purity and noxious weed requirements of Article 1081.04 of the Standard Specifications, and be approved by the engineer.

The fertilizer nutrients shall be applied at a rate of 270 lbs. (300 kg) of actual nutrients per acre (hectare). The fertilizer furnished shall be ready mixed material having a ratio of (1-1-1).

The contractor shall provide the engineer with the test results from the seed container and the chemical analysis of the fertilizer nutrients.

The seed, fertilizer, and mulch will not be measured for payment but shall be included in the contract bid price for the pay item UNDERGROUND CONDUIT of the type specified.

GROUNDING OF ITS STRUCTURES

This work shall be in accordance with the applicable articles of Sections 807, 817 and 1066 of the Standard Specifications with the following modifications:

This work shall consist of furnishing and installing a grounding wire to connect all proposed ITS cabinets and camera poles in accordance with NEC requirements.

The proposed ground wire shall be an insulated #6 XLP green copper conductor. This wire shall be bonded to all items and their associated ground rods utilizing mechanical lugs and bolts. This wire may be made continuous by splicing in the adjacent handholes with compression lugs. Split bolts will not be allowed.

The grounding wire shall be bonded to the grounded conductor at the service disconnect per the NEC.

All clamps, hardware, and other materials required shall be included.

Basis of Payment: This work will be paid for at the contract unit price per foot for ELECTRIC CABLE IN CONDUIT, 600V (XLP-TYPE USE) 1/C NO. 6 which price shall be payment in full for all labor, materials, and equipment required to furnish and install the the grounding wire described above.

CLOSED-CIRCUIT TELEVISION DOME CAMERA, IP BASED

Description. This work shall consist of furnishing and installing an integrated Closed-Circuit Television (CCTV) Dome Camera Assembly, camera brackets, and all other items required for installation and operation. This assembly shall contain all components identified in the Materials Section and shall be configured as indicated on the plan sheets.

Materials.

The CCTV camera shall be an Axis Model Q6042-E Dome Camera Assembly for integration into the existing District 7 ITS system and ATMS software.

The Contractor shall provide all materials required to install the proposed camera on the proposed sign structure camera mast as shown on the plan sheets.

The Contractor shall submit catalog cut sheets to the Department for all items (mounting brackets, hardware, etc.) that will be utilized for review prior to commencing work.

The Department will program the cameras.

The camera shall meet or exceed the following specifications:

CAMERA

VIDEO:	60 Hz (NTSC), 50 Hz (PAL)
IMAGE SENSOR:	¼" ExView HAD Progressive Scan CCD
LENS:	3.3 – 119 mm, F1.4 – 4.2, autofocus, automatic day/night, horizontal angle of view: 1.7° - 57.2°
MINIMUM ILLUMINATION:	Color: 0.5 lux at 30 IRE F1.4, B/W: 0.008 lux at 30 IRE F1.4
SHUTTER TIME: NTSC:	1/30,000 s to 0.5 s (60 Hz), PAL: 1/30,000 s – 1.5 s (50 Hz)

PAN/TILT/ZOOM: E-flip, 256 preset positions
Pan: 360° endless, 0.05 – 450°/s
Tilt: 220°, 0.05 – 450°/s
Zoom: 36x optical zoom and 12x digital zoom, total 432x zoom
Guard tour
Control queue
On-screen directional indicator
Tour Recording

VIDEO

VIDEO COMPRESSION: H.264 (MPEG-4 Part 10/AVC), Motion JPEG

RESOLUTIONS: NTSC: 752x480 to 176x120 (60 Hz), PAL: 736x576 to 176x144 (50 Hz)

FRAME RATE (H.264): Up to 30/25 (NTSC/PAL) fps in all resolutions

FRAME RATE (M-JPEG): Up to 30/25 (NTSC/PAL) fps in all resolutions

VIDEO STREAMING: Multi-stream H.264 and Motion JPEG: 3 simultaneous, individually configured streams in max. resolution at 30/25 (NTSC/PAL) fps; more streams if identical or limited in frame rate/resolution; Controllable frame rate and bandwidth; VBR/CBR H.264

IMAGE SETTING: Wide Dynamic Range (WDR), Electronic Image Stabilization (EIS), manual shutter time, compression, color, brightness, contrast, sharpness, rotation, white balance, exposure control, exposure zones, backlight compensation, fine tuning of behavior at low light, aspect ratio correction, Text and image overlay, privacy mask, image freeze on PTZ

NETWORK

SECURITY: Password protection, IP address filtering, HTTPS* encryption, IEEE 802.1X* network access control, digest authentication, user access log

PROTOCOLS: IPv4/v6, HTTP, HTTPS*, SSL/TLS, QoS Layer 3 DiffServ, FTP, CIFS/SMB, SMTP, Bonjour, UPnP, SNMPv1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP, SOCKS, SSH, NTCIP

SYSTEM INTEGRATION

APPLICATION PROG INTERFACE: Open API for software integration, including VAPIX® from Axis Communications available at www.axis.com

INTELLIGENT VIDEO: Video motion detection, auto-tracking, active gate-keeper, Axis platform enabling installation of additional applications

EVENT TRIGGERS: Video motion detection, Shock detection, Fan, Heater, Temperature, Manual trigger, Autotracking, Moving, PTZ preset, Edge storage events, AXIS Camera Application Platform

EVENT ACTIONS: File upload: FTP, HTTP, network share and email, Notification: email, HTTP and TCP, PTZ preset, Guard tour, Autotracking, Day/night mode, Video recording to edge storage, Pre- and post-alarm video buffering

BUILT IN INSTALLATION AIDS Pixel Counter

GENERAL

CASING: IP66-, NEMA 4X- and IK10-rated metal casing (aluminum), polycarbonate (PC) clear dome, sunshield (PC/ASA)

MEMORY: 512 MB RAM, 128 MB Flash

POWER CAMERA: High Power over Ethernet (High PoE), max. 60 W AXIS T8124 High PoE 60 W Midspan 1-port: 100–240 V AC, max. 74 W

CONNECTORS: RJ-45 for 10BASE-T/100BASE-TX, IP66-rated RJ-45 connector kit included

EDGE STORAGE: SD/SDHC/SDXC slot supporting memory card up to 64 GB (card not included); support for recording to network share (network-attached storage or file server)

OPERATING CONDITIONS: Camera unit: -50 °C to 50 °C (-58 °F to 122 °F), Arctic Temperature Control enables camera start-up at temperatures as low as -50 °C (-58 °F), Humidity 10–100% RH (condensing)

APPROVALS: EN 55022 Class A, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, EN 55024, EN 50121-4, IEC 62236-4, FCC Part 15 Subpart B Class A, ICES-003 Class A, VCCI Class A, C-tick AS/NZS CISPR 22 Class A, KCC KN22 Class A, KN24, IEC/EN/UL 60950-1, IEC/EN/UL 60950-22, IEC/EN 60529 IP66, NEMA 250 Type 4X, NEMA TS-2-2003 v 02.06, subsection 2.2.7, 2.2.8, 2.2.9; IEC 62262 IK10, IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-78, IEC 60068-2-14, IEC 60068-2-30, IEC 60068-2-6, IEC 60068-2-27, IEC 60068-2-60, ISO 4892-2 Midspan: EN 60950-1, GS, UL, cUL, CE, FCC, VCCI, CB, KCC, UL-AR

WEIGHT:	3.7 kg (8.2 lb.)
INCLUDED ACCESSORIES:	AXIS T8124 High PoE Midspan 1-port, IP66-rated RJ-45 connector kit, clear dome cover, sunshield, Installation Guide, CD with User's Manual, recording software, installation and management tools, Windows decoder 1-user license
VIDEO SOFTWARE:	AXIS Camera Companion (included)
WARRANTY:	Axis 3-year warranty and AXIS Extended Warranty option

Environmental Enclosure/Housing

The environmental enclosure shall be designed to physically protect the integrated camera from the outdoor environment and moisture via a sealed enclosure. If the option exists in the standard product line of the manufacturer, the assembly shall be supplied with an integral sun shield. The enclosure shall be fully water and weather resistant with a NEMA 4 rating or better.

The camera dome shall be constructed of distortion free acrylic or equivalent material that must not degrade from environmental conditions. The environmental housing shall include a camera-mounting bracket. In addition, the environmental housing shall include a heater, blower, and power surge protector. An integral fitting compatible with a standard 1-1/2 in (38.1 mm) NPT pipe, suitable for outdoor pendant mounting shall also be provided.

The enclosure shall be equipped with a heater controlled by a thermostat. The heater shall turn on when the temperature within the enclosure falls below 40° F (4.4°C). The heater shall turn off when the temperature exceeds 60°F (15.6°C). The heater will minimize internal fogging of the dome faceplate when the assembly is operated in cold weather.

In addition, a fan shall be provided as part of the enclosure. The fan will provide airflow to ensure effective heating and to minimize condensation.

The enclosure shall be equipped with a hermetically sealed, weatherproof connector, located near the top for external interface with power, video, and control feeds.

CCTV Dome Camera Mounting Supports

The Contractor shall furnish and install an Axis Pole Mount Bracket T91A67 (Part Number 5017-671) for camera installation on traffic signal mast arms and CCTV camera poles and stainless steel banding as required.

Mounting supports shall be configured as shown on the camera support detail plans and as approved by the Engineer. Mount shall be of aluminum construction with enamel or polyester powder coat finish. Braces, supports, and hardware shall be stainless steel. Wind load rating shall be designed for sustained gusts up to 90 mph (145 km/hr), with a 30% gust factor. Load rating shall be designed to support up to 75 lb (334 N). For roof or structural post/light pole mounting, mount shall have the ability to swivel inward for servicing. The mounting flange shall use standard 1-1/2 inch (38.1 mm) NPT pipe thread.

Connecting Cables

The Contractor shall furnish and install outdoor rated, shielded CAT 5E cable. The cable shall be terminated using the IP66 rated RJ-45 connector on the camera end and a shielded RJ-45 connector in the cabinet. The Contractor shall test the cable prior after termination.

Cable will be paid for separately under the pay item CAT 5 ETHERNET CABLE.

Construction Requirements.

General

The Contractor shall prepare a shop drawing detailing the complete CCTV Dome Camera Assembly and installation of all components to be supplied for approval of the Engineer. Particular emphasis shall be given to the cabling and the interconnection of all of the components.

The Contractor shall install the CCTV dome camera assembly at the locations indicated in the Plans. The CCTV Dome Camera Assembly shall be mounted on a pole, wall, or other structure.

Testing

The Contractor shall test each installed CCTV Dome Camera Assembly. The test shall be conducted from the field cabinet using the standard communication protocol and a laptop computer. The Contractor shall verify that the camera can be fully exercised and moved through the entire limits of Pan, Tilt, Zoom, Focus and Iris adjustments, using both the manual control and presets. The Contractor shall maintain a log of all testing and the results. A representative of the Contractor and a representative of the Engineer shall sign the log as witnessing the results. Records of all tests shall be submitted to the Engineer prior to accepting the installation.

Method of Measurement. The closed circuit television dome camera bid item will be measured for payment by the actual number of CCTV dome camera assemblies furnished, installed, tested, and accepted.

Basis of Payment. Payment will be made at the contract unit price for each CLOSED CIRCUIT TELEVISION DOME CAMERA, IP BASED including all equipment, material, testing, documentation, and labor detailed in the contract documents for this bid item.

TRUSS MOUNTED LED DYNAMIC MESSAGE SIGN

Description This work consists of providing a truss mounted dynamic message sign (TMDMS) at the locations shown on the Plans and as directed by the Engineer. Truss mounted dynamic message sign assembly includes the TMDMS enclosure, communication cables, conduits, and associated mounting hardware and software as described in these Special Provisions and as shown on the contract Plans. It also includes operational TMDMS software that remotely provides access to the functionality and performance specified herein.

TMDMS Manufacturer Qualifications

The TMDMS Manufacturer shall submit references as specified below. Reference data shall include current name and address of organization, and the current name and telephone number of an individual from the organization who can be contacted to verify system operation, as well as date of system installation.

Experience Requirements

The TMDMS Manufacturer shall submit at least two references, preferably from other state departments of transportation, that are successfully operating a highway LED full matrix TMDMS system, supplied by this manufacturer under the current corporate name, which otherwise meets this specification, for a period of no less than two years. The LED TMDMS systems submitted shall be full-matrix and able to display at least 3 lines of 18 characters per line, 18" characters and have walk-in access housings.

References

The TMDMS Manufacturer shall submit three references, preferably from other state departments of transportation, that are successfully operating a multi-unit, multi-lane state or interstate highway, permanently-mounted, overhead dynamic message sign system supplied by this manufacturer under the current corporate name, for a period of no less than five years.

Materials

General

The TMDMS shall be a full matrix amber LED display in a walk-in weatherproof cabinet. The TMDMS shall provide approaching motorists with a clear readable message in all normally encountered weather and lighting conditions. The TMDMS shall be capable of displaying messages with three lines, eighteen characters per line, at an eighteen inch character height.

The sign shall be designed for a minimum life of 20 years.

All materials furnished, assembled, fabricated or installed under this item shall be new, corrosion resistant and in strict accordance with the details shown in the plans and as detailed in this specification. All details and functionality listed in this specification will be thoroughly inspected and tested by the Department. Failure to meet all details and functionality detailed in this specification shall be grounds for rejection of the equipment.

The equipment design and construction shall utilize the latest available techniques with a minimum number of different parts, subassemblies, circuits, cards and modules to maximize standardization and commonality. The equipment shall be designed for ease of maintenance. All component parts shall be readily accessible for inspection and maintenance. Test points shall be provided for checking essential voltages.

The sign shall be designed and constructed so as to present a clean and neat appearance. All cables shall be securely clamped/tied in the sign housing. No adhesive attachments will be allowed.

The performance of the sign shall not be impaired due to continuous vibration caused by wind, traffic or other factors. This includes the visibility and legibility of the display.

The TMDMS hardware, along with the sign controller hardware, software and firmware, shall support all TMDMS functionality described throughout the remaining specification sections.

The TMDMS assembly shall be listed by an accredited 3rd party testing organization for conformance to Underwriters Laboratories (UL) standards 48 (Standard for Electric Signs) and 1433 (Control Centers for Changing Message Signs). Proof of this conformance shall be provided with submittal materials.

Environmental Requirements

The TMDMS shall withstand the following environmental conditions for 24 hours or more with no functional or performance degradation, permanent deformation or other damages:

Temperature:	-40 to +140°F (-40 to 60°C)
Humidity:	0 to 100 %
Wind:	To at least 90 mph with a 30% gust factor
Ice:	Front face ice load of 4 pounds per square foot

All field equipment enclosures shall be designed to withstand the effects of sand, dust, and hose-directed water. All connections shall be watertight.

Functional Requirements

The TMDMS shall be capable of accepting commands, displaying messages and returning status as required by the current version (v2) National Transportation Communications for ITS Protocol (NTCIP) Specifications applicable for TMDMS and as specified in these special provisions. The TMDMS shall communicate without error for all of the applicable National Transportation for Intelligent Transportation System Protocol (NTCIP) standards and be compliant with all applicable NTCIP standards for TMDMS. The TMDMS shall support all mandatory objects of all mandatory conformance groups of NTCIP for TMDMS.

The TMDMS shall enable the display of text, consisting of a string of alphanumeric and other characters. Each character shall be formed by a matrix of luminous pixels. The matrix of a standard character shall consist of 35 pixels over 5 columns and 7 rows. Each TMDMS shall be minimum 27 pixel high x 125 pixel wide, full matrix and capable of displaying three lines of text using a standard 5 wide x 7 high font size. All display elements and modules shall be solid state. No mechanical or electromechanical elements or shutters shall be used.

All characters, symbols, and digits shall be 18" nominal character size and shall be clearly visible and legible at a distance of 1100' within a minimum 30 degree cone of vision centered around the optical axis of the pixel.

The signs shall be capable of displaying the following:

- A static message
- A flashing message
- Alternating messages, either flashing or static

The changing from one message to another shall be instantaneous.

For message creation, the TMDMS field controller, and TMDMS control software shall support the storage and use of a minimum of three (3) alphanumeric character font files comprising the ASCII character set and including 8 directional arrows. Software shall provide the ability to create and maintain message libraries containing up to 255 messages.

Software

The Contractor shall supply fifteen licenses of remote control and sensing software used to control and interrogate the signs. This software shall provide interoperability with all other signs supplied under this contract and shall be designed to run on a workstation under Windows XP, Windows 7 and Windows Server 2008, either remotely, using the communications link connected to the TMDMS; or locally, from a laptop computer connected to the sign controller communications port. The software shall display the message to be downloaded to operators exactly as it will appear on the destination TMDMS and shall provide verification back to the operators that the actual message has been visibly displayed on the destination TMDMS on an individual pixel basis.

Central software with client/server operation shall be provided.

The software shall include functionality for message scheduling (based on date and time), message priority queuing and DMS diagnostics.

The software shall be capable of sending multiple messages to multiple signs based on a user programmable time schedule. Communications shall be by cellular wireless service. The cellular modem and service will be paid for under a separate pay item.

TMDMS control software shall support the creation of user ID's and passwords for up to 25 potential system users. User creation, as well as individual user access rights, shall be assignable only by a "System Administrator".

Before a system operator can use the TMDMS control software, the software shall request a "user name" and user "password". If the correct user name and password are not provided, access to the software shall be declined.

An 8-bit identification code shall be assignable to each controller, via switches located inside the controller enclosure. The software shall control a network of at least 250 variable message signs.

The software shall have the following functionality:

Display Control:	<ul style="list-style-type: none"> • View, group, and monitor DMS in real time • Controls any NTCIP-compliant DMS (Any DMS configuration, Portable NTCIP message displays) • Powerful list view or map view • Pre-schedule event scenarios • Scheduled status polling of DMS
Messaging:	<ul style="list-style-type: none"> • Full suite of message and graphic tools • Message changing depending time and date • Adjust message duration and priority • Time based scheduled DMS polling
Communications:	<ul style="list-style-type: none"> • Run nearly unlimited signs at once from traffic management centers with client-server architecture • Supports Ethernet and serial (COM Port) connections • Supports modem pools
Diagnostics:	<ul style="list-style-type: none"> • Log events and alert TMC staff via email • Locate pixel failures instantly with an in-software visual representation test • View status, errors, and problem codes of all DMS subsystems • Verify and troubleshoot at the pixel level
Security:	<ul style="list-style-type: none"> • Real-time verification of "on" pixels • Username/password restricted access to functional areas • Built-in security levels for easy setup • Prohibited words list

In the event that the software is not capable of operating on a laptop that is connected directly to the DMS sign, the Contractor shall provide ten additional licenses of software that can be used in the field to manage the DMS and perform sign diagnostics.

The vendor shall furnish updated copies of all software during the warranty period at no charge to the Department.

Software Documentation

Full documentation for all software and associated protocols shall be supplied to the Department on a CD-ROM. The Department reserves the right to provide this documentation to other parties who may be contracted with in order to provide overall integration or maintenance of this item.

Performance Requirements

TMDMS messages shall be clearly visible and legible from in-vehicle viewing distances between 150 and 1100 feet. While using an 18 in character height, the TMDMS shall be capable of simultaneously displaying up to 18 characters in each of three lines with spaces between characters, using 5 horizontal X 7 vertical (or larger) pixel matrices.

The TMDMS controller shall be capable of storing a minimum of 32 three-line full width messages. The controller shall be capable of downloading a minimum of 8 additional messages and commands from the communications interface.

The sign shall provide a, RS-232 communications interface in the sign control cabinet suitable for wireless, PSTN, cellular, and fiber optic communications with the sign controller. Additionally, an RS-232 serial port and Ethernet port shall be provided in the control cabinet for full sign operation by means of a laptop computer. Each serial port shall support data rates of 19.2 kbps, 14.4 kbps, 9600 bps, 4800 bps, 2400 bps, and 1200 bps.

Optical Requirements

All mandatory NTCIP sign functions shall be available and message effects shall be visible from the ground-mounted sign control cabinet.

The viewing angle of each discrete LED-formed pixel shall be a minimum cone of 30 degrees around a line normal to the TMDMS viewing surface. The intensity of each pixel shall not decrease more than 30% over the twenty-year life of the sign.

If pulse-width modulation is used for intensity control, the sign drive electronics shall use a refresh or repetition rate of 100 Hz or greater.

The TMDMS walk-in cabinet shall mount three or more light sensors, one angled in a northerly direction away from nearby lighting, scaled for 100 lux, and two normal to the sign face, pointing in opposite directions, scaled for 100,000 lux. Each sensor shall have an adjustable aiming angle. The TMDMS shall be capable of automatic dimming.

Characters Displayed

The sign shall be capable of displaying ASCII characters 32 through 126 and the following characters at any location in the message line:

“A” thru “Z”- All upper case letters.

“0” thru “9”- All decimal digits.

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

Punctuation marks shown in brackets [. , ! ? - ‘ ’ “ ” / ()]

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

3 pixel wide dash

The display modules shall be rectangular, and shall have an identical vertical and horizontal pitch between pixels. The pitch shall be no greater than 2 3/4”.

The separation between the last column of one display module and the first column of the next shall be equal to the horizontal distance between the columns of a single display module.

The characters shall be legible under all light conditions at a distance of 1100' within a 30° degree cone of vision centered around the optical axis of the pixel.

The sign shall be the proper brightness in all lighting conditions for optimum legibility. It shall be bright enough to have a good target value, but not to the point where the pixels bloom, especially in low ambient light level conditions.

The brightness and color of each pixel shall be uniform over the entire face of the sign within the fifteen degree cone of vision from 1100' to 200' in all lighting conditions. Non-uniformity of brightness or color over the face of the sign under these conditions shall be cause for rejection of the sign.

Electronic Materials and Components

All electronic components, except printed circuit boards, shall be commercially available, easily accessible, replaceable and individually removable using conventional electronics repair methods. All electronic assemblies shall meet or exceed IPC 610A workmanship standards.

Each pixel shall have a device attached to the printed circuit board (PCB) to hold and protect the LEDs. These devices shall:

1. Hold the LEDs perpendicular to the display modules within 0.5 degree,
2. Prevent the LEDs from being crushed or bent during handling,
3. Protect the LEDs from damage when the display module is laid on the front surface (the side that the LED lamps are located),
4. Not put any stress on the LEDs due to differentials of expansion and contraction between the device and the LEDs over the herein specified temperature range,
5. Not become loose or fall off during handling or due to vibrations,
6. Not block airflow over the leads of the LEDs,
7. Securely hold each LED while allowing a gap between the device and a minimum of 95% of the body of each LED for airflow,
8. Not block the light output of the LEDs at the required viewing angle,
9. Be black in color to maximize contrast.

The LEDs shall be protected from the outside environmental conditions, including moisture, snow, ice, wind, dust, dirt and UV rays.

Printed Circuit Board (PCB) design shall be such that components may be removed and replaced without damage to boards, traces or tracks.

Only FR-4 0.062 inch minimum thickness material shall be used. Inter component wiring shall be copper clad track having a minimum weight of 2 ounces per square foot with adequate cross section for current to be carried. Jumper wires will not be permitted, except from plated-through holes to component. The maximum number of jumper wires allowed per circuit board is two.

All printed circuit boards (PCBs), except for the power supply PCBs, UPS PCBs, modem PCBs and sign controller PCBs, shall be completely conformal coated with a silicone resin conformal coat.

All PCBs shall be finished with a solder mask and a component identifier silk screen.

Capacitors

The DC and AC voltage ratings as well as the dissipation factor of a capacitor shall exceed the worst case design parameters of the circuitry by 50%.

A capacitor which can be damaged by shock or vibration shall be supported mechanically by a clamp or fastener.

Capacitor encasements shall be resistant to cracking, peeling and discoloration.

Resistors

Any resistor shall not be operated in excess of 50% of its power rating.

Semiconductor Devices

All transistors, integrated circuits, and diodes shall be a standard type listed by EIA and clearly identifiable.

Connectors

All PCB edge connectors and cable connectors, except for those found in the power supply, UPS, modem and sign controller, shall be base plated with nickel and finished with 30 micro-inches of gold.

Mechanical Components

All external screws, nuts, and locking washers shall be stainless steel. No self-tapping external screws shall be used. All parts shall be made of corrosion resistant materials, such as plastic, stainless steel or aluminum. All materials used in construction shall be resistant to fungus growth and moisture deterioration. Dissimilar metals shall be separated by an inert dielectric material.

Main Power Supply and Energy Distribution

The sign and its controller shall be designed for use on the following:

Power line Voltage - 120/240 VAC Nominal, single-phase power, 40 amperes per leg - the system shall operate within a voltage range of 95VAC to 135VAC.

Frequency – 60Hz +/- 3Hz

Under normal operation, the drop in voltage between no load and full load of the sign and its controller shall not exceed 10% of the nominal voltage. The system shall be protected by transient suppression devices including, MOVs, RIS and spark gap arrestor.

The system shall report any power failures to the main controller when system power returns.

Power protection shall be provided by a thermal magnetic circuit breaker associated with a 5 mA ground fault circuit interruption (GFI) device. A GFI device shall protect all service outlets.

The sign shall have a 40 A two-pole (common trip) main, 120/240 VAC, single phase, four wire load center with 20 circuit capability. Each circuit in the sign shall be powered from a separate circuit breaker. The power cables shall be as required by the NEC for acceptable voltage drop to supply AC power to the sign. The power required for sign operation shall not exceed 7000 watts for the sign housing to include fans, heaters, sign controller, communication equipment and all pixels illuminated at 100% brightness.

Two conduits shall connect the controller cabinet with the walk-in sign display; one for power and one for communications, unless communications between the two is by optical fiber.

The TMDMS manufacturer shall provide two earth ground lugs that are electrically bonded to the TMDMS housing. Lugs shall be installed near the lower left and lower right corners of the TMDMS housing's rear wall. The TMDMS installation contractor shall provide the balance of materials and services needed to properly earth ground the TMDMS to all four ground rods at each site.

The sign and shall be equipped with surge suppression circuitry for AC power conductors and external RS-232 data lines to protect them from electrical spikes and transients. The presence of power transients or electromagnetic fields, including those created by any components of the system, shall have no deleterious effect on the performance of the system.

The system shall not conduct or radiate signals which will adversely affect other electrical or electronic equipment including, but not limited to, other control systems, data processing equipment, audio, radio and industrial equipment.

Surge Protection

The system power shall be protected by one or two (2) stages of transient voltage suppression devices including MOVs and spark gap arrestor. Tripping of each stage (or both if tripped simultaneously) of the surge protection shall cause the sign controller to report the error condition to the DMS remote monitoring software.

DMS Power Supplies

TMDMS shall be provided with redundant DC power supplies. These shall be rated for a minimum of 50% spare capacity over that required to light every pixel on a line to full intensity, and shall automatically pick up the load if one unit fails, while sending an error indication to the TMDMS controller. All electrical components operating on more than 24 V shall be UL listed.

The power supplies shall be continuously monitored for proper operation by the sign controller. If the voltage drops below its nominal operating value, an error message shall be generated and transmitted to the DMS Client software, or laptop computer on site at local control box location automatically.

Display Modules

Display modules consisting of nominal 18" high characters shall be assembled to form the specified full matrix message configuration. These circuit boards shall be designed and constructed to allow a single service technician to troubleshoot, isolate, remove, and replace these boards with minimal impact to the overall operation of the sign.

All LED boards shall be fully interchangeable and not require any address switches or adjustment when interchanged or placed in service. Module addressing, where required, shall be accomplished in the connector. The DMS Manufacturer shall document all LED testing for color so that replacement LED boards shall match existing amber color.

Pixel status and diagnostics shall include string failure, pixel failure and failed pixel location (line, module, row and column numbers). Replacement of a complete display module shall be possible using only simple hand tools. Interconnection of modules shall be through connectors only. All connectors shall be keyed to preclude improper hookups.

The display modules shall be approximately $\frac{3}{4}$ " behind the lens panel assembly.

LED and Pixel Characteristics

Each pixel shall be a maximum of 1-3/8" in diameter. The LEDs in each pixel shall be clustered to maximize long range visibility. The average light intensity of the LEDs in each pixel shall be 3 candela minimum. All pixels in the sign shall have equal color and on-axis intensity. All pixels shall have a minimum on-axis intensity of 40 candela @ 20 mA forward current, with an overbright capability of 60 cd.

All pixels in all signs in this project, including the spare parts, shall have equal color and on-axis intensity. The pixel strings shall be powered from a regulated DC power source and the LED current shall be maintained at the LED manufacturer's specified nominal operating current to maximize life of the pixel. The failure of an LED in one string within a pixel shall not affect the operation of any other string or pixel. Pixel power drawn from the DC supplies shall not exceed 1.5 W per pixel, including the driving circuitry.

The LEDs shall be individually mounted directly to a printed circuit board and shall be easily replaceable and individually removable using conventional electronics repair methods.

The LEDs shall be protected from the outside environmental conditions, including, but not limited to, moisture, snow, ice, wind, dust, dirt, and UV rays.

TMDMS pixels shall be constructed with discrete LEDs manufactured by the Toshiba Corporation or Agilent Technologies (formerly known as Hewlett-Packard). Substitutes will not be accepted. Discrete LEDs shall conform to the following specifications:

- LED's shall be non-tinted, non-diffused, high-intensity, solid-state lamps that utilize AlInGaP semiconductor technology.
- LED lenses shall be fabricated from UV light resistant epoxy.
- The LED lens diameter shall be 0.2 inches (5 mm).
- LEDs shall emit amber (yellow-orange) light that has a peak wavelength of 590 ± 4 nm.
- LEDs shall be obtained from a one-bin luminous intensity sort.
- LEDs shall have a minimum half-power viewing angle of 15° .
- LED package style shall be through-hole flush-mount; LED's with standoffs and surface mount LED's will not be accepted.
- All LED's used in all TMDMS provided for this contract shall be from the same manufacturer and have the same part number.

The sign shall have a minimum intensity of 9,200 cd/m².

All LED display modules, as well as the LED pixel boards and driver circuit boards, shall be identical and interchangeable throughout the TMDMS. LED arrays shall not share a circuit board with the display drive electronics but shall be easily connected and disconnected from the driver board using plugs, sockets, and simple hand tools while excluding soldering operations.

The state of the LEDs (full on, or off) in each pixel of the sign shall be read by the sign controller when it is polled or when a message is downloaded from the DMS Client software, existing ATMS software, or laptop computer on site at local control box location, and shall allow the DMS Client software or laptop computer on site at local control box location show the actual message that is visibly displayed on the sign in a WYSIWYG format, including any full-out or fully stuck on pixels.

All printed circuit boards, except the LED circuit board, shall be conformal coated. The LED board shall be conformal coated except at the pixels. All printed circuit boards, including the LED circuit board, shall have a solder mask and a component identifier silk screen. The display modules shall be assembled in a full matrix configuration.

LED intensity shall be automatically adjusted to match ambient lighting conditions. This automatic control shall be provided with an override operated through the TMDMS controller communications channel.

Front face panels shall provide a high-contrast background for the TMDMS display matrix. The aluminum portion of each panel shall be painted black and shall contain a circular or square opening for each LED pixel. Openings shall be large enough to not block any portion of the LED-viewing angle.

The front panel shall be heated to prevent fogging and condensation. A minimum eight watt-per-foot, self-regulating, heat tape shall be provided along the bottom of the message area, between the glazing and the display modules. The TMDMS controller shall control the heat tape. All heat tape terminal blocks shall be covered for safety.

Structural Requirements

Walk-in TMDMS Display Cabinet

The TMDMS display cabinet shall allow replacement of any display component from the walkway within the sign, excluding the sign display cover. The removal of any display module shall not reduce the structural integrity of the walk-in cabinet.

The maximum weight of the TMDMS display and walk-in enclosure shall not exceed 4000 lb and shall conform to the structural loading capabilities of the sign structure. Dimensions of the TMDMS walk-in enclosure shall not exceed thirty one feet long by nine feet high by three feet wide (nominal dimensions).

The walk-in housing dimensions and total weight shall be as shown in this specification or in the plans. The walk-in housing shall protect all internal components from rain, ice, dust, and corrosion in accordance with NEMA enclosure Type 3R standards as described in NEMA Standards Publication 2501997, Enclosures for Electrical Equipment (1000 Volts Maximum).

The sign housing shall be engineered and P.E. certified to 2001 AASHTO and NCHRP Report 411 specifications for AASHTO basic wind speeds. The sign housing shall also be engineered and P.E. certified to withstand group loading combinations as outlined in 2001 AASHTO including: sign weight, repair personnel and equipment, ice and wind loads, and shall also meet strength requirements for truck-induced gusts as specified in NCHRP Report 412. The sign housing shall be engineered to withstand snow loading (40 PSF) for applicable geographical regions.

The internal structural members shall be extruded aluminum and shall accommodate both display module mounting and air distribution. They shall retain the display modules in a manner to facilitate easy and rapid removal of each display module without disturbing adjacent display modules.

The external fascia panels shall be extruded aluminum and shall be designed to keep heat conduction to a minimum between the exterior surfaces and the interior components. They shall incorporate provisions for retaining and sealing the modular lens panels and have a closed cell resilient gasket. They shall be finished with a matte black, KYNAR 500, or approved equal, and be removable from within the main sign housing. The external fascia perimeter panels shall be a minimum of 12" wide. The external fascia panels shall be thermally isolated from the rest of the sign housing. There shall be a minimum amount of metal contact between the external fascia panels and the rest of the sign housing.

The lens panel assembly shall be modular in design, interchangeable without misalignment of the lens panel and the LED pixels and removable from within the main sign housing.

The lens panel aluminum mask shall be 0.040" minimum thickness and panel interiors contain 0.236-inch-polycarbonate sheeting. It shall be perforated to provide an aperture for each pixel on the display modules. Each aperture shall be as small as possible, without blocking the LED light output at the required viewing angle.

The lens panel clear glazing shall be 90% UV opaque, non-breakable, polycarbonate GE LEXAN XL, 1/8" minimum thickness and clear in color shall be laminated to the inside surface of the lens panel aluminum mask using an acrylic foam tape joining system, 3M Scotch VHB, or approved equal, to form the lens panel assembly.

The face shall be finished with a matte black, factory applied PVDF resin. All other exterior and all interior surfaces shall be a natural aluminum mill finish. No painted surfaces will be allowed.

Inside the sign housing, all 120 VAC service lines shall be independently protected by a thermal magnetic circuit breaker at the housing entry point. All 120 VAC wiring shall be located in conduit, pull boxes, raceways or control cabinets. No 120 VAC wiring shall be exposed to the inside or outside of the sign housing. The sign housing shall not be considered as a raceway or control cabinet.

The bottom panel of the housing shall have a minimum of four drain holes, with replaceable drain filter plug inserts.

A three-point lockable aluminum access door shall be provided at the end of the housing as shown in the plans to enable easy access to the walk-in housing. This access door shall be 6'-8" X 2'-0" minimum. The door shall have a handle-operated locking mechanism, closed cell neoprene gasket and a stainless steel hinge. The locking mechanism shall be a heavy-duty, industrial-strength, three-point, dead bolt, center-case lock with a zinc finish and Corbin #2 lock. There shall be a handle on both the inside and the outside of the door. Handles shall be heavy-duty, industrial-strength with a zinc finish on the inside handle and a chrome plated finish on the outside handle. The outside handle shall be pad-lockable. Included in the door assembly shall be a device to hold the door open at 90 degrees.

For moving and installation purposes, multiple steel lifting eyebolts shall be attached to the top of the TMDMS housing. Eyebolts shall attach directly to the TMDMS housing structural frame and shall be installed at the TMDMS factory. All eyebolt-mounting points shall be sealed to prevent water from entering the TMDMS housing. Lifting eyebolts, as well as the housing frame, shall be designed so that the TMDMS can be shipped and handled without damage or undue stress being applied to the housing prior to or during TMDMS installation on its support structure.

The sign housing shall have a continuous 18-inch wide walkway extending the full length of the sign. The walkway shall be made of 1/8-inch, diamond tread, 6061-T6 or 3003-H22 aluminum. All edges of the walkway grating shall be finished to eliminate sharp edges or protrusions. The walkway shall be capable of supporting a total load of 1000 lb. within any 10-ft section of the walkway.

The sign housing shall be a minimum of 30 inches wide to allow adequate room inside the sign housing for maintenance personnel. There shall be 18 inches of clear area between all equipment along the entire length of the sign housing from the 18-inch walkway, and upwards 6 feet.

The sign shall be designed and constructed so as to present a clean and neat appearance. Poor quality work shall be cause for rejection of the sign. The equipment within the sign housing shall be protected from moisture, dust, dirt and corrosion. The sign shall be constructed of aluminum alloy 3003-H14, 5052-H32, or an approved equal which shall not be less than 1/8 inch thick. Framing structural members shall be made of aluminum alloy 6061-T6, 6063-T5, or approved equal.

All welding shall be by an inert gas process in accordance with the American Welding Society (AWS) Standards, ANSI/AWS D1.2-97. The LED TMDMS manufacturer's welders and welding procedures shall be certified by an ANSI/AWS Certified Welding Inspector to the 1997 ANSI/AWS D1.2-97 Structural Welding Code for Aluminum.

The sign enclosures shall be capable of withstanding wind loadings of 120 mph without permanent deformation.

The performance of the signs shall not be impaired due to continuous vibration caused by wind, traffic or other factors. This includes the visibility and legibility of the display.

The ventilation system shall be a positive-pressure, filtered, forced-air system which cools both the display modules and the sign housing interior. The sign housing shall have at least two exhaust ports. Each exhaust port shall be filtered and protected by an aluminum hood assembly.

The ventilation system shall have a minimum of two fans. Air shall be drawn into the sign housing through hoods near the top of the housing, and then filtered before reaching the fan units. There shall be one aluminum hood assembly and one inlet filter for each fan.

The filters shall be 1" thick, permanent, reusable, filters. These filters shall be easily removable from within the sign housing without the use of tools. Each sign shall include a complete set of replacement filters.

All duct work that impedes access to any sign components shall be easily removable, without tools, for servicing of these components. Ductwork shall be 0.040 in minimum thickness aluminum and shall be designed for minimal pressure drops throughout the system.

Multiple temperature sensors shall activate the ventilation system. There shall be a minimum of one sensor located near the middle of the sign, at the top of the display area. There shall be an additional temperature sensor located to accurately measure the ambient temperature outside the sign housing. The temperature sensors shall have an accuracy of +/- 3°F. or better and a range from -40 to +155°F or greater.

The temperatures from the sensors shall be continuously measured and monitored by the sign controller. A temperature reading greater than a user selectable critical temperature shall cause the sign to go to blank and the TMDMS controller shall report this error message to the central controller.

The ventilation system shall be equipped with a manual override timer to provide ventilation for service personnel. The timer will have a maximum on time of 1 hour.

The LED modules and electronic equipment shall be protected by a fail-safe, back-up fan control system in the event of an electronic fan control failure or shutdown of the sign controller.

The sign housing shall be furnished with a minimum of four florescent lights equipped with cold weather ballasts. The lamps shall be spaced evenly above the walkway and shall be fitted with protective guards. The light switch shall be located near the door and shall include a timer to turn off the lights after a specified time period.

The sign housing shall be equipped with two 15 amp 120V (+/- 10%) grounded GFCI protected duplex electrical receptacles to accommodate inspection and maintenance requirements. One of these receptacles shall be located at each end of the sign housing. Additionally, the sign housing shall be equipped with sufficient and readily available power source in order to accommodate a fiber optic modem and all other necessary communications equipment required to transmit data from the sign to nearest controller cabinet with fiber optic communications for the backbone. The sign housing and display panel shall be designed to minimize any visible internal light from the outside of the DMS when the internal DMS lighting is on during nighttime maintenance activities.

An effective, field-proven defogging and anti-condensation system shall be incorporated into the overall functionality of the sign. The face shall be heated to prevent fogging, frost and condensation.

A humidity sensor shall be provided and monitored by the sign controller from zero percent to 100 percent relative humidity in 1 percent or fewer increments. The sensor shall operate and survive from 0 percent to 100 percent relative humidity. The sensor shall have an accuracy that is better than +/- five percent relative humidity.

The sign controller shall read the internal temperature sensors, external ambient temperature sensor and the humidity sensor. The sign controller shall use these readings in an algorithm that turns on the heater and/or the fans at the appropriate times to reduce both frost on the face of the sign and condensation on the display modules and other electronic circuitry.

Baseboard heaters shall be included in the sign housing. These heaters shall be capable of remote start up in anticipation of winter field service.

The interior of the sign shall include a fold-down shelf for a laptop computer.

Sign Controller

The sign controller shall include a minimum of two (2) serial communications I/O ports; one (1) RS-232, one (1) RS-485 and one (1) Ethernet port.

The sign controller may either be installed inside the proposed equipment cabinet external from the walk-in DMS enclosure or inside of the walk-in DMS enclosure.

If the controller is installed internally, a local control panel shall be furnished and installed inside the proposed equipment cabinet to allow direct communication with the cellular modem and sign controller and to provide the capability of resetting the sign controller from the ground.

The sign controller shall be programmed to receive NTCIP-compliant sign control commands from the central controller (DMS client software) or laptop computer, transmit NTCIP-compliant responses as requested to the central controller (DMS client software or existing ATMS) or laptop computer, monitor sign and message status and control sign operation and message displays.

The controller will have power-up and auto-restart capabilities with a programmable default message (including a blank message) when recovering from a power off condition.

The sign controller shall be programmed to receive sign control commands from the master controller, transmit responses as requested to the master controller and control sign operation and message displays.

The sign controller shall be able to receive and send messages and data via IEEE 802.3 (Ethernet), fiber optic modem, and cellular CDPD, CDMA or GSM/GPRS. Transmission speed shall be a minimum of 9.6 kbps. A test pattern shall be provided in the DMS controller.

The sign controller shall be designed for fail-safe prevention of improper information display in the case of a system malfunction. Failure of any sign shall not affect operation of any other sign in the system. The sign controller shall consist, but not be limited to, the following:

Local control panel status indicators, including:

1. Power on/off
2. Communication status with the electronics in the walk-in housing
3. Sign display power supply status
4. Controller address
5. Power supply module
6. Central processor module
7. Input/output circuits

The sign controller shall have power-up and auto-restart capabilities with automatic sign blanking when recovering from a power-off condition. A watch-dog circuit shall be utilized to provide automatic shut down of the sign in the event of power or sign controller failure.

Connections from the controller shall be accomplished via industry standard, keyed type connectors with a retaining mechanism.

The sign controller shall communicate with the display modules via the system interface circuit consisting of data bus drivers and line address decoders. Communication and control lines between the sign controller and the system interface circuits shall be surge protected.

The sign controller shall be controlled from the DMS client software, existing ATMS software or the laptop computer, which shall specify the appropriate display. The sign controller and its software shall perform the following functions:

1. Display a message, including:
2. Static messages
3. Flashing messages
4. Alternating messages
5. Double brush stroke messages for maximum legibility
6. Full-Matrix type displays

It shall be possible to separately vary the flashing and alternating frequency. The flashing frequency shall vary between one-half and five seconds in one tenth second increments. The alternating frequency shall vary between one-half and five seconds in one-tenth second increments.

It shall be possible to flash any character or set of characters in a static or alternating message. In the case of alternating message, the flashing period shall be a submultiple of the alternating on time it is associated with.

The sign controller shall report errors and failures, including, but not limited to:

- Data transmission error
- Receipt of invalid data
- Communications failure recovery
- AC power failure
- Power recovery
- Pixel status
- Fan status
- Temperature status
- Power Supply status

The sign controller shall issue an SNMP trap under the following conditions:

- Power Supply Failure – when the AC power supply at a DMS has failed.
- Power Restoration - whenever it detects restoration of AC power at the sign controller.
- Temperature Limit – Whenever internal DMS temperature initially exceeds a programmed safety limit. A new trap will not be issued until the temperature once again falls below the safety limit and then exceeds it.
- Door Open – Whenever the door of the DMS housing or the door of the controller cabinet is opened.

Message and status monitoring:

The sign controller shall transmit a return message to the DMS client software and existing ATMS software whenever it receives a valid request for status. The return message shall contain the following:

- Address of the sign controller
- Actual message that is visibly displayed on the sign on an individual pixel basis
- Current sign illumination level
- Error and failure reports
- Temperature readings
- Power supply operational status
- Origin of display message transmission (laptop, manual, central, etc)
- Beacon status (for possible future enhancement)
- Uninterruptible power supply status

The sign controller shall blank any message displayed in the event of power or sign controller failure.

The sign shall normally display single stroke (5 X 7) characters, compressed (4 X 7), expanded (6 X 7) or double-stroke (7 X 7) character fonts. Each font shall be fully customizable, and modifications to a font may be downloaded to the sign controller from the DMS client software and existing ATMS software or laptop computer at any time without any software or hardware modifications. The sign shall be capable of displaying a different font and character spacing on each line.

The sign controller shall monitor the photocell circuits in the sign and convert the measured light intensity into the desired pixel brightness. The photo circuit readings shall be correlated with a brightness table in the sign controller. The brightness table shall have a minimum of 255 brightness levels. Automatic adjustment of the LED driving waveform duty cycle shall occur in small enough increments so that brightness of the sign changes smoothly, with no perceivable brightness change between adjacent levels. The brightness levels shall be adjustable from the DMS client software.

The operational status of each pixel in the sign shall be automatically tested once a day and tested when a pixel test is requested from the DMS client software and existing ATMS software or laptop computer. A list of defective pixels shall then be transmitted to the DMS client software and existing ATMS software or laptop computer and logged into the log file, listing pixel status, module number, column number and pixel number. This pixel status test shall distinguish the difference between full out and fully stuck on pixels. This test shall not affect the displayed message for more than 0.5 seconds.

When the sign controller is polled and when a message is downloaded from the DMS client software and existing ATMS software or laptop computer, each pixel in the sign shall be read and its current state for the current displayed message, and shall be returned to the DMS client software and existing ATMS software to show either on a laptop computer or the controller itself, the actual message that is visibly displayed on the sign on an individual pixel basis in a WYSIWYG format.

The operational status of the fans shall have the ability to be automatically tested once a day and tested on command from the DMS client software and existing ATMS software or laptop computer. Any failure shall cause an error message to be sent to the DMS client software, existing ATMS software or laptop computer when the sign controller is polled by the DMS client software, existing ATMS software or laptop computer.

Temperature sensors shall be continuously measured and monitored by the sign controller. A temperature greater than a user selectable critical temperature shall cause the sign message to go to blank and an error message shall be sent to the DMS client software and existing ATMS software or laptop computer when the sign controller is polled by the DMS client software, existing ATMS software or laptop computer. This user selectable critical temperature shall be capable of being changed by the DMS client software, existing ATMS software (if available) or laptop computer. The DMS client software and existing ATMS software (if available) and laptop computers shall have the ability to read all temperature measurements from the sign controller. When the sign reaches an internal temperature of 130° F, it shall cut the LED intensity to half of its normal brightness to keep the sign from reaching the critical temperature and shutting down.

When the display time of a message has expired, the controller shall set the sign to neutral. A sign is considered to be neutral when the sign is blank.

In the event of a communications failure with the DMS client software or existing ATMS software, the sign controller shall set the sign to neutral after a user-defined number of minutes (1 to 60) unless communications have been restored within this period. This function shall apply only when the sign controller is in the Master Control mode.

All LED module power supplies shall be continuously monitored by the sign controller. A low voltage reading shall cause an error message to be sent to the DMS client software, existing ATMS software or laptop computer when the sign controller is polled by the DMS client software, existing ATMS software or laptop computer.

There shall be no perceivable flicker or ghosting of the pixels during sign erasure and writing periods.

Message additions, deletions and changes in the sign controller shall be made from either the DMS client software, existing ATMS software or the laptop computer.

In the event of an AC power loss, all non-volatile memory shall be retained for a minimum of 30 days. AC power failure shall cause the sign controller to notify the DMS client software and existing ATMS software and display an error message on the DMS client software and existing ATMS software CRT. For cellular operation, the sign controller shall immediately access the modem to notify the DMS client software and existing ATMS of the AC power failure.

Failure of any sign shall not affect the operation of any other sign in the system.

The sign controller internal time clock shall ensure that a message is taken down at the correct time, even in the event of communications loss.

The sign controller shall maintain its internal clock during power outages of less than 4 hours and display the proper message when power is restored.

The sign controller shall be able to put a self-updating time, temperature and/or date display on the sign.

Flashing Beacons

The TMDMS shall be equipped with two 12" diameter yellow flashing beacons that can be programmed to operate through the sign controller and remote access software. The beacons shall be located at the top of the sign on each end and shall flash alternately. The beacons shall be equipped with tunnel visors to maximize visibility.

Construction Requirements

Sign construction and installation shall be coordinated with the Engineer. TMDMS shall be transported and erected in a manner recommended by the manufacturer, providing a minimum clearance of 17.5 ft. above the pavement and a horizontal appearance to motorists once fully installed as shown on the Plans.

Technical Assistance

The DMS manufacturer's technical representative shall provide on-site technical assistance in following areas:

1. Sign to structure installation
2. Controller cabinet installation
3. Sign housing to ground control cabinet cable termination
4. Initial sign turn on and stand-alone test

The initial powering up of the sign(s) shall not be executed without the permission of the DMS manufacturer's technical representative.

Any special or proprietary cables shall be provided by the DMS Manufacturer to the installation contractor.

Testing

The Contractor shall certify in writing to the Engineer that each TMDMS installation is fully compliant with the NTCIP standards named in the Materials section of this Special Provision. All mandatory objects and the optional objects mentioned above under Materials shall be certified for each sign and provided to the Department. In addition, following installation, the Contractor shall perform a site test of each sign, demonstrating the functionality and performance required in the Materials section of this Special Provision to the Engineer. The Contractor shall give the Engineer a minimum of two weeks' notice before performing the site test.

Testing Requirements

The Department has the right to require performance testing of materials and equipment not previously tested and approved. If technical data are not considered adequate for approval, samples may be requested for testing.

The DMS Manufacturer shall provide five (5) copies of all factory acceptance tests, stand-alone, system test and 90 day test procedures and data forms for the Department's approval at least 60 calendar days prior to the day the tests are to begin. The test procedures shall include the sequence in which the tests will be conducted. The test procedures shall have the Department's approval prior to submission of equipment for tests.

The DMS Manufacturer shall perform the factory acceptance tests, stand-alone and system test. The DMS Manufacturer shall furnish data forms containing all of the data taken, as well as quantitative results for all tests. The data forms shall be signed by an authorized representative (company official) of the equipment manufacturer. At least one (1) copy of the data forms shall be sent to the Department within 14 days of the test's conclusion.

The Department reserves the right to have a representative to witness all tests. The results of each test shall be compared with the requirements specified herein. Failure to conform to the requirements of any test shall be counted as a defect, and the equipment shall be subject to rejection by the Department. Rejected equipment may be offered again for a retest, provided that all non-compliances have been corrected and retested by the DMS Manufacturer and evidence thereof submitted to the Department.

Each of the tests on all or one type of equipment must be completed within five (5) working days of each other. Any delays in performing all these tests may result in the DMS Manufacturer paying the additional costs of providing the Department's representatives for the additional testing time.

Final inspection and acceptance of equipment shall be made after installation at the designated location as shown on the installation plans.

The DMS Manufacturer shall be responsible for providing the test fixtures and test instruments for all the tests.

The Stand-Alone and System Tests are separate tests, however, they may be performed by the DMS Manufacturer during the same visit.

Consequences of Test Failures: If any unit fails to pass its test, the unit shall be corrected or another unit substituted in its place and the test successfully repeated.

If a unit has been modified as a result of a test failure, a report shall be prepared and delivered to the Department prior to shipment of the unit. The report shall describe the nature of the failure and the corrective action taken.

If a failure pattern develops, the Department may direct that design and construction modifications be made to all units at no additional cost or extension of the contract period.

Factory Acceptance Tests

The TMDMS Manufacturer shall be responsible for conducting demonstration tests on all units at a TMDMS's Manufacturer's facility. These tests shall be performed on each unit supplied. The Department shall be notified a minimum of 30 calendar days before the start of tests. At a minimum, all equipment shall have passed the following individual tests:

- Examination of Product: Each TMDMS unit shall be examined carefully to verify that the materials, design, construction, markings and quality of work comply with the requirements of these project specifications.
- Continuity Tests: The wiring shall be checked to determine conformance with the requirements of the appropriate paragraphs in these project specifications.
- Operational Test: Each TMDMS unit shall be operated long enough to permit equipment temperature stabilization, and to check and record an adequate number of performance characteristics to ensure compliance with the requirements of these project specifications.
- NTCIP Test: A NTCIP test shall be performed at the TMDMS Manufacturer's facility. The Department may elect to perform and/or witness this test. The specifics of this factory acceptance test shall be proposed by the TMDMS Manufacturer to the Department for approval.
- Stand-Alone Tests: The TMDMS Manufacturer shall conduct an approved stand-alone test of the equipment installation at the field site. The test shall, as a minimum, exercise all stand-alone (non-network) functional operations of the field equipment with all of the equipment installed as per the contract documents.

Approved data forms shall be completed and turned over to the Department as the basis for review and rejection or acceptance. At least 30 working days' notice shall be given prior to all tests to permit the Department to observe each test.

System Tests

After the installation of the TMDMS system is completed and the successful completion of the System Test, the TMDMS system shall be subjected to one continuous 72-hour full operating test prior to a 90 day test period. The test shall consist primarily of exercising all control, monitor and communications functions of the field equipment by the central management software.

The 90 days test period shall commence on the first day after the successful completion of the approved 72-hour continuous full operating test period.

During the 90 days test period, downtime, due to mechanical, electrical and/or other malfunctions, shall not exceed five (5) working days. The Engineer may extend the 90 days test period by a number of days equal to the downtime in excess of five (5) working days.

The Engineer will furnish the TMDMS vendor with a letter of approval stating the first day of the 90 days test period.

Maintenance Services

The installation contractor shall provide complete maintenance services for the entire TMDMS assembly until the final acceptance. All labor, travel, replacement parts and associated costs necessary to maintain the TMDMS assembly shall be included in the contract at no additional cost to the Department.

The installation contractor shall correct all failures in the TMDMS assembly within 48 hours of notification from the Department until final acceptance. A failure of a sign installation shall be defined as the inability of the sign to function as per these specifications. A failure shall also be defined as the sign becoming unreadable or illegible as determined by the Department.

Final System Acceptance

Final system acceptance will be defined as when all work and materials provided have been furnished and completely installed by the TMDMS Manufacturer, and all parts of the work have been approved and accepted by the Department and the Dynamic Message Sign System has been operated continuously and successfully for 90 calendar days with no more than 5 calendar days downtime due to mechanical, electrical and/or other malfunctions, as specified herein.

The warranty period, as specified in herein, will begin upon final acceptance.

Operator's Manuals

A manual containing a general description and detailed operating and installation instructions shall be provided for each different type or model of equipment. One (1) copy of the manual shall be provided and kept in the sign cabinet. An additional ten (10) copies of the manual shall be submitted to the Department for each model of equipment. An additional copy of the manual shall be submitted to the Department on CD for each model of equipment. The manual shall include the following information:

1. A general description of the equipment including all information necessary to describe the basic use or function of the system components. This shall include a general block diagram presentation of the equipment. Where auxiliary equipment is required, tabular charts shall be included, listing such equipment. These charts shall include the nomenclature physical and electrical characteristics and functions of the auxiliary equipment unless such information is contained elsewhere in an associated manual. In the latter case, a reference shall be made to the location of the information pertaining to the auxiliary equipment.
2. The theory of operation of the system components in a clear, concise manner supported by simplified schematics, logic, data flow diagrams, one-function diagrams, etc. Timing and waveform diagrams and voltage levels shall be shown as required. A logical development shall be used starting with a system block level and proceeding to a circuit analysis. Circuit analysis shall be detailed whenever circuits are not normally found in standard textbooks. The application of new theoretical concepts shall be fully described. Where the design allows operation in a number of different modes, an operational description of each mode shall be included.
3. In simple, clear language, the routine of operation, from necessary preparations for placing the equipment into operation, to securing the equipment after operation. This section shall contain appropriate illustrations, with the sequence of operations presented in tabular form wherever feasible. This section shall also contain a list of applicable test instruments, aids and tools required in the performance of necessary measurements and technique of each system component. In addition, set-up test, and calibration procedures shall be described.

4. Schematic diagrams shall be complete and accurate as required to supplement the text material and to allow the books to be a self-contained technical information source. Maximum size of these diagrams should be limited to allow their use in close proximity of the equipment, in the classroom, etc., part reference symbols, test voltages, waveforms, and other aids to understanding of the circuit's function shall be included on the diagrams. Test voltages, waveforms, and other aids to understanding of the circuit's function may be shown on both the simplified schematics and other drawings (as required in the above sections) on theory of operation, or maintenance or on the schematic diagrams required for this section. The overall scope of information shall not be less, however, than that stated for the schematic diagrams.

Software Manuals

The TMDMS Manufacturer shall provide manuals and data for the computer software system and components thereof. One (1) copy of the manual shall be provided and kept in the sign cabinet. Ten (10) additional copies of the manual shall be submitted to the Department for each version of software. One (1) copy of the manual shall be provided on CD. As software is upgraded, updated versions of the manual shall be provided. This submittal shall include the following:

1. Software user's manuals shall be supplied. Include instructions for performing a backup of all software and message libraries.
2. Two (2) copies of source programs, for master and sign controller software, shall be provided on CD-ROM. The Department shall have the right to duplicate the sign controller software as needed for use in controlling signs under its' jurisdiction.
3. The TMDMS Manufacturer's NTCIP MIB (Management Information Base) shall be provided to the Department.
4. Warranty information.
5. Preventive maintenance and maintenance information.

Maintenance Manuals

A manual containing a general description and detailed maintenance instructions shall be provided for each different type or model of equipment. One (1) copy of the manual shall be provided and kept in the sign cabinet. An additional ten (10) copies of the manual shall be submitted to the Department for each model of equipment. One (1) copy of the manual shall be provided on CD. The manual shall include the following information:

1. The manufacturer's recommended procedures and checks necessary for preventive maintenance. This shall be specified for pre-operation, weekly, monthly, quarterly, semi-annual, annual, and "as required" checks as necessary to assure reliable equipment operation. Specifications, including tolerances, for all electrical, mechanical, and other applicable measurement, adjustments, or both, shall be listed. The TMDMS Manufacturer shall provide the Department with a sample preventive maintenance schedule.
2. Data necessary for isolation and repair of failures or malfunctions, assuming the maintenance technicians to be capable of analytical reasoning using the information provided above. Accuracies, limits, and tolerances for all electrical, physical or other applicable measurements shall be described. General instructions shall be included for disassembly, overhaul, and reassembly, including shop specifications or performance requirements.

3. Detailed instructions shall be given only where failure to follow special procedures would result in damage to the equipment, improper operation, or danger to operating or maintenance personnel.
4. The parts list shall contain all information required to describe the characteristics of the individual parts, as required for identification. It shall include a list of all equipment within a group and list of all assemblies, subassemblies, and replacement parts of units. The tabular arrangement shall be in alphanumeric order of the schematic reference symbols and shall give the associated description, manufacturer's name, and part number. A table of contents or some other convenient means, e.g., appropriate grouping, shall be provided for the purpose of identifying major components, assemblies, etc.

As-Built Documentation

The TMDMS Manufacturer shall provide to the Department the following documentation of the complete installed equipment prior to final payment. Sufficient documentation shall be provided to reflect "as-built" conditions and to facilitate operation, maintenance, modification, and expansion of the system or any of its individual components. Manufacturer supplied documentation which covers the intent of this requirement may be used, subject to the approval of the Department:

The TMDMS Manufacturer shall prepare and submit the following detailed drawings for each sign:

- TMDMS character set as detailed herein,
- All non-catalog or custom-made components,
- Sign housing assembly details, including the component location details and a layout of all the display elements, complete with dimensions,
- Sign housing structural details, including member details, support mechanism details required for installation of the TMDMS onto the sign truss, welding details, and miscellaneous hardware details; complete with dimensions and sizes,
- Sign mounting bracket structural details, including miscellaneous members and hardware required to attach the TMDMS to the sign truss; complete with dimensions and sizes, and
- Wiring schematics.

Final documentation shall reflect all field changes and software modifications and shall be provided before final payment is made.

The TMDMS Manufacturer shall coordinate and take the lead on this effort with the installation contractor.

This documentation shall include drawings of conduit layouts, cable diagrams, wiring lists, cabinet layouts, wiring diagrams and schematics for all elements of the communications system. This shall also include detailed drawings identifying by cable type, color code and function, the routing of all conductors (pairs) in the communications system.

Four (4) copies of each As-Built installation shall be delivered to the Department with one complete copy to be placed in the equipment cabinet at each TMDMS location. Drawings left in the TMDMS shall be attached to the door with stainless steel fasteners and protected from weather with a waterproof enclosure.

Warranty

The Contractor shall warranty all materials and workmanship including labor for a period of two years after the completion and acceptance of the installation, unless other warranty requirements prevail. Any parts or equipment found to be defective and/or determined to be a failure in design, materials and workmanship during the warranty period shall be replaced free of charge. The warranty period shall begin when the Contractor completes all construction obligations related to this item and when the components for this item have been accepted, which shall be documented as the final completion date in the construction status report.

This warranty shall include repair and/or replacement of all failed components via a factory authorized depot repair service. All items sent to the depot for repair shall be returned within two weeks of the date of receipt at the facility. The depot location shall be in the United States. Repairs shall not require more than two weeks from date of receipt and the provider of the warranty shall be responsible for all return shipping costs. The depot maintainer designated for each component shall be authorized by the original manufacturer to supply this service. A warranty certificate shall be supplied for each component from the designated depot repair site indicating the start and end dates of the warranty.

The certificate shall be supplied at the conclusion of the system acceptance test and shall be for a minimum of two years after that point. The certificate shall name the Department as the recipient of the service. Company contact information and warranty dates should be clearly shown on the warranty certificate. The Department shall have the right to transfer this service to other private parties who may be contracted to perform overall maintenance of the facility.

Method of Measurement

Truss mounted changeable message sign shall be measured for payment each per TMTMDMS complete, in place, tested to assure all functionality and performance required above, and accepted by the Engineer.

Basis of Payment: Payment will be made at the unit price for each TRUSS MOUNTED LED DYNAMIC MESSAGE SIGN which shall include all equipment, material, documentation, testing and labor detailed in the contract documents for this bid item.

SUPPORT EQUIPMENT AND MAINTENANCE

The Contractor shall furnish the following equipment (MATERIAL ONLY) and deliver it to the Department:

There are no support requirements for this pay item.

- Axis T8414 Installation Display (MATERIAL ONLY) – Qty. 1

The installation display tool shall conform to the following specifications:

Display

Color LCD Field: 3.5 inches, Automatic Aspect Ratio Adjustment

Resolutions:	320x240
<u>Video</u>	
Image settings:	Autosensing, Brightness, Color, Level, Contrast
<u>Network</u>	
Network:	IP Setting Static IP address, DHCP
<u>General</u>	
Casing:	ABS plastic, Color Dark Blue
Memory:	128 MB RAM (16 MB available for snapshots), Local Storage: MicroSD card up to 32 GB (card not included)
Installation aids:	Focus assistant, Video clip recording and playback, Snapshot, File size max. 24 MB, H.264, MPEG, MAC address detection
Measurements:	Bandwidth calculation, Cable test, PoE measurement
Power:	12 V DC
Battery:	Canon BP-915 (7.4 V 2000 mAh), 80% capacity after 300 charge cycles, Charge time 3.5 hours, Operation time: 3 hours with PoE off, 2 hours with PoE on
Connectors:	BNC Video in, RJ-45 10BASE-T/100BASE-TX PoE
IEEE	802.3af class, CAT-5, USB 2.0, PoE
Operating conditions:	0 – 50 °C (32 –122 °F), Humidity 20 - 80% RH (non-condensing)
Local Storage:	SD/SDHC memory card slot (card not included)
Approvals:	CE Class B, FCC Part 15 Subpart B Class B, ICES- 003, AS/NZS CISPR 22, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 50130-4, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-11, CISPR PUB 22
Dimensions (HxWxD):	170 x 99 x 38 mm (6.7" x 3.9" x 1.5")
Weight (with battery):	450 g (0.99 lb.)

Included accessories: Soft carrying case with sunshield, protective rubber sleeve, built-in stylus for touch screen, Terminal block for CAT-5, Cable, test, Ethernet cable, BNC cable, car charger 12 V DC, power supply, User's Guide

Warranty: Axis 3-Year Warranty

- Axis Camera Station Software with 10 Camera License – Qty. 1

The camera station software shall conform to the following specifications:

Camera

Models: Compatible with Axis network video products running firmware 4.30 or higher
Number of channels: Up to 50

Video

Video compression: H.264 (MPEG-4 Part 10/AVC), MPEG-4 Part 2, Motion JPEG
Resolutions: Supports connected Axis video product resolutions
Recording frame rate: 1500 fps or more on recommended hardware

Audio

Audio streaming: One-way audio
Audio compression: AAC, G.711, G.726

Recording server

Security: Multiple user access levels with password protection using local or Windows domain users (Active directory)

Installation and setup: Automatic camera discovery, Efficient camera management, Powerful event configuration wizard

Recording storage: Unlimited recording database, limited only by disk Space, Record directly to local and network disks
Duration can be limited per camera to conform to local legal requirements, Fail-over recording in cameras, Locking of prioritized recordings

Client: AXIS Camera Station Client (for Windows) included for local and remote viewing, playback and administration

Live view:	Camera live view Flexible live view configuration of up to 50 cameras, Support for multiple monitors, Hot-spot, camera/view sequence, site maps, web page
PTZ support:	Control of PTZ and dome cameras using mouse or Joystick, Area zoom, Digital PTZ, Programmable hot-keys
<u>Playback</u>	
Search for recordings:	Search for recordings based on camera, date and Time, Timeline visualization, smart search, Bookmarks
Playback:	Controllable speed or frame by frame, Graphical timeline for quick overview of events
Synchronized playback:	Playback of video and audio synchronized in time from up to 4 cameras simultaneously
Export:	Manual and scheduled export, Single images in JPEG format or video sequences in ASF format, Digital signature on exported recordings
<u>Triggers & Events</u>	
Event recording:	Events triggered by video motion detection, Active Tampering Alarm, AXIS Cross Line Detection, external inputs, manual trigger or system triggers, Increased quality on event recordings
Scheduled recording:	Schedule per camera allows customization of weekday and weekend recordings
Motion detection:	Advanced camera-based motion detection for low Bandwidth utilization
Input/output control: Alarm notification:	Advanced control of cameras' digital inputs/outputs Visual indication, audible alert, traybar notification, switch to camera/view, go to PTZ preset, email, alarm procedure, acknowledgement of alarms,
Logs:	Alarm, event and audit logs

System

Minimum system requirements:	Windows 7 Professional, Vista Business, XP professional (server and/or client), Windows 2008 Server, 2003 Server (server only), Always use the latest service packs, Microsoft .NET runtime environment (included in installation package)
Minimum computer requirements:	Client: CPU: Intel P4 or higher, 2 GHz (Intel Core 2 Quad recommended for larger systems), RAM: 1 GB (4 GB recommended for larger systems), Graphics card with full DirectX 9.0 hardware acceleration and onboard video memory of 256 MB or more
Minimum computer requirements:	Server: CPU: Intel P4 or higher, 2 GHz (Intel Xeon recommended for larger systems), 1 GB RAM (4 GB recommended for larger systems)
Recommended network:	100 Megabit network (Gigabit network recommended for larger systems)
Recommended hard disk Configuration:	At 30 fps in VGA: up to 15 cameras/hard disk

General

Languages:	English, French, German, Italian and Spanish
Licenses:	AXIS Camera Station base licenses for 4 or 10 cameras/channels to be used on one single dedicated PC/server, Additional licenses in +1, +5 or +20 up to 50 cameras/channels, One year support license included in initial base license
License registration:	Register automatically over the Internet or manually At www.axis.com within a five day grace period
Included accessories:	Installation Guide, CD with software and User's Manual

- Axis Camera Station 20 Camera Upgrade License - Qty. 1

License Quantity: 20 additional cameras/channels for use with Axis Camera Station software

- Dynamic Message Sign Controller - Qty. 2

- Dynamic Message Sign LED Modules with Driver Cards (7x5, 4 LEDS per pixel, 30 Degree) – Qty. 20
- Dynamic Message Sign External Power Supplies – Qty. 6 (enough to fully replace two DMS signs)
- Dynamic Message Sign Surge Arrestors – Qty. 2 Complete Sets (enough for two DMS signs)

Basis of Payment: This work will be paid for at the contract unit price per lump sum for SUPPORT EQUIPMENT AND MAINTENANCE which price shall be payment in full for all labor, materials, and equipment required to provide the equipment specified above and deliver it to the Department.

COMMUNICATIONS VAULT

This work shall be in accordance with Sections 814 and 1088 of the Standard Specifications except as modified herein.

This work shall consist of furnishing and installing a communications vault constructed of polymer concrete.

The following items are approved for use: Hubbel, Quazite, Part Numbers: PG2436HA00 (Cover) and PG2436BA30 (Box) or approved equal:

The communications vault and lid shall conform to the following specifications:

Cover:

Material: Polymer Concrete
Nominal Dimensions: 24" W x 36 L"
Gasketed, Heavy Duty Lid with 2 Bolts
Design/Test Load: 15,000/22,500 lb
ANSI Tier: 15

Box

Material: Polymer Concrete
Nominal Dimensions: 24" W x 36" L x 30" D
Open Bottom
Design/Test Load: 22,500/33,750 lb
ANSI Tier: 22

The location of the handhole shall be excavated so that the top of the handhole is set flush with the sidewalk or paved surface. When installed in earth shoulder away from the pavement edge, the top surface of the handhole shall be 1 in. (25 mm) above the finished grade. The excavation shall be deep enough to accommodate the depth of the box and french drain.

The french drain shall be constructed underneath the proposed handhole according to Article 601.06 and in accordance with Highway Standard 814001.

The conduits shall enter the vault at 24" minimum and the Contractor shall install six inches of CA 5 or CA 7 in the bottom of the vault.

The french drain shall be constructed underneath the proposed handhole according to Article 601.06 and in accordance with Highway Standard 814006.

The Contractor shall submit testing reports to verify that the communications vaults and lids meet the requirements of ANSI Tier 15 and ANSI Tier 22 loading.

The fiber optic locating cable shall be continuous and accessible on the outside of each communication vault. The Contractor shall utilize appropriate corrosion resistant hardware (stainless steel) and connections to the locating wire. The Contractor shall submit material and installation methods to the Department for review.

Basis of Payment: This work will be paid for at the contract unit price of each for COMMUNICATIONS VAULT, which shall be payment in full for all labor, equipment, and materials required to provide and install the equipment described above, complete.

UNINTERRUPTABLE POWER SUPPLY, SPECIAL

The Contractor shall furnish an uninterruptable power supply (material only) and deliver it to the IDOT District 7 headquarters.

The uninterruptible power supply shall be a rack mounted APC Smart-UPS X 1500VA Rack LCD 120V equipped with network card (SMX1500RM2UNC) or approved equal that meets or exceeds the following specifications:

OUTPUT

- | | |
|-----------------------------------|--------------------------------|
| Output Power Capacity: | • 1200 Watts / 1500 VA |
| Nominal Output Voltage: | • 120V |
| Efficiency at Full Load: | • 97.7% |
| Output Voltage Distortion: | • Less than 5% at full load |
| Output Frequency (sync to mains): | • 47 - 63 Hz for 60 Hz nominal |
| Waveform Type: | • Sine wave |
| Output Connections: | • (8) NEMA 5-15R |

INPUT

- | | |
|------------------------|--------|
| Nominal Input Voltage: | • 120V |
|------------------------|--------|

- Input Frequency: • 50/60 Hz +/- 3 Hz (auto sensing)
- Input Connections: • NEMA 5-15P
- Cord Length • 8 feet
- Input voltage range for main operations: • 82 - 143V
- Input voltage adjustable range for mains operation: • 75 - 154V
- Maximum input current: • 12A
- Input breaker capacity: • 20.0A

BATTERIES AND RUNTIME

- Battery Type: • Maintenance-free sealed Lead-Acid battery with suspended electrolyte (leak-proof)
- Typical recharge time: • 3 hour(s)
- Typical Backup Time at Half Load: • 17.2 minutes (600 Watts)
- Typical Backup Time at Full Load: • 5.8 minutes (1200 Watts)
- DC overcurrent protection • 60A

COMMUNICATIONS & MANAGEMENT

- Interface Port(s): • SmartSlot,USB
- Pre-Installed SmartSlot™ Cards: • AP9631 (RJ-45 10/100 Base-T, HTTP,HTTPS,IPv4,IPv6,NTP,SMTP,SNMP v1,SNMP v3,SSH V1,SSH V2,SSL,TCP/IP,Telnet)
- Control panel: • Multi-function LCD status and control console
- Audible Alarm: • Alarm when on battery : distinctive low battery alarm
: overload continuous tone alarm

SURGE PROTECTION AND FILTERING

- Surge energy rating: • 600 Joules
- Filtering: • Full time multi-pole noise filtering : 5% IEEE surge let-through : zero clamping response time : meets UL 1449

PHYSICAL

- Maximum Height: • 3.50 inches (89 mm)
- Maximum Width: • 19.30 inches (432 mm)
- Maximum depth: • 18.00 inches (457 mm)
- Rack Height: • 2U
- Net Weight: • 54.60 lbs. (28.64 kg)
- Mounting • Equipped with Sliding Rails

ENVIRONMENTAL

- Operating Environment: • 32 - 104 °F (0 - 40 °C)
- Operating Relative Humidity: • 0 - 95%
- Audible noise at 1 meter from surface of unit: • 40 dBA
- Online Thermal Dissipation: • 133.00 BTU/hr

CONFORMANCE

- Regulatory Approvals: • cUL Listed,UL 1778

WARRANTY

- Manufacturer's Warranty • 3 years (materials and workmanship), 2 years on batteries

Basis of Payment: This work will be paid for at the contract unit price per each for UNINTERRUPTABLE POWER SUPPLY, SPECIAL which price shall be payment in full for all labor, materials, and equipment required to provide uninterruptible power supply and deliver it to the IDOT District 7 headquarters in Effingham.

EQUIPMENT CABINET

The Contractor shall furnish a locking server cabinet and install it at the IDOT District 7 headquarters in Effingham.

The Vendor shall provide all labor, equipment, and materials required to install the proposed equipment rack.

The Contractor shall coordinate with the Department prior to commencing work to minimize service disruptions.

The server cabinet shall be an APC NetShelter SX AR3100 42U rack or approved equal that meets the following specifications:

The cabinet shall be furnished with the following items:

- 19" Sliding Keyboard Tray – Qty. 1
- 19" Fixed Shelf – Qty. 4
- Roof Fan Tray (440 CFM, Audible Noise at 1 meter from surface of unit: 51.00 dBA, 120V) – Qty. 1
- Floor Bolt Kit – Qty. 1

Features:

- Adjustable front vertical mounting rail
- Adjustable mounting depth
- Cable access
- Casters
- Deep form factor (42"/1070mm)
- Door ventilation exceeds 830 in² (5355 cm²)
- Expanded cable management (facilitates overhead cable management, facilitates overhead power distribution, facilitates rear/vertical cable management)
- Leveling feet
- Lockable doors and side panels
- Multi-contractor equipment compatibility
- Numbered u positions
- Protective grounding provisions
- Quick release doors
- Quick release side panels
- Removable doors and side panels
- Reversible doors
- Split rear doors
- Tool-less mounting
- UBC zone 4 stabilization provisions
- Ventilated doors with scalable cooling options
- Vertical mounting rails with square holes

Specifications:

Physical Specifications:

Maximum Height:	1991.00 mm
Maximum Width:	600.00 mm
Maximum Depth:	1070.00 mm
Net Depth with Stabilizing Feet:	1278.00 mm
Weight Capacity (static load):	1363.64 KG
Weight Capacity (dynamic load):	1022.73 KG
Minimum Mounting Depth:	191.00 mm
Maximum Mounting Depth:	934.00 mm
Rack Height:	42U
Color:	Black
Vertical Posts:	16 gauge
Front Door:	16 gauge
Rear Door:	18 gauge
Roof:	18 gauge
EIA Mounting Rails:	14 gauge
Side Panels:	18 gauge

1.0 General Requirements

1.1 The unit shall be designed to provide a secure, managed environment for server and networking equipment. The unit shall be equipped with locking front and rear doors.

1.2 The unit shall conform to EIA-310 Standard for Cabinets, Racks, Panels and Associated Equipment and accommodate industry standard 19" rack mount equipment.

1.3 The unit shall be designed with four (4) vertical posts to allow rack mount equipment installation utilizing four (4) vertical mounting rails.

1.4 The unit shall be available with a vertical equipment mounting space of 42U (1U=1.75" or 44.45mm).

1.5 The unit shall be available to order with one part number configured with all enclosure components pre-assembled.

2.0 Physical Specifications

2.1 Enclosure dimensions, rack mounting compatibility and weight load ratings:

Internal Height	EIA-310	External Height	External Width	External Depth	Static Rating	Dynamic Rating
42U	19"	1991mm (78.40")	600mm (23.62")	1070mm (42.13")	1364kg (3000lbs)	1023kg (2250lbs)

2.2 The unit shall have exterior maximum height measurement of 1991mm (78.40”) to allow passage through a standard 2 Meter or 7 Ft. (84”) doorway without tipping.

2.3 The unit shall support a static load (weight supported by the casters and leveling feet) of at least 1,364 kg. (3,000 lbs.) total installed equipment weight.

2.4 The unit shall support a dynamic load (rolling on the casters) of at least 1,023 kg. (2,250 lbs.) total installed equipment weight.

2.5 The unit shall ship with a perforated front door, perforated split rear doors, left and right two-piece solid side panels, tool-less roof, four (4) vertical frame posts, four (4) adjustable vertical mounting rails, two (2) vertical PDU mount cable organizers, four (4) leveling feet and four (4) casters, pre-installed by the manufacturer.

2.6 The unit shall ship with baying hardware pre-installed by the manufacturer.

2.6.1 Baying brackets must provide two sets of mounting holes for standard enclosure spacing of 24” or 600 mm.

2.7 The unit shall ship with grounding hardware pre-installed by the manufacturer.

3.0 Equipment Access & Mounting

3.1 The unit shall provide 42U of equipment vertical mounting space.

3.2 The vertical mounting rails shall be easily adjustable to allow different mounting depths.

3.2.1 The vertical mounting rails shall have a second set of EIA mounting holes perpendicular to the primary mounting holes to allow devices to be mounted in the side channel.

3.2.2 Each vertical mounting rail shall be marked on both sides with lines showing the top and bottom of each U and the number U space next to the middle hole. Each U consists of three square holes and is 1.75 inches (44.45 mm) high.

3.3 The unit shall include at least 60 sets of M6 caged nuts, bolts and cup washers, and caged nut tool for the mounting of equipment inside the unit.

3.3.1 The manufacturer shall offer an optional hardware kit containing additional M6 caged nuts, screws and cup washers.

3.4 Both the front and rear doors shall be designed with quick release hinges allowing for quick and easy detachment without the use of tools.

3.4.1 The front and rear doors shall open a minimum of 130 degrees to allow easy access to the interior.

3.4.2 The front door of the unit shall be reversible so that it opens from either side.

3.4.3 Split rear doors are provided for increased service clearance.

3.4.4 The front door of the unit shall be capable of being installed on the rear of the unit, and the rear doors shall be capable of being installed on the front of the unit.

3.5 The unit shall include two-piece removable side panels that are removed without tools using easy finger latches for fast access to cabling and equipment.

3.5.1 The side panels on the unit shall double as privacy panels when the units are bayed together

4.0 Material Requirements

4.1 All weight bearing components shall be constructed from steel with a thickness no less than 0.9mm (20 gauge).

4.2 All metal parts shall be painted using a powder coat paint process.

4.3 Plastic materials shall comply with Underwriters Laboratory Specification 94 with V-1 rating (UL94 V-1) or better.

5.0 Grounding Requirements

5.1 All enclosure panels and rack-mounted equipment shall be inherently earthed or grounded directly to the frame.

6.0 Environmental Requirements

6.1 The unit shall have a minimum of IP 20 rating for protection against touch, ingress of foreign bodies, and ingress of water.

7.0 Safety Requirements

7.1 The enclosure shall both protect the user from mechanical hazards and generally meet the requirements for a mechanical enclosure (stability, mechanical strength, aperture sizes, etc.) as defined in IEC 60950 Third Edition.

8.0 Ventilation

8.1 The unit shall provide adequate ventilation to provide airflow required by the major server manufacturers.

8.2 The unit shall provide a minimum total ventilation area for the front door, split rear doors, and roof as specified below:

Internal Height	External Width	External Depth	Perforated Front Door	Perforated Rear Doors
42U	600mm (23.62")	1070mm (42.13")	5930 cm ² (919 in ²)	6689 cm ² (1036 in ²)

8.3 The unit shall provide the means to mount an optional fan-tray in the roof of the unit and other cooling accessories for high-density.

8.4 The manufacturer shall offer an optional tool-less blanking panel kit to prevent the recirculation of hot exhaust air.

8.5 The manufacturer shall offer an optional air baffle kit to prevent the recirculation of hot exhaust air.

9.0 Cable Management

9.1 The unit shall have clearance for wiring access of at least 3” between the inside surface of the front door and front mounting face of the vertical mounting rails.

9.2 The unit shall have clearance for wiring access of at least 1.5” between the side panel and the vertical mounting rails.

9.3 Top cable management openings provided in the enclosure roof:

Internal Height	External Width	External Depth	Openings Located on Roof	Opening with Roof Removed
42U	600mm (23.62")	1070mm (42.13")	Two 75mm (2.96") x 644mm (1.64"), One 240mm (9.45") x 92mm (3.61"), and Five 71mm (6.75") x 54mm (2.14") Rectangular Openings	567mm (22.31") x 892mm (35.10")

9.3.1 The five 171mm (6.75") x 54mm (2.14") rectangular roof cable management openings are protected with plastic grommets and caps preinstalled by the manufacturer.

9.4 Bottom cable management opening provided in the enclosure base:

Internal Height	External Width	External Depth	Main Base Opening
42U	600mm (23.62")	1070mm (42.13")	567mm (22.31") x 831mm (32.71")

9.5 Side cable management openings provided in the vertical PDU mount cable organizers:

Internal Height	External Width	External Depth	Side Cable Management Openings
42U	600mm (23.62")	1070mm (42.13")	Two 61mm (2.4") x 55mm (2.16") and Four 61mm (2.4") x 200mm (7.88") Rectangular Openings on each Side

10.0 Security

10.1 The unit shall include front door lock, rear door lock and side panel lock that are keyed the same; two keys included.

10.1.1 Replacement key lock cylinders should be available to provide a minimum of 300 unique key combinations on front and rear doors.

10.2 The roof shall not be removable from the interior of the enclosure without tools.

10.3 The manufacturer shall provide optional products and accessories that allow the enclosure environment to be monitored for temperature, humidity, and door access.

10.4 The unit shall have mounting provisions for optional door alarm switch to monitor access to the enclosure doors.

11.0 Stabilization

11.1 The unit shall ship with provisions for adding stabilization in the field.

11.2 The manufacturer shall have optional stabilizer plate kit, consisting of a plate, and mounting hardware that can be attached to the enclosure frame, and that can be bolted to the floor.

11.2.1 The unit shall have mounting provisions for the stabilizer plate on the front and rear (on the interior or exterior) of the unit.

11.3 The manufacturer shall have optional bolt down brackets, consisting of four (4) brackets and mounting hardware that attach to the enclosure frame on the front and rear (on the interior or exterior), and which must be anchored to the sub-floor for compliance with the local Uniform Building Code (UBC).

11.4 The manufacturer should supply structural calculations by a professionally registered engineering firm showing compliance with the local UBC for floor anchoring.

11.5 The unit shall have four (4) adjustable leveling feet to help provide a stable base in the event of an uneven floor surface and to prevent rolling.

12.0 Packaging

12.1 The unit shall ship on a wooden pallet. Optional packaging should be available for shipping racks with 1250 lbs and 2000 lbs of installed equipment.

12.2 The unit shall be bolted to the wooden pallet for stability during shipment.

12.3 The unit shall be protected by corrugated corners, which are stretch-wrapped to limit damage during handling.

12.4 The unit shall have a "damage report" sticker on the outside of the packaging which instructs customers to call a toll-free customer support number to resolve possible shipping damage issues.

13.0 Delivery & Installation

13.1 The unit shall be shipped fully assembled as one orderable SKU.

13.2 The manufacturer shall offer an inside-delivery shipping option which includes reasonable delivery to the inside of a customer's building and removal and disposal of shipping material and packaging.

13.3 The unit shall roll through a standard 2 meter or seven (7) foot office doorway.

14.0 Miscellaneous

14.1 The unit shall include free configuration software, available separately from the manufacturer, which enables customers to graphically populate the unit with network equipment, calculate BTU's and power draws, and print out a list of required accessories.

14.2 The unit shall be available pre-configured with the equipment and accessories offered from the unit's manufacturer for an additional flat charge.

15.0 Warranty

15.1 The manufacturer shall warrant the unit to be free from defects in materials and workmanship for a minimum period of five years from the date of purchase. The manufacturer's obligation under this warranty shall be to repair or replace the unit, at its own sole option. This warranty shall not apply to equipment that has been damaged by accident, negligence, or misapplication or has been altered or modified in any way.

15.2 The manufacturer shall warrant all accessories and options to be free from defects in materials and workmanship for a minimum period of two years from the date of purchase. The manufacturer's obligation under this warranty shall be to repair or replace the equipment, at its own sole option. This warranty shall not apply to equipment that has been damaged by accident, negligence, or misapplication or has been altered or modified in any way.

16.0 Accessories

16.1 *RM LCD Monitor/Keyboard Drawer.* The manufacturer shall offer a 1U high, rack-mounted LCD monitor/keyboard drawer to maximize space in a data center environment.

16.2 *Keyboard Drawers & Keyboards:* The manufacturer shall offer 17" and 19" keyboard drawers, and a 17" keyboard with built-in track-ball or touch-pad.

16.3 *Cooling:* The manufacturer shall offer roof-mounted fan trays, rack-mounted fan trays, door fan modules, and monitoring devices for maintaining a cool environment.

16.3.1 Thermal simulation capabilities should be available to support proposed configurations.

16.5 *Cable Management:* The manufacturer shall offer a variety of cable management accessories to neatly organize the routing of data and power cables within the enclosure.

16.6 *Shelving:* The manufacturer shall offer as optional accessories various fixed and sliding shelves with the ability to support up to 250 lbs of non-rack mount equipment.

16.11 *Stabilization:* The manufacturer shall offer a stabilizer plate kit to be anti-tip device and bolt-down bracket kit for floor anchoring.

The Contractor shall also furnish and install one rack mounted power distribution unit. The power distribution unit shall be an APC Metered 16 Outlet Vertical Rack Mounted Power Strip (AP7831) that meets or exceeds the following specifications:

FEATURES

- Usage:
- Metered rack power distribution unit distributes power to devices in the rack
 - Equipped with a sensor that measures the current used by the PDU and its attached devices.
 - Monitored through Web, Telnet, SNMP, SSH, or InfraStruXure™ Manager interfaces.

DISPLAY

- Interface:
- Digital display shows the aggregate current used by the Rack PDU.

OUTPUT

- Nominal Output Voltage
- 120V
- Maximum Total Current Draw per Phase
- 15A
- Output Connections
- (16) NEMA 5-15R
- Always on Outlets
- 16
- Overload Protection
- No

INPUT

- Nominal Input Voltage • 100V,120V
- Input Frequency • 50/60 Hz
- Input Connections • NEMA 5-15P
- Cord Length • 10 feet (3.05 meters)
- Number of Power Cords • 1
- Maximum Input Current per phase • 15A
- Load Capacity • 1440 VA
- Regulatory Derated Input Current (North America) • 12A
- Acceptable Input Voltage • 100-120 VAC
- Maximum Line Current per phase • 15A

PHYSICAL

- Net Weight • 6.75 lbs. (3.07 kg)
- Maximum Height • 49.00 inches (1245 mm)
- Maximum Width • 2.20 inches (56 mm)
- Maximum Depth • 1.75 inches (44 mm)
- Shipping Weight • 8.75 lbs. (3.98 kg)
- Shipping Height • 84.00 inches (2134 mm)
- Shipping Width • 6.00 inches (152 mm)
- Shipping Depth • 5.00 inches (127 mm)
- Color • Black

ENVIRONMENTAL

- | | |
|-----------------------------|---------------------------------|
| Operating Environment | • 23 - 113 °F (-5 - 45 °C) |
| Operating Relative Humidity | • 5 - 95% |
| Operating Elevation | • 0-10000 feet (0-3000 meters) |
| Storage Temperature | • -13 - 149 °F (-25 - 65 °C) |
| Storage Relative Humidity | • 5 - 95% |
| Storage Elevation | • 0-50000 feet (0-15000 meters) |

CONFORMANCE

- | | |
|--------------------------|---|
| Regulatory Approvals | • cUL Listed,cUL Recognized,CSA C22.2 No. 42,CSA C22.2 No. 60950-1-03,FCC Part 15 Class A,ICES-003,Industry Canada,METI Denan,UL 60950-1,UL Listed,VCCI |
| Environmental Compliance | • RoHS 7b Exemption, REACH: Contains No SVHCs,Contains Lithium Battery |

WARRANTY

- | | |
|-------------------|-----------------------------|
| Standard Warranty | • 2 years repair or replace |
|-------------------|-----------------------------|

Basis of Payment: This work will be paid for at the contract unit price per each for EQUIPMENT CABINET which price shall be payment in full for all labor, materials, and equipment required to provide equipment cabinet, install the proposed rack and equipment, in the Operations Office at the District 7 Headquarters, and perform all other items required for installation.

POLE MOUNTED EQUIPMENT CABINET TYPE B

Description. This work consists of furnishing and installing a pole mounted equipment cabinet and peripheral equipment at locations indicated in the Plans. These cabinets will be utilized to house critical electrical, optical, and communications equipment at each dynamic message sign location.

Materials. Materials shall be in accordance to the following specifications.

General. The equipment cabinet shall conform to the details shown on the plan sheet. Equipment cabinets shall be mounted and anchored on the sign structures at locations indicated in the Plans. In addition, all mounting hardware and brackets required to install the equipment cabinet on the pole shall be stainless steel and provided. The mounting heights and pole diameters shall be as specified by the Engineer.

The Type B cabinet shall be a NEMA 3R Single Door Enclosure, constructed from .125" thick aluminum, with minimum outside dimensions of 41" (H) x 25" (W) x 16" (D). The cabinet shall have a natural finish.

The cabinet shall be furnished with one adjustable height shelf, a three point latching mechanism, three position door stop (90, 120, 180 degrees), neoprene door gasket, door louvers, overhang vent slots, continuous stainless steel door hinge, interior stiffeners for pole mounting, and all stainless steel hardware. The cabinet shall also have a Corbin #2 dead bolt lock or equal. The key shall be removable in the lock position only. Two keys shall be supplied for each lock, and all equipment cabinet locks shall be keyed the same. The cabinet shall be equipped with a thermostatically controlled ventilation fan. The cabinet shall include one sliding laptop shelf with storage compartment.

The Contractor shall install a 48" x 48" concrete stand pad at each location. The cost of this stand pad shall be included in the bid price for this pay item.

All cables shall be labeled utilizing marking tags.

The cabinet shall be equipped with a main power panel as shown on the cabinet plan detail sheet. The power panel shall include one double pole 60A main power breaker, one 30A main cabinet breaker, one 15A equipment breaker, neutral bus bar, ground bus bar, 15A GFI receptacle, two terminal blocks, one surge protector, and one six outlet power strip with integral surge protection. The power panel shall include a plexi-glass safety shield that covers the power panel.

Surge Protectors

The cabinet shall include a surge protector for the dynamic message board power. The DMS surge protector shall be an Edco LPL240525-2 or equivalent.

The cabinet equipment surge protector shall be an ECO SHA-1210IRS or approved equal.

A surge protector shall protect each leg of the primary power feed. This surge protector shall be installed as a precautionary measure against possible damage resulting from voltage surges on all incoming power lines. The 120V AC single-phase surge protector shall incorporate a series choke and shall have a maximum clamp voltage of 340 V at 20 kA with a 5 ns response.

In addition, the surge protector shall have the capability of removing high-energy surges and shall block high-speed transients. The surge protector shall comply with the following specifications:

Peak Current:	20,000 amps (8 X 20 us wave shape)
Occurrences:	20 times at peak current
Minimum Series Inductance:	200 microHenrys
Continuous Series Current:	50A
Temperature Range:	-40°F to 185°F (-40°C to +85°C)

Power Strip

The cabinet power strip shall have a minimum of six outlets and integral surge suppression that meets or exceeds the following minimum specifications:

- Let Through Voltage: <85 Volts
- Operating Voltage: 120VAC, 50/60H
- UL Suppressed Voltage Rating: 330V
- Energy Rating: 320J
- Peak Current NM/CM: 13k Amps NM, 13k Amps CM
- EMI/RFI Noise Filtration: >25-60dB

The power strip shall be wired directly to the protected power terminals on the cabinet surge arrester.

Construction Requirements.

The Contractor shall prepare and submit shop drawings that detail all of the components to be supplied, along with associated mounting hardware for the pole mounted equipment cabinet. The shop drawings must be approved by the Engineer prior installation of the completed cabinet in the field.

The Engineer reserves the right to inspect and/or factory test any completed cabinet assemblies prior to shipment of the material to the project site. Any deviations from these specifications that are identified during such testing shall be corrected prior to delivery of the assembly to the project site.

The AC power service to be run to the equipment cabinet shall be terminated. In addition, the cabinet shall be connected to an adequate ground following the Standard Specifications.

The Contractor shall terminate any inbound and outbound cables in the equipment cabinet. The Contractor shall terminate any twisted pair communication cable on the termination panel in the equipment cabinet as shown in the Plans. Lugs shall be installed at the end of each conductor suitable for connection to the barrier terminal blocks.

The Contractor shall terminate all fiber optic cables required for the DMS in the equipment cabinet. All fibers in the cable shall be terminated in an approved enclosure with ST connectors and labeled with fiber color utilizing a computer generated label.

The Contractor shall install DIN rail and associated equipment inside the cabinet to the satisfaction of the Engineer.

Method of Measurement. This item shall be measured for payment by each pole mounted equipment cabinet type B in-place.

Basis of Payment. This work shall be paid for at the contract unit price each for POLE MOUNTED EQUIPMENT CABINET TYPE B, and shall include all equipment, material and labor detailed in the specifications and as shown on the Plans.

APPLICATION SERVER

The Contractor shall furnish a computer server complete with accessories (material only) and deliver it to the IDOT District 7 headquarters in Effingham.

The computer shall be a HP ProLiant DL120 G7 Hot Plug Server or approved equal that meets or exceeds the following minimum specifications:

- Operating System: Windows Server 2008 Standard Edition (with latest service pack) factory integrated software
- Hard disk: Three 300 GB 6G 2.5 SAS Dual Port 15,000 rpm Enterprise Hard Drives, Hot-swappable, RAID 5 drive set (200 GB Logical Size Setting), with HP P410/ZM Smart Array Controller
- Motherboard: 1333 MHz FSB clock speed with minimum of 2 dedicated PCI –E slots. All slots shall support bus mastering.
 - A single Quad Core Intel Xeon E3-1230 processor (3.20 GHz CPU (80 Watt) with 8 MB L2 cache) and 1333 MHz FSB shall be provided.
 - Embedded Serial ATA/300 controller
 - The following ports shall be provided:
 - One 9-pin serial connector; 16550-compatible
 - PS/2 keyboard connector
 - PS/2 mouse connector
 - RJ-45 10/100/1000 NIC connector
 - Six Type A USB 2.0 ports
 - One SVGA display port
 - Two PCI Express x8 Expansion Slot (1 Low Profile and one Full Height)
 - Expansion bays: 2 x 5.25" External Removable Media Bay (1 Free), 2 x 3.5" Drive Bay Non Hot-swappable (1 Free)
- Memory: Minimum of 8 GB (4x2GB DIMM) of PC3L-10600E UB ECC DDR3-1333 memory (expandable to 16 GB min). At least one memory bank shall remain open for future expansion. A total of six slots shall be provided.
- Graphics Controller: 64MB Shared DDR3 SDRAM (Resolutions up to 1600 x 1200 16bpp @ 75 Hz)
- Case: IU Rack, Equipped with all brackets, hardware, and other items required for rack mounting
- Pointing Device: A 3-button, optical wheel mouse shall be supplied.

- Keyboard: A standard Windows keyboard shall be supplied
- Network Interface: The workstation shall be supplied with two Integrated Network Interface Cards (NIC) supporting 10/100/1000 MB/s and using 32-bit PCI bus-mastering technology. The cards shall have UTP (RJ-45) connectors. The cards shall be compliant with PCI local bus specification 2.0 and IEEE 802.3 for Ethernet. The card shall also support Netflex-3 technology.
- Optical Drive HP 9.5mm SATA DVD RW Drive
- Warranty Three-year on-site parts and labor (Next Business Day) including telephone technical support
- Recovery Media Drivers, Application Software, and Operating System Installation and/or recovery media (CD or DVD) shall be included, Power Cord

The Contractor shall also furnish one rack mounted LCD console (material only). The LCD console shall be a Belkin 19-inch Widescreen LCD Rack Console (Part Number F1DC101H) or approved equal that meets or exceeds the following specifications:

GENERAL

- Product Type: • 19 inch LCD Rack Console Widescreen
- Rail Type: • Single-Rail Technology
- Form Factor: • 1U Rack-mountable
- Material/Enclosure: • High-Impact Plastic & Steel
- Built-In KVM Switch: • No
- Weight: • 23.8 lbs (10.8kg)
- Dimensions: • 19 x 29 x 1.75 in. (482.6 x 736.6 x 44.5 mm)
- Users: • 1
- Keyboard Type: • Laptop Style
- Keyboard/Mouse Connection: • PS/2, USB
- Operating Life of Keys: • 8 Million Cycles
- Mouse Type: • Touch Pad Style

DISPLAY

- Display Type: • 19" LCD Widescreen, TFT active matrix
- Maximum Resolution: • 1440 x 900 / 65 Hz
- Display Connection: • Analog VGA
- Color Depth: • 16.7 million colors
- Aspect Ratio: • 16:9
- Pixel Pitch: • 0.2835 mm
- Response Time: • 5 ms
- Viewing Angle: • 170 degrees vertical/178 degrees horizontal
- Image Contrast Ratio • 1000:1

POWER/ENVIRONMENT

- Power Rating: • Auto-Switching 100 to 240VAC, 50 to 60Hz, 48 Watt
- Power Supply Type: • Built-in
- Operating Temperature: • 32° to 104°F (0° to 40°C)
- Storage Temperature: • -4° to 140°F (-20° to 60°C)
- Humidity: • 0–80% RH, Non-Condensing

WARRANTY

- Manufacturer's Warranty: • Two years

Basis of Payment: This work will be paid for at the contract unit price per each for APPLICATION SERVER which price shall be payment in full for all labor, materials, and equipment required to provide the application server, rack mount console, KVM switch, and accessories described above and deliver it to the Department.

LCD MONITOR

The Contractor shall furnish and install a commercial grade LCD Monitor at the IDOT District 7 headquarters in Effingham or at the IDOT District 7 Sign Shop in Effingham.

The Contractor shall provide mounting brackets, hardware, cable raceway, and all other items required to install the monitor onto an existing wall and to conceal the power cords and video cables.

The monitor shall be a LG Electronics Model 42WL19MS-B 42 inch commercial grade HD capable monitor equipped with LG external monitor speakers or approved equal that meets or exceeds the following minimum specifications:

PANEL

- | | |
|------------------------|--------------------------------|
| LCD Panel Type: | • 42" class |
| Type Display Area: | • 42.0" diagonal |
| Aspect Ratio: | • 16 : 9 |
| Native Resolution: | • 1920 x 1080 (FHD) |
| Pixels (H x V x 3): | • 6,220,800 |
| Brightness: | • 400 cd/m ² |
| Contrast Ratio: | • 1,000:1 |
| Color Gamut: | • 68% |
| Viewing Angle (H x V): | • 178° x 178° |
| Color Depth: | • 1.06 Billion |
| Response Time: | • 6ms (G to G) |
| Surface Treatment: | • Hard Coating (3H) Anti-glare |

VIDEO

- | | |
|-------------------------|--------------------------------------|
| Max Input Resolution: | • 1920 x 1080 @ 60Hz (RGB, HDMI/DVI) |
| Recommended Resolution: | • 1920 x 1080 @ 60Hz (RGB, HDMI/DVI) |
| H-Scanning Frequency: | • 30 ~ 68kHz (RGB, HDMI/DVI) |

- V-Scanning Frequency: • 56 ~ 75 Hz (RGB), 60 Hz (HDMI/DVI)
- Pixel Frequency: • 148.5 MHz (RGB, HDMI/DVI)
- Sync Compatibility: • Separate/Composite/Digital
- Video Input: • RGB, HDMI, DVI-D
- Picture mode: • Vivid/Standard/Cinema/Sports/Game
- Color temperature: • Warm/Medium/Cool

REAR INPUTS

- PC Input via 15-Pin Sub "D": • Yes, 1/1
- Composite Video Input/Output: • Yes, 1/1
- Audio Output: • Yes
- Audio Inputs: • Yes, 2Plus PC Sound
- HDTV Formats: • Component: 720p/1080i/1080p, HDMI :720p/1080i/1080p
- USB: • Yes
- External Speaker Out: • Yes
- External Control • RS232C, IR

AUDIO

- Balance: • Yes
- Audio Power: • 20W(10W x 2)
- Speaker On/off: • Yes
- Clear Voice II: • Yes
- Sound mode: • Standard/Music/Cinema/Sports/Game

SPECIAL FEATURES

- New Temperature Sensor: • Yes

- Split Zoom (Self Video Wall, Max 5 x 5):
 - Yes, supports natural mode
- Source Selection:
 - HDMI, DVI-D, RGB, Component, USB
- Advanced:
 - Dynamic Contrast, Dynamic Color, Clear White, Skin Color, Noise Reduction, Digital Noise Reduction, Gamma, Black Level
- Brightness/Contrast/Backlight:
 - Yes
- Position/Size:
 - Yes
- Auto Config/Phase:
 - Yes
- Language:
 - English, French, German, Spanish, Italian, Korean , Chinese(Simplified), Chinese(Original), Portuguese(Brazil), Swedish, Finnish, Norwegian, Danish, Japanese, Russian, Portuguese(Europe), Dutch, Czech, Greek
- Advanced:
 - Color Temp, Dynamic Contrast, Dynamic Color, Clear White, Skin Color, Noise Reduction, Gamma, Black Level
- Time:
 - Clock/On/off Time/Sleep Timer/AutoOff/Power On Delay/Automatic Standby
- Information Display:
 - Model/Type, Software Version, Serial Number, IP Address, MAC Address, Homepage
- Input Label:
 - Yes
- Auto Power/Source Memory:
 - Yes
- Key Lock:
 - Yes
- DPM Select:
 - Yes
- Energy Saving:
 - Yes, Level1/Level2/Level3
- Power Indicator On/Off:
 - Yes
- Logo Light On/Off:
 - Yes
- File Play with USB:
 - Yes

CABINET

- Color : • Black
- Bezel Width: • 14.8mm
- Monitor Dimension (WxHxD): • 37.9" x 22.0" x 3.0"
- Monitor Weight: • 28.2 lbs
- Wall Mount Interface: • 200mm x 200mm

POWER

- Power Supply: • 100-240V~, 50/60Hz
- Power Type: • Built-in Power
- Power Switch: • Yes
- Power Consumption: • Normal 90 W

STANDARD
(CERTIFICATIONS)

- Safety: • UL/c-UL/CB scheme/TUV
- EMC • FCC Class "A"/VCCI/C-tick/CE/ KCC
- ErP / ENERGY STAR 5.0: • Yes/Yes

SERVICE/LIMITED
WARRANTY

- Warranty: • 3 Years (parts/labor)

ACCESSORIES

- Included Accessories: • Power Cord

Basis of Payment: This work will be paid for at the contract unit price per each for LCD MONITOR which price shall be payment in full for all labor, materials, and equipment required to provide the LCD Monitor and accessories described above and install it at the District 7 headquarters.

CELLULAR MODEM

The Contractor shall furnish an industrial cellular router with three years of cellular service, industrial power supply, and externally mounted cellular antenna.

The cellular router shall include three years of pre-paid wireless cellular service (10 GB data plan) from Verizon Wireless. The service period shall not begin until the dynamic message boards and CCTV cameras are installed and operational. The Contractor shall transfer the service and account to the Department at the end of the three year period.

The Contractor shall install the cellular router and industrial power supply inside the proposed ITS equipment cabinet using DIN rail mounting. The Contractor shall furnish and install all wiring and hardware required to install the cellular router, power supply, and external antenna.

The Department will assist with providing programming parameters for the cellular modem. The Contractor shall coordinate with the dynamic message board supplier to get the modem configured for reliable operation with the message board. The sixty day burn-in period will not commence until communications are fully operational.

The cellular router shall be a Sixnet SN-6621-VZ Cellular Modem CDMA EVDO Rev A or approved equal that meets or exceeds the following minimum specifications:

FEATURES & BENEFITS

- | | |
|--------------------------------|--|
| Cellular Connectivity: | <ul style="list-style-type: none">• 2G/2.5G (GSM GPRS/EDGE and CDMA 1XRTT)• 3G (GSM WCDMA/HSDPA/HSUPA or EVDO Rev A) |
| Built-In Security & Routing: | <ul style="list-style-type: none">• Secure modbus data using IPSec VPN tunnels• VPN tunnel: IP SEC, SSL• Port forwarding• Stateful Firewall• Packet Filtering• Access Control List (ACL) |
| Powerful Web-Based Management: | <ul style="list-style-type: none">• Provides remote monitoring and control• Mass activation and device upgrades• Remote diagnostics and troubleshooting• Reporting of key metrics |
| Rugged, Compact Design: | <ul style="list-style-type: none">• -40 to +85°C operating temperature• DIN-rail mounting |
| Features: | <ul style="list-style-type: none">• Connect multiple devices to single WAN link• Remote TCP/IP based capabilities• Integrated switching/routing capabilities• Serial to IP conversion• Access IP and serial devices simultaneously |

SPECIFICATIONS

- Wireless Interface:
- Dual-band CDMA2000 EVDO Rev. A (backward compatible with 1xRTT)
 - GSM HSPA (backward compatible with EDGE)
 - EDGE/GPRS
- Ethernet Interface:
- 5x RJ45 Ethernet 10/100 auto-sensing
- Serial Interface:
- 1x RS-232 Serial DB9 115200bps
- USB Interface:
- 1x USB2.0 mini
- LED Status Indicators:
- Power, WAN, Signal, RS232, Ethernet Link and Activity
- Dimensions:
- Steel 120 x 96 x 51 mm (4.7" x 3.77" x 2.0"), 500g (1.1 lbs)
- Power Input:
- 8 - 30 Vdc (12Vdc nominal)
- Environmental:
- Operating Temp: -40 to +85°C
 - Shock: IEC60068-2-27,
 - Vibration: IEC60068-2-6
 - Humidity: 5 to 95% non-condensing
- Certification:
- EMC:FCC, part 15 and Industry Canada, ICES-003
 - Hazardous Locations: Class I, Div. 2, Groups A,B,C,D, UL1604
 - Electrical Safety: UL508/CSA22.2/14 (CUL)
- Routing Protocols:
- OSPF, BGP, RIP
- Encapsulation Protocols:
- GRE and IPinIP
- Tunneling:
- VPN: IPSec and SSL
- Clustering:
- VRRP
- IP:
- NAT, Port Forwarding, Dynamic DNS, DHCP
 - Stateful Inspection Firewall, IP Transparency
- Warranty:
- 3 years on design and manufacturing defects

The Contractor shall furnish an Aaxeon Model DR-4512 45 watt industrial DIN rail power supply or approved equal that meets or exceeds the following specifications:

OUTPUT

- DC Voltage: • 12V
- Rated Current: • 3.5A
- Current Range: • 0-3.5A
- Rated Power: • 42W
- Ripple & Noise (Max.): • 200mVp-p
- Voltage Adjustment Range: • 10.8 – 13.2V
- Voltage Tolerance: • +/- 1.0%
- Line Regulation: • +/- 1.0%
- Load Regulation: • +/- 1.0%
- Setup, Rise Time: • 800ms, 60ms/230VAC at full load
- Hold Time (Typ.) • 100ms/230VAC at full load

INPUT

- Voltage Range: • 85 – 265 VAC, 120 – 370 VDC
- Frequency Range: • 47 – 63 Hz
- Efficiency (Typ.): • 77%
- AC Current (Typ.): • 1.5A/115VAC, 0.75A/230VAC
- Inrush Current (Typ.): • Cold Start 28A/115VAC, 56A/230VAC
- Leakage Current: • <1mA/240VAC

PROTECTION

- Over Load: • 105 – 150% rated output power (Protection Type: Constant current limiting, recovers automatically after fault condition is removed)

- Over Voltage: • 13.8 – 16.2V (Protection Type: Shut down o/p voltage, re-power on to recover)
- Over Temperature: • 135 degrees C (Protection Type: Shut down o/p voltage, recovers automatically after temperature goes down)

ENVIRONMENT

- Working Temperature: • -10 to 50 degrees C
- Working Humidity: • 20 – 90% Non-condensing
- Storage Temperature • -20 to 85 degrees C
- Storage Humidity: • 10 to 95% Relative Humidity

SAFETY

- Safety Standards: • UL 508
- Withstand Voltage: • I/P-O/P:3KVAC, I/P-FG:1.5KVAC, O/P-FG:0.5KVAC
- Isolation Resistance: • I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC
- Harmonic Current: • Compliance to EN61000-3-2,-3
- EMI Conduction and Radiation: • Compliance to EN55011, EN55022

OTHER

- Mounting • DIN Rail

The Contractor shall furnish and install a NEMA 15-R power cable (3 ft. length) and install the power supply in the proposed equipment cabinet and connect the cellular modem to it.

The cellular modem shall be equipped with an external antenna that shall be attached to the sign structure support and aimed at the nearest Verizon cellular tower.

The cellular antenna shall be a Wilson Electronics 14 dBi Gain 1900 MHz Yagi Antenna (Product Number 301124) or approved equal that meets or exceeds the following specifications:

- Features: • Supports 1900MHz PCS Frequency band, Compatible with all PCS providers, Built-in ground plane
- Antenna Type: • Directional
- Number of Elements: • 9

- Material: • Aluminum
- Frequency Range: • 1850-1990 MHz
- Impedance: • 50 Ohms
- Antenna Gain: • 14 dBi (1710-1880 MHz and 1850-1990 MHz)
- Beam Width: • H 31 Degrees, V 31 Degrees
- Polarization: • Vertical
- Maximum Power: • 25 Watts
- Radiation: • Directional
- Connector: • N Female
- Dimensions: • Pole with U-Bolts
- Mounting: • U-Bolts, Mounts on pipe with 0.5 inch to 1.5 inch diameter
- Accessories: • RG-58 coax extension equipped with factory installed connectors for Yagi and cellular modem, 20 Ft. Length

The Contractor shall furnish and install all cables, brackets, pole mast and hardware required to install the antenna onto the sign structure. The Contractor shall not drill any holes into the top of the proposed equipment cabinet to mount the antenna.

Basis of Payment: This work will be paid for at the contract unit price per each for CELLULAR MODEM which price shall be payment in full for all labor, materials, and equipment required to provide the cellular modem complete with three years prepaid cellular data service and all accessories described above, configure the modem for operation with the TMDMS and camera, and install it in the proposed equipment cabinet.

SPLICING OF PROPOSED FIBER OPTIC CABLE INTO EXISTING ICN NETWORK FIBER OPTIC CABLE

All lateral splicing of proposed fiber optic cable into the existing Illinois Century Network (ICN) fiber optic cable plant shall be performed by the ICN Fiber Maintenance Contractor.

The Contractor shall install the proposed fiber optic cable into the communication vaults that are installed adjacent to the existing ICN communication vaults.

Charges incurred by the Department for splicing into the existing fiber optic cable plant at the locations specified on the plan sheets shall be paid for in accordance with Article 109.05 of the Standard Specifications.

The Contractor shall coordinate with the ICN maintenance contractor as needed to facilitate fiber optic cable splicing.

FIBER OPTIC CABLE 24 FIBERS, SINGLE MODE

This work shall be in accordance with Sections 801, 864, 871, and 1076 of the Standard Specifications except as modified herein.

Each cable shall be clearly labeled in each cabinet utilizing a durable computer generated label. The label shall contain information in regards to the location where the cable is going to or coming from.

All fibers shall be terminated with ST connectors and clearly labeled. The Contractor shall furnish and install 24F termination panels as required.

Fibers not being used shall be labeled "spare", and fibers not attached to a distribution enclosure shall be capped and sealed.

All ancillary components, required to complete the fiber optic cable plant, including but not limited to, moisture and water sealants, cable caps, fan-out kits, weather-proof splice kits, boots, cable trays, splice enclosures, etc., shall be supplied under this pay item and will not be paid for separately. These items shall be submitted to the Department for approval.

Fiber enclosures are included in the cabinet pay items.

The fiber optic cable shall be clearly marked in each handhole and cabinet with a brightly colored (orange or yellow) weather resistant label securely attached to the cable.

The Contractor shall provide and install a 12 Ga., stranded (EPR-TYPE RHW or THHN), insulated tracer cable in all conduits that contain fiber optic cable. This work shall be done at the same time the fiber optic cable is pulled. There will be no additional compensation for this work.

Materials. The single-mode, fiber optic cable shall incorporate a loose, buffer-tube design. The cable shall conform to the requirements of RUS 7 CFR1755.900 (PE-90) for a single sheathed, non-armored cable, and shall be new, unused and of current design and manufacture. The number of fibers in each cable shall be as specified on the plans.

Construction Requirements:

Experience Requirements.

Personnel involved in the installation, splicing and testing of the fiber optic cables shall meet the following requirements:

A minimum of three (3) years experience in the installation of fiber optic cables, including splicing, terminating and testing single mode fibers.

Install two systems where fiber optic cables are outdoors in conduit and where the systems have been in continuous satisfactory operation for at least two years. The Contractor shall submit as proof, photographs or other supporting documents, and the names, addresses and telephone numbers of the operating personnel who can be contacted regarding the installed fiber optic systems.

One fiber optic cable system (which may be one of the two in the preceding paragraph), which the Contractor can arrange for demonstration to the Department representatives and the Engineer.

Installers shall be familiar with the cable manufacturer's recommended procedures for installing the cable. This shall include knowledge of splicing procedures for and equipment being used on this project and knowledge of all hardware such as breakout (furcation) kits and splice closures. The Contractor shall submit documented procedures to the Engineer for approval and to be used by Construction inspectors.

Personnel involved in testing shall have been trained by the manufacturer of the fiber optic cable test equipment to be used, in fiber optic cable testing procedures. Proof of this training shall be submitted to the Engineer for approval. In addition, the Contractor shall submit documentation of the testing procedures for approval by the Engineer.

Installation in Conduit.

During cable pulling operations, the Contractor shall ensure that the minimum bending of the cable is maintained during the unreeling and pulling operations. Entry guide chutes shall be used to guide the cable into the handhole conduit ports. Lubricating compound shall be used to minimize friction. Corner rollers (wheels), if used, shall not have radii less than the minimum installation-bending radius of the cable. A series array of smaller wheels can be used for accomplishing the bend if the cable manufacturers specifically approve the array.

The pulling tension shall be continuously measured and shall not be allowed to exceed the maximum tension specified by the manufacturer of the cable. Fuse links and breaks can be used to ensure that the cable tensile strength is not exceeded. The pulling system shall have an audible alarm that sounds whenever a pre-selected tension level is reached. Tension levels shall be recorded continuously and shall be given to the Engineer upon request.

The cable shall be pulled into the conduit as a single component, absorbing the pulling force in all tension elements. The central strength member and Aramid yarn shall be attached directly to the pulling eye during cable pulling. "Basket grip" or "Chinese-finger type" attachments, which only attach to the cable's outer jacket, shall not be permitted. A breakaway swivel, rated at 95% of the cable manufacturer's approved maximum tensile loading, shall be used on all pulls. When simultaneously pulling fiber optic cable with other cables, separate grooved rollers shall be used for each cable.

Splicing Requirements:

Splices shall be made at locations shown on the Plans. Any other splices shall be permitted only with the approval of the Engineer. The Contractor shall submit a splicing plan to the Department for approval.

Operation and Maintenance Documentation:

After the fiber optic cable plant has been installed, two (2) complete sets of Operation and Maintenance Documentation shall be provided. The documentation shall, as a minimum, include the following:

- Complete and accurate as-built diagrams showing the entire fiber optic cable plant including locations of all splices.
- Final copies of all approved test procedures.
- Complete performance data of the cable plant showing the losses at each terminal connector.
- Complete parts list including names of vendors.

Testing Requirements:

Testing shall be in accordance with Article 801.13

The Contractor shall submit detailed test procedures for approval by the Engineer. All continuous fiber runs shall be tested bi-directionally at both 1310 nm and 1550 nm with a power meter and optical source. For testing, intermediate breakout fibers may be concatenated and tested end-to-end. Any discrepancies between the measured results and these specifications will be resolved to the satisfaction of the Engineer.

The Contractor shall provide the date, time and location of any tests required by this specification to the Engineer at least 5 days before performing the test. Upon completion of the cable installation, splicing, and termination, the Contractor shall test all fibers in each link for continuity and attenuation. The test procedure shall be as follows:

A Certified Technician utilizing an Optical Source/Power Meter shall conduct the testing. The Technician is directed to conduct the test using the standard operating procedures defined by the manufacturer of the test equipment. All fibers installed shall be tested in both directions.

At the completion of the test, the Contractor shall provide two copies of documentation of the test results to the Engineer. The test documentation shall be bound and shall include the following:

Cable & Fiber Identification:

Cable ID
Cable Location - beginning and end point
Fiber ID, including tube and fiber color
Operator Name
Date & Time
Setup Parameters
Wavelength
Pulse width (OTDR)
Refractory index (OTDR)
Range (OTDR)
Scale (OTDR)
Setup Option chosen to pass OTDR "dead zone"

Test Results:

Optical Source/Power Meter

Total Attenuation
Attenuation (dB/km)

These results shall be provided in tabular form. The following shall be the criteria for the acceptance of the cable:

The test results shall show that the dB/km loss does not exceed +3% of the factory test or 1% of the cable's published production loss. However, no event shall exceed 0.10 dB. If any event is detected above 0.10 dB, the Contractor shall replace or repair the proposed fiber and/or fusion splice and connector including that event point.

The total dB loss of the cable, less events, shall not exceed the manufacturer's production specifications as follows: 0.5 dB/km at both 1310 and 1550 nm.

If the total loss exceeds these specifications, the Contractor shall replace or repair that cable run at the Contractor's expense, both labor and materials. Elevated attenuation due to exceeding the pulling tension during installation shall require the replacement of the cable run at the Contractor's expense, including labor and materials.

The Contractor shall label the destination of each trunk cable onto the cable in each handhole and termination panel.

Slack Storage of Fiber Optic Cables.

A part of this pay item, slack fiber shall be supplied as necessary to allow splicing the fiber optic cables in a controlled environment, such as a splicing van or tent. After splicing has been completed, the slack fiber shall be stored underground in handholes and in the traffic controller cabinets.

The amount of slack cable listed in Article 873.03 shall be revised as follows:

<u>Location</u>	<u>Length of Slack Cable (Ft.)</u>
Communications Vault	30.0
Double Handhole	30.0
Handhole	10.0
CCTV or Signal Cabinet	10.0
Junction Box	10.0
Equipment Cabinet	3.0

Basis of Payment: This work will be paid for at the contract unit price per foot for FIBER OPTIC CABLE 24 FIBERS, SINGLE MODE and shall be payment in full for all labor, equipment, and materials required to provide, install, terminate, splice, and test the fiber optic cable described above, complete.

FUSION SPLICING OF FIBER OPTIC CABLES

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 types of splices are identified. A mainline splice includes selected fibers from each cable run as shown in the plan sheets. 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:

Physical Requirements:

The closures shall provide ingress for up to four cables in a butt configuration.

The closure shall prevent the intrusion of water without the use of encapsulates.

The closure shall be capable of accommodating splice organizer trays that accept mechanical, or fusion splices. The splice closure shall have provisions for storing fiber splices in an orderly manner, mountings for splice organizer assemblies, and space for excess or un-spliced fiber. Splice organizers shall be re-enterable. The splice case shall be UL rated.

Closure re-entry and subsequent reassembly shall not require specialized tools or equipment. Further, these operations shall not require the use of additional parts.

The splice closure shall have provisions for controlling the bend radius of individual fibers to a minimum of 1.5 in (38 mm).

Factory Testing of Splice Closures:

Compression Test: The closure shall not deform more than 10% in its largest cross-sectional dimension when subjected to a uniformly distributed load of 1335 N at a temperature of 0°F and 100°F (-18°C and 38°C). The test shall be performed after stabilizing at the required temperature for a minimum of two hours. It shall consist of placing an assembled closure between two flat parallel surfaces, with the longest closure dimension parallel to the surfaces. The weight shall be placed on the upper surface for a minimum of 15 minutes. The measurement shall then be taken with weight in place.

Impact Test: The assembled closure shall be capable of withstanding an impact of 28 N-M at temperatures of 0°F and 100°F (-18°C and 38°C). The test shall be performed after stabilizing the closure at the required temperature for a minimum of 2 hours. The test fixture shall consist of 20 lb (9 kg) cylindrical steel impacting head with a 2 in (5 cm) spherical radius at the point where it contacts the closure. It shall be dropped from a height of 12 in (30 cm). The closure shall not exhibit any cracks or fractures to the housing that would preclude it from passing the water immersion test. There shall be no permanent deformation to the original diameter or characteristic vertical dimension by more than 5%.

Cable Gripping and Sealing Testing: The cable gripping and sealing hardware shall not cause an increase in fiber attenuation in excess of 0.05 dB/fiber @ 1550 nm when attached to the cables and the closure assembly. The test shall consist of measurements from six fibers, one from each buffer tube or channel, or randomly selected in the case of a single fiber bundle. The measurements shall be taken from the test fibers before and after assembly to determine the effects of the cable gripping and sealing hardware on the optical transmission of the fibers.

Vibration Test: The splice organizers shall securely hold the fiber splices and store the excess fiber. The fiber splice organizers and splice retaining hardware shall be tested per EIA Standard FOTP-II, Test Condition I. The individual fibers shall not show an increase in attenuation in excess of 0.1 dB/fiber.

Water Immersion Test: The closure shall be capable of preventing a 10 ft (3 m) water head from intruding into the splice compartment for a period of 7 days. Testing of the splice closure is to be accomplished by the placing of the closure into a pressure vessel and filling the vessel with tap water to cover the closure. Apply continuous pressure to the vessel to maintain a hydrostatic head equivalent to 10 ft (3 m) on the closure and cable. This process shall be continued for 30 days. Remove the closure and open to check for the presence of water. Any intrusion of water in the compartment containing the splices constitutes a failure.

Certification: It is the responsibility of the Contractor to insure that either the manufacturer, or an independent testing laboratory has performed all of the above tests, and the appropriate documentation has been submitted to the Department. Manufacturer certification is required for the model(s) of closure supplied. It is not necessary to subject each supplied closure to the actual tests described herein.

Construction Requirements.

The closure shall be installed according to the manufacturer's recommended guidelines. For all splices, the cables shall be fusion spliced.

The Contractor shall prepare the cables and fibers in accordance with the closure and cable manufacturers' installation practices. A copy of these practices shall be provided to the Engineer 21 days prior to splicing operations.

Using a fusion splicer, the Contractor shall optimize the alignment of the fibers and fuse them together. The Contractor shall recoat the fused fibers and install mechanical protection over them.

Upon completing all splicing operations for a cable span, the Contractor shall measure the mean bi-directional loss at each splice using an Optical Time Domain Reflectometer. This loss shall not exceed 0.1 dB.

The Contractor shall measure the end-to-end attenuation of each fiber optic link, from connector to connector, using an optical power meter and source. This loss shall be measured from both directions and shall not exceed 0.5 dB per installed kilometer of single mode cable. Measurements shall be made at both 1300 and 1550 nm for single mode cable. For multimode cable, power meter measurements shall be made at 850 and 1300 nm. The end-to-end attenuation shall not exceed 3.8 dB/installed kilometers at 850nm or 1.8 dB per installed kilometer at 1300nm for multimode fibers.

As directed by the Engineer, the Contractor at no additional cost to the Department shall replace any cable splice not satisfying the required objectives.

The Contractor shall secure the Splice Closure to the side of the splice facility using cable support brackets. All cables shall be properly dressed and secured to rails or racks within the handhole or traffic signal cabinet. No cables or enclosures will be permitted to lie on the floor of the splice facility. Cables that are spliced inside a building will be secured to the equipment racks or walls as appropriate and indicated on the Plans.

Basis of Payment. This work will not be paid for separately, but shall be included in the bid price for the fiber optic cable pay items.

TERMINATION OF FIBER OPTIC CABLES WITH FUSION SPLICED ST CONNECTORS

Description. The Contractor shall terminate a single mode fiber by fusion splicing a factory-formed ST connector (from a pre-formed fiber optic patch cable) onto a field fiber at the locations shown on the Plans.

Materials. The Contractor shall be responsible for ensuring that the pre-formed ST connector fiber is compatible with the field fiber that it will be fusion splice to.

The splice shall be protected with a protection sleeve/enclosure that will secure both cables and prevent cable movement.

The fiber optic patch cords shall meet or exceed the following specifications:

- High-quality 125um fiber optics
- 900um tight buffer construction
- Aramid yarn individually protected
- Duplex construction
- Stress relief boots color coded (Tx/Rx)
- ST connectors with high-grade zirconia ferrule
- Insertion Loss < 0.2 dB @ 1310 / 1550 nm
- Return Loss < -58 dB @ 1310 / 1550 nm
- Compliant with ANSI/TIA/EIA 568-B.3
- TIA/EIA-604, FOCIS-2

The Contractor shall submit a shop drawing of all proposed components to the Engineer for approval prior to commencing construction.

Construction Requirements.

The Contractor shall prepare the cables and fibers in accordance with the cable manufacturers' installation practices. A copy of these practices shall be provided to the Engineer 21 days prior to splicing operations.

Using a fusion splicer, the Contractor shall optimize the alignment of the fibers and fuse them together. The Contractor shall recoat the fused fibers and install mechanical protection over them.

Upon completing all splicing operations for a cable span, the Contractor shall measure the mean bi-directional loss at each connector using an Optical Time Domain Reflectometer. This loss shall not exceed the loss of the fusion splice (0.1 dB) plus the loss of the connector (typically 0.75 dB).

As directed by the Engineer, the Contractor at no additional cost to the Department shall replace any cable splice and/or connector not satisfying the required objectives.

Basis of Payment: This work will not be paid for separately, but shall be included in the bid price for the fiber optic cable pay items.

FIBER OPTIC ETHERNET DROP AND REPEAT SWITCH

The Contractor shall furnish a fiber optic drop and repeat switch (material only) complete with the accessories specified below and deliver it to the Department.

The fiber optic drop and repeat switch shall meet or exceed the following minimum specifications:

Approved Models: Antaira (Aaxeon) Technologies Model LNX-1802G-SFP-T (18-Port (16-port 10/100T + 2 10/100/1000T SFP ports Industrial Ethernet Switch, Wide Operating Temperature) or approved equal.

- Features:
- 16-Port 10/100TX + 2-Port 10/100/1000T/Mini-GBIC Combo
 - Store-and-Forward Switching Architecture
 - 7.2Gbps Back-Plane (Switching Fabric)
 - 1 Mbits Memory Buffer
 - 8K MAC Address Table
 - Wide-Range Redundant Power Design
 - Power Polarity Reserve Protect
 - Provides EFT Protection 3000 VDC for Power Line
 - Supports 6000 VDC Ethernet ESD Protection
 - IP30 Rugged Aluminum Case Design
 - 5-Year Warranty
- Standard:
- IEEE 802.3 10BaseT Ethernet
 - IEEE 802.3u 100BaseTX Fast Ethernet
 - IEEE 802.ab 1000BaseT
 - IEEE 802.z Gigabit Fiber
 - IEEE 802.3x Flow Control and Back-Pressure
- Protocol:
- CSMA/CD
- Switch Architecture:
- Back-Plane (Switching Fabric): 7.2Gbps
 - Packet Throughput Ability (Full-Duplex): 10.7Mpps @ 64bytes
- Transfer Rate:
- 14,880pps for Ethernet Port
 - 148,800pps for Fast Ethernet Port
 - 1,488,000pps for Gigabit Fiber Ethernet Port
- MAC Address:
- 8K MAC Address Table
- Jumbo Frame:
- 9 Kbytes
- Memory Buffer:
- 136 Kbits
- LED:
- Unit: Power 1, Power 2, Fault
 - 10/100 TX: Link/Activity, Full Duplex/Collision
 - Gigabit Copper: Link/Activity, Speed
 - SFP: Link/Activity
- Connector:
- 10/100T: 16 x RJ-45
 - 10/100/1000T Mini-GBIC Combo: 2 x RJ-45 + 2 x 100/1000 SFP Sockets
- Network Cable:
- 10BaseT: 2-pair UTP/STP Cat. 3, 4, 5 cable EIA/TIA-568 100-ohm (100m)
 - 100BaseTX: 2-pair UTP/STP Cat. 5 cable EIA/TIA-568 100-ohm (100m)

- Power Supply:
 - DC 12 ~ 48V, Redundant Power with Polarity Reverse Protect Function and Removable Terminal Block
- Power Consumption:
 - 9 Watts
- Reverse Polarity Protection:
 - Present
- Overload Current Protection:
 - Present
- Mechanical:
 - Casing: IP30 Metal Case
 - Dimension (W x H x D): 72 x 152 x 105 mm (2.83 x 4.13 x 5.98 in.)
 - Installation: DIN-Rail/Wall Mountable
- Weight:
 - Unit Weight: 2.2 lbs.
 - Shipping Weight: 3.3 lbs.
- Operation Temperature:
 - Wide Operating Temperature: -40° C to 80° C (-40° F to 176° F)
- Operation Humidity:
 - 5% to 95% (Non-condensing)
- Storage Temperature:
 - -40° C to 85° C
- EMI:
 - FCC Class A
 - CE EN6100-4-2/EN6100-4-3/EN6100-4-4/EN6100-4-5/EN6100-4-6
 - /EN6100-4-8/EN6100-4-11/EN6100-4-12/EN6100-6-2/EN6100-6-4
- Safety:
 - UL, cUL, CE EN60950-1
- Stability Testing:
 - Shock: IEC60068-2-27
 - Free Fall: IEC60068-2-32
 - Vibration: IEC60068-2-6
- Warranty:
 - 5-Year Warranty

The following items shall also be included with each switch:

- Power Supply – Qty. 1 (Aaxeon Model DR-45, 45 Watt, 12 Volt DC, Industrial Din-Rail Power Supply or Approved Equal)
- SFP Fiber Optic Module – Qty. 2 (Aaxeon SFP-S10-T, 1.25Gbps Ethernet SFP Transceiver, Single Mode 10KM / LC / 1310nm, -40°C~85°C)
- DIN Rail, 2 ft. section

- Fiber Optic Patch Cables – Qty. 1 (single mode fiber, 1 meter length, duplex, LC/ST connectors)

Basis of Payment: This work will be paid for at the contract unit price per each for FIBER OPTIC ETHERNET DROP AND REPEAT SWITCH which price shall be payment in full for all labor, materials, and equipment required to provide the fiber optic Ethernet drop and repeat switch and associated equipment and deliver it to the Department.

CAT 5 ETHERNET CABLE

This work shall be in accordance with Sections 873, 1076, and 1088 of the Standard Specifications except as modified herein.

This work shall consist of furnishing and installing an outdoor rated CAT5E cable in conduits, handholes, and poles.

The cable shall be rated for outdoor use and conform to the following specifications:

- Outdoor CMX Rated Jacket (climate/oil resistant jacket)
- UV Resistant Outer Jacket Material (PVC-UV, UV Stabilized)
- Outer Jacket Ripcord
- Designed For Outdoor Above- Ground or Conduit Duct applications
- Cat5E rated to 350MHz (great for 10/100 or even 1000mbps Gigabit Ethernet)
- Meets TIA/EIA 568b.2 Standard
- Shielded Twist Pair
- 4 Pairs, 8 Conductors
- 24AWG, Solid Core Copper
- UL 444 ANSI TIA/EIA-568.2 ISO/IEC 11801
- RoHS Compliant
- Shielded

Basis of Payment: This work will be paid for at the contract unit price per foot for CAT 5 ETHERNET CABLE, which shall be payment in full for all labor, equipment, and materials required to provide and install the cable described above, complete.

VIDEO SERVER

The Contractor shall furnish a video server (MATERIAL ONLY) and deliver it to the Department.

The video server shall meet or exceed the following minimum specifications:

Approved Models: Axis Communications Model Q7404 (4-Port H.264 video encoder) or approved equal.

- Video Compression:
- H.264 (MPEG-4 Part 10/AVC)
 - Motion JPEG

- Resolutions:
- NTSC: 720x480 to 176x120
 - PAL: 720x576 to 176x144
- Frame rate:
- H.264 Frame rate: 30/25 (NTSC/PAL) fps in all resolutions
 - Motion JPEG Frame rate: 30/25 (NTSC/PAL) fps in all resolutions
- Video streaming:
- Multiple, individually configurable streams per channel in H.264 and/or Motion JPEG: 3 simultaneous streams in max. resolution
 - at 30/25 fps from each channel; more streams if identical or limited in frame rate/resolution
 - Controllable frame rate and bandwidth
 - VBR/CBR H.264
- Image settings:
- Compression, color, brightness, contrast
 - Rotation: 90°, 180°, 270°
 - Aspect ratio correction
 - Mirroring of images
 - Text and image overlay
 - Privacy mask
 - Enhanced deinterlace filter
- Audio streaming:
- Two way, half-duplex on Channel 1
- Audio compression:
- AAC-LC 8 kHz 32 kbit/s, 16 kHz 64 kbit/s
 - G.711 PCM 8 kHz 64 kbit/s
 - G.726 ADPCM 8 kHz 32 or 24 kbit/s
- Audio input/output:
- External microphone input or line input
 - Line level output
- Security:
- Password protection, IP address filtering, HTTPS* encryption,
 - IEEE 802.1X* network access control, digest authentication,
 - user access log
- Supported protocols:
- IPv4/v6, HTTP, HTTPS*, IEEE 802.1X*, QoS layer 3 DiffServ, FTP, SMTP, Bonjour, UPnP, SNMPv1/v2c/v3(MIB-II), DNS, DynDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP, SOCKS
- Application Programming Interface:
- Open API for software integration, including VAPIX® from Axis Communications available at www.axis.com

- Intelligent video:
- Video motion detection, active tampering alarm, audio detection
- Alarm triggers:
- Intelligent video, external inputs, video loss
- Alarm events:
- File upload via FTP, HTTP and email
 - Notification via email, HTTP and TCP
 - External output activation
 - PTZ presets
- Video buffer:
- 64 MB pre- and post-alarm per channel
- Pan/Tilt/Zoom:
- Wide range of analog PTZ cameras supported (drivers available for download at www.axis.com)
 - 100 presets, guard tour, PTZ control queue
 - Supports Windows compatible joysticks
- Casing:
- Metal casing. Standalone or wall mount
- Processor and memory:
- 4x ARTPEC-3, 4x 128 MB RAM, 4x 128 MB Flash
- Power:
- 8-20 V DC, max. 16.1 W
- Connectors:
- 4 analog composite video BNC inputs, NTSC/PAL auto-sensing
 - RJ-45 10BASE-T/100BASE-TX/1000BASE-T
 - DC terminal block: power in 8-20 V DC, max. 16.1 W
 - 4 I/O terminal blocks with 2 configurable inputs/outputs per channel
 - 3.5 mm mic/line in, 3.5 mm line out
 - 4 RS-485/RS-422 serial ports
- Operating conditions
- 0-45 °C (32-113 °F)
 - Humidity 20-80% RH (non-condensing)
- Approvals:
- EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 55024, EN 61000-6-1, EN 61000-6-2, FCC Part 15 Subpart B Class B, ICES-003 Class B, VCCI Class B, C-tick AS/NZS CISPR 22, EN 60950-1
 - Power supply PS-P: EN 60950-1, UL, CSA
- Weight:
- 796 g (1.75 lb.)
- Included accessories:
- Power supply, mounting and connector kits, Installation Guide, CD with installation and management tools, software and User's Manual
 - 4 Windows decoder user licenses

Basis of Payment: This work will be paid for at the contract unit price per each for VIDEO SERVER which price shall be payment in full for all labor, materials, and equipment required to provide the video server described above and deliver it to the Department.

DATA NETWORK PORT ADAPTER

The Contractor shall furnish a data network port adapter complete with the accessories specified below and deliver it to the Department.

The data network port adapter shall meet or exceed the following minimum specifications:

Approved Models: MOXA Model N-Port 5210-T (2 Port RS-232 Serial Device Server Extended Operating Temperature) or approved equal.

- | | |
|----------------------------------|--|
| LAN: | <ul style="list-style-type: none">• Ethernet: 10/100 Mbps, RJ45, IEEE 802.3• Protection: Built-in 1.5 KV magnetic isolation• Number of Ports 1• Connector(s) 8-pin RJ45 |
| Serial Interface: | <ul style="list-style-type: none">• Interface: RS-232• Number of Ports: 2• Port Type: 8-Pin RJ45• Signals: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND• Serial Line Protection: 15 KV ESD for all signals• Power Line Protection: 4 KV Burst (EFT), 2 KV Surge (Power) |
| Serial Communication Parameters: | <ul style="list-style-type: none">• Parity: None, Even, Odd, Space, Mark• Data Bits: 5, 6, 7, 8• Stop Bit: 1, 1.5, 2• Flow Control: RTS/CTS, XON/XOFF, DTR/DSR• Transmission Speed: 110 bps to 230.4 Kbps (Bi-Directional Data Transmission) |
| Software Features: | <ul style="list-style-type: none">• Protocols: ICMP, IP, TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP, HTTP, SMTP, SNTF• Real COM/TTY Drivers: Windows 95/98/ME/NT/2000/XP/2003 Real COM drivers• Configuration: Web Browser, Serial/Telnet Console, or Windows Utility• The data network port adaptor shall include software that can be installed on a workstation to provide access to all adapters through the use of software selectable and assignable virtual communication ports (minimum of 128 ports) on the host computer. |

- Electrical:
- 120 VAC (internal or external power supply) and self-setting over-current protection shall be included
 - Input Voltage 12 to 48 VDC
 - Power Consumption 305 mA @ 12 V max.
 - Power Line Protection 1 KV burst (EN61000-4-4: EFT/B), 0.5 KV surge (EN61000-4-5)
- Physical Characteristics:
- Enclosure Aluminum (1 mm), providing IP30 protection
 - Weight 320 g
 - Dimensions Without ears: 67 x 100.4 x 22 mm (2.64 x 3.95 x 0.87 in)
 - With ears: 90 x 100.4 x 22 mm (3.54 x 3.95 x 0.87 in)
- Environmental:
- Operating Temperature: -40 to 167 degrees F
 - Operating Humidity 5 to 95% RH
 - Storage Temperature -20 to 85°C (-40 to 185°F)
- Other:
- Both local and remote configuration and software upgrade capability
 - Password protection for security

Basis of Payment: This work will be paid for at the contract unit price each for DATA NETWORK PORT ADAPTER, which shall be payment in full for all labor, materials, and equipment required to furnish the equipment described above and deliver it to the Department.

COMPUTER WORKSTATION

The Contractor shall furnish a computer workstation (material only) and deliver it to the Department.

The workstation shall be a HP ProDesk 400 G1 Microtower Desktop PC or approved equal that meets or exceeds the following minimum specifications:

- Form Factor: Microtower
- Operating System: Windows 7 Professional 64 bit (with latest service pack)
- Hard disk: 1 TB Serial ATA, 3.5", 6.0 Gb/s, (7200 rpm) or better.

- Motherboard:
 - A single Intel Core i7-4770 processor (3.4 GHz CPU with 8 MB cache, 4 cores, 8 threads) shall be provided.
 - Serial ATA 3.0 controller, 6.0 Gb/s, four channel
 - The following ports shall be provided:
 - PS/2 keyboard connector
 - PS/2 mouse connector
 - RJ-45 10/100/1000 NIC connector
 - Two USB 3.0 ports
 - Six USB 2.0 ports
 - 1/8-inch Audio line-in miniature audio jack
 - 1/8-inch Audio line-out miniature audio jack
 - 1.8-inch Audio microphone-in miniature audio jack
 - 1/8-inch Audio headphone-out miniature audio jack
 - VGA Video port
 - DVI-D Video port
 - One full height PCI Express x16 Graphics Slot
 - Three full height PCI Express x 1
 - Drive bays: one external 5.25" half-height drive bay, one external 3.5" drive bay, two internal 3.5" drive bays
- Memory: Minimum of 8 GB (1x8GB DIMM) of 1600 MHz dual channel DDR3-1600 RAM memory (expandable to 16 GB min). At least one memory bank shall remain open for future expansion. A total of two slots shall be provided.
- Optical Drive: 16X double-layer multi-format DVD±/R±/RW/CD-R/RW (Super-multi Drive), SATA, with software
- Video Card: PCIe x 16 2.0 GB SDRAM RAM Video card with Dual Monitor Support (includes adapters for DVI-D monitor connections) (NVIDIA GeForce GT630 or equivalent)
- Pointing Device: A 3-button, USB laser wheel mouse shall be supplied
- Network Interface: The workstation shall be supplied with an Integrated Network Interface Card (NIC) supporting 10/100/1000 MB/s and using 32-bit PCI bus-mastering technology. The card shall have a UTP (RJ-45) connector. The card shall be compliant with PCI local bus specification 2.0 and IEEE 802.3 for Ethernet.
- Warranty Three-year on-site parts and labor including 24/7 telephone technical support
- Recovery Media Driver, Application Software, and Operating System Installation and/or recovery media (CD or DVD) shall be included

- Wireless Keyboard One 2.4 GHz wireless keyboard with integrated touch pad shall be furnished (Logitech – K400 or equivalent)

Basis of Payment: This work will be paid for at the contract unit price per each for COMPUTER WORKSTATION which price shall be payment in full for all labor, materials, and equipment required to furnish the computer workstation and accessories described above and deliver it to the Department.

LAPTOP COMPUTER

The Contractor shall furnish a laptop computer and deliver it to the Department.

The laptop computer shall be a HP Compaq ProBook 450 G1 or approved equal that meets or exceeds the following minimum specifications:

- Operating System: Windows 7 Professional Edition (64 bit with latest service pack)
- Hard disk: 500 GB Serial ATA (5400 rpm) or better.
- Processor: A single Intel Core i7-4702MQ Quad Core Processor (2.20 GHz w/ Turbo, 1333 FSB, 6 MB L3 Cache) shall be provided.
- Ports: The following ports and devices shall be provided:
 - One 9-pin serial connectors; 16550-compatible (or USB Adapter)
 - RJ45 10/100/1000 NIC connector
 - Two USB 3.0 ports
 - 1/8-inch Audio line-in miniature audio jack
 - 1/8-inch Audio line-out miniature audio jack
 - 1/8-inch Audio microphone-in miniature audio jack
 - 1/8-inch Audio headphone-out miniature audio jack
 - VGA/External monitor
 - HDMI Port
 - Express Card Slot
 - Media Card Reader
- Memory: Minimum of 4.0 GB (2 DIMM) of 1600 MHz DDR3 PC3 SDRAM memory (expandable to 8.0 GB min)
- Optical Drive: 8x Double-Layer Multi-Format DVD±/±RW SuperMulti drive with software
- Video: Intel HD Graphics 4600
- Pointing Device: Touchpad and one USB 3-button, laser wheel mouse shall be supplied.

- Keyboard: A full function enhanced keyboard with a minimum of 82 keys shall be supplied.
- Display: 15.6" Diagonal LED-backlit HD display, anti-glare (1366 x 768 resolution)
- Network Interface: The laptop shall be equipped with an Integrated Network Interface Card (NIC) supporting 10/100/1000 MB/s (RJ-45) and an integrated Intel 802.11a/b/g/n wireless networking card.
- Bluetooth Adapter: The laptop shall be equipped with a Bluetooth 4.0 adapter.
- Battery Capacity: 47 WHr Lithium-Ion Battery
- Carry Case: A Deluxe Padded Leather Carrying Case shall be provided.
- Recovery Media: Driver, Application Software, and Operating System Installation and/or recovery media (CD or DVD) shall be included
- Software: Warranty: Three-year (parts, labor, and material) Next Business Day including 24/7 telephone technical support.

Basis of Payment: This work will be paid for at the contract unit price per each for LAPTOP COMPUTER which price shall be payment in full for all labor, materials, and equipment required to provide the laptop computer and accessories, install it at the locations specified on the plan sheets, load all required software on it, and configure it for use with the ATMS software.

CLOSED CIRCUIT TELEVISION CABINET

Description. This work consists of furnishing and installing a pole mounted equipment cabinet and peripheral equipment at locations indicated in the Plans. These cabinets will be utilized to house critical electrical, optical, and communications equipment as defined in other contract pay items.

Materials. Materials shall be in accordance to the following specifications.

General. The equipment cabinet shall conform to the details shown on the plan sheet. Equipment cabinets shall be mounted and anchored on the poles and structures at locations indicated in the Plans. In addition, all mounting hardware and brackets required to install the equipment cabinet on the pole shall be stainless steel and provided by the Contractor. The mounting heights and pole diameters shall be as specified by the Engineer.

The cabinet shall be a NEMA 3R Single Door Enclosure, constructed from .125" thick aluminum, with nominal outside dimensions of 18" (H) x 14" (W) x 10" (D). The cabinet shall have a natural finish.

The cabinet shall be furnished with a slam lock, neoprene door gasket, vent slots, continuous stainless steel door hinge, and all stainless steel hardware. The cabinet shall also have a Corbin #2 dead bolt lock or skeleton key. The key shall be removable in the lock position only. Two keys shall be supplied for each lock, and all equipment cabinet locks shall be keyed the same.

All cables shall be labeled utilizing marking tags.

The cabinet shall be equipped with a main power panel as shown on the cabinet plan detail sheet. The power panel shall include one 15A main breaker, power terminal blocks, and one six outlet power strip with integral surge protection. The power panel shall include a plexi-glass safety shield that covers the power panel.

Power Strip

The cabinet power strip shall have a minimum of six outlets and integral surge suppression that meets or exceeds the following minimum specifications:

- Let Through Voltage: <85 Volts
- Operating Voltage: 120VAC, 50/60H
- UL Suppressed Voltage Rating: 330V
- Energy Rating: 320J
- Peak Current NM/CM: 13k Amps NM, 13k Amps CM
- EMI/RFI Noise Filtration: >25-60dB

The power strip shall be wired directly to the protected power terminals on the cabinet surge arrester.

Construction Requirements.

The Contractor shall prepare and submit shop drawings that detail all of the components to be supplied, along with associated mounting hardware for the pole mounted equipment cabinet. The shop drawings must be approved by the Engineer prior installation of the completed cabinet in the field.

The Engineer reserves the right to inspect and/or factory test any completed cabinet assemblies prior to shipment of the material to the project site. Any deviations from these specifications that are identified during such testing shall be corrected prior to delivery of the assembly to the project site.

The AC power service to be run to the equipment cabinet shall be terminated. In addition, the cabinet shall be connected to an adequate ground following the Standard Specifications.

The Contractor shall terminate any inbound and outbound fiber optic, telephone, or wireless antenna leads in the equipment cabinet as shown in the Plans. The Contractor shall terminate any twisted pair communication cable on the termination panel in the equipment cabinet as shown in the Plans. Lugs shall be installed at the end of each conductor suitable for connection to the barrier terminal blocks.

Method of Measurement. This item shall be measured for payment by each pole mounted equipment cabinet in-place.

Basis of Payment. This work shall be paid for at the contract unit price each for CLOSED CIRCUIT TELEVISION CABINET, and shall include all equipment, material and labor detailed in the specifications and as shown on the Plans.

CIRCUIT BREAKER, 1 POLE, 20 AMP, 120V IN EXISTING CABINET

This work shall consist of furnishing a single pole, rated 20 A circuit breaker that is mounted on an aluminum plate and is installed in a small panel board in an existing cabinet or on the wall of a building at the locations shown on the Plans or as designated by the Engineer. All circuit breakers shall have a molded case. This work shall be in accordance with the requirements set forth under Section 805 and 1086 and Article 1068.01(e)(3) in particular of the Standard Specifications.

Wall mounted breakers shall include an enclosure to house the breaker.

Basis of Payment: This work will be paid for at the contract unit price of each for CIRCUIT BREAKER, 1-POLE, 20 AMP, 120V IN EXISTING CABINET, which shall be payment in full for all labor, equipment, and materials required to provide the circuit breaker installation described above, complete.

NETWORK SECURITY APPLIANCE

The Contractor shall furnish a network security appliance and deliver it to the Department (material only).

The firewall shall be a Juniper SSG20-SH (with 256 MB of DRAM, rack mounting kit, and 3 Year Remote Office Unified Threat Management Subscription – includes Antivirus, IPS (Deep Inspection), and Web Filtering or approved equal.

The firewall shall be a rack mounted security appliance that meets or exceeds the following minimum specifications:

Maximum Performance and Capacity:

Firewall throughput (large packets): 160 Mbps; Firewall throughput (IMIX)(2): 90 Mbps;
Firewall packets per second (64 byte): 30,000 PPS; Advanced Encryption Standard:
(AES)256+SHA-1 VPN throughput 40 Mbps, 3DES encryption +SHA-1 VPN throughput
40 Mbps; Maximum concurrent sessions: 8,000; New sessions/second: 2,800; Maximum
security policies: 200;
Maximum users supported: Unrestricted; 128 MB DRAM

Network Connectivity:

Fixed I/O: 7x10/100, 2x10/100/1000; Physical Interface Module (PIM) slots: 2; Modular
WAN/LAN interface options: (PIMs/uPIMs)

Firewall:

Network attack detection; DoS and DDoS protection; TCP reassembly for fragmented packet protection; Brute force attack mitigation; SYN cookie protection; Zone-based IP spoofing; Malformed packet protection

Unified Threat Management:

IPS (Deep Inspection firewall); Protocol anomaly detection; Stateful protocol signatures; IPS/DI attack pattern obfuscation; Antivirus Signature database: 200,000+; Protocols scanned: POP3, HTTP, SMTP, IMAP, FTP, IM; Integrated Anti-spyware; Integrated Anti-adware; Anti-keylogger; Instant message AV; Anti-spam; Integrated URL filtering; External URL filtering

Voice over IP (VoIP) Security:

H.323. Application-level gateway (ALG); SIP ALG; MGCP ALG; SCCP ALG; Network Address Translation (NAT) for VoIP protocols

IPSec VPN:

Concurrent VPN tunnels: 25; Tunnel interfaces: 10; DES encryption (56-bit); 3DES encryption (168-bit) and AES (256-bit); MD-5 and SHA-1 authentication; Manual key; Internet Key Exchange (IKE); public key infrastructure (PKI) (X.509); Perfect forward secrecy (DH Groups) 1,2,5; Prevent replay attack; Remote access VPN; Layer 2 Tunneling Protocol (L2TP) within IPSec; IPSec Network Address Translation (NAT) traversal; Auto-Connect VPN; Redundant VPN gateways

User Authentication and Access Control:

Built-in (internal) database (100 user limit); Third-party user authentication: RADIUS, RSA SecureID, LDAP; RADIUS Accounting (start/stop); XAUTH VPN authentication; Web-based authentication; 802.1X authentication; Unified Access Control (UAC) enforcement point

PKI Support:

PKI certificate requests (PKCS 7 and PKCS 10); Automated certificate enrollment (SCEP); Online Certificate Status Protocol (OCSP); Certificate Authorities supported: Verisign, Entrust, Microsoft, RSA Keon, iPlanet (Netscape) Baltimore, DOD PKI, Self signed certificates

Virtualization:

Maximum number of security zones: 8; Maximum number of virtual routers: 3; Maximum number of VLANs 10

Routing:

BGP instances: 3; BGP peers: 10; BGP routes: 1,024; OSPF instances: 3; OSPF routes: 1,024; RIPv1/v2 instances: 16; RIP v2 routes: 1,024; Static routes: 1,024; Source-based routing; Policy-based routing; Equal-cost multipath (ECMP); Multicast; Reverse Forwarding Path (RFP); Internet Group Management Protocol (IGMP) (v1, v2); IGMP Proxy; Protocol Independent Multicast (PIM) single mode; PIM source-specific multicast; Multicast inside IPsec tunnel, ICMP Router Discovery Protocol (IRDP)

Encapsulations:

Dual Stack IPv4/IPv6 firewall and VPN; IPv4 to/from IPv6 translations and encapsulations, Syn-Cookie and Syn-Proxy DoS Attack Detection; SIP, RTSP, Sun-RPC, and MS-RPC ALG's, RIPng; BGP; Transparent Mode, NSRP, DHCPv6 Relay

Mode of Operation:

Layer 2 (transparent) mode; Layer 3 (route and/or NAT) mode

Address Translation:

Network Address Translation (NAT); Port Address Translation (PAT); Policy-based NAT/PAT; (L2 and L3 mode); Mapped IP (MIP) (L2 mode) 300; Virtual IP (VIP) (L3 mode) 4; MIP/VIP Grouping (L3 mode), Dual Untrust, Bridge Groups

IP Address Assignment:

Static; Dynamic Host Configuration Protocol (DHCP); Point-to-Point Protocol over Ethernet (PPPoE) client ; Internal DHCP server; DHCP relay

Traffic Management Quality of Service (QoS):

Guaranteed bandwidth (per policy); Maximum bandwidth (per policy); Ingress traffic policing; Priority-bandwidth utilization; Differentiated Services marking (per policy)

High Availability (HA):

Active/active (L3 mode); Active/passive (Transparent and L3 mode); Configuration synchronization; Session synchronization for firewall and VPN; Session failover for routing change; VRRP; Device failure detection; Link failure detection; Authentication for new HA members; Encryption of HA traffic

System Management:

WebUI (HTTP and HTTPS); Command line interface (console); Command line interface (telnet); Command line interface (SSH - v1.5 and v2.0 compatible); NetScreen-Security Manager; All management via VPN tunnel on any interface, Rapid Deployment

Administration:

Local administrator database size: 20; External administrator database support: RADIUS, RSA SecureID, LDAP; Restricted administrative networks: 6; Root Admin, Admin, and Read Only user levels; Software upgrades TFTP, WebUI, NSM, SCP, USB, Configuration roll-back

Logging/Monitoring:

System log (multiple servers – up to 4 servers); Email (2 addresses); NetIQ WebTrends; SNMP (v2); SNMP full custom MIB; Traceroute; VPN tunnel monitor

External Flash:

Additional log storage (USB 1.1); Event logs and alarms; System configuration script; ScreenOS Software

Dimensions and Power

11.6 x 1.8 x 7.4 in, 3.3 lb, Rack Mountable, 100-240VAC

Mean Time Between Failures (MTBF)

35.8 Years

Additional Software Options to be Furnished with Firewall:

Remote Office Bundle – Three Year Subscription (antivirus, web filtering, and IPS subscription)

Basis of Payment: This work will be paid for at the contract unit price per each for NETWORK SECURITY APPLIANCE which price shall be payment in full for all labor, materials, and equipment required to furnish the network security appliance and accessories described above and deliver it to the Department.

ETHERNET SWITCH (MATERIAL ONLY)

The Contractor shall furnish an Ethernet switch and deliver it to the Department. The Ethernet switch shall be an Extreme Networks Summit X460-24t equipped Extreme Advanced Core software license that meets the following specifications:

General Specifications

Switching Throughput:

- Bandwidth, Gbps: non-blocking
- 176 Gbps Aggregated Switch Fabric Bandwidth Capacity
- Less than 4ms latency
- 128 load sharing trunks, up to 8 members per trunk

Forwarding Rate:

- 130.9 Mpps million packets/second
- Max Packet Size: 9216 byte (Jumbo Frame)

Ports:

- 24 RJ-45 10/100/1000BASE-T with auto-speed and auto polarity
- 4 SFP (mini-GBIC)
- 1 Serial Port (control port)
- 1 10/100BASE-T out-of-band management port
- Maximum Active GBE Ports : 28
- Maximum Active 10GBE Ports : 6

Expansion:

- Stack Port: Yes
- Expansion Slots: 6
- Expansion Slot Type: SFP, Stacking Module

General:

- Number of QoS queues/port: 8
- Number of VLANs: 4096
- VLAN Types: Port, IEEE 802.1Q, and MAC-based Number of ACL Rules/lines: 3072 (can be applied to either ingress or egress)
- Less than 4 mms latency (64-byte)
- 128 Load Sharing Trunks, up to 8 Members per Trunk

Forwarding Tables:

- Layer 2/MAC addresses: 32K
- Layer 3 IPv4 LPM Entries: 12K
- Layer 3 IPv6 LPM Entries: 6K
- Layer 3 Interfaces: 512
- OSPF External Routes:>100K

CPU and Memory:

- 64-bit MIPS Processor, 600 MHz clock
- 1GB ECC DRAM
- 1GB Compact Flash
- USB port for external USB flash

Rate Limiting:

- 4.096 ingress bandwidth meters
- Ingress bandwidth policing/rate limiting: packets are classified after Ingress into flows using ACLs and a rate limiter is assigned to a given flow
- 8 QoS egress/queues per port
- Rate Limiting Granularity: 8Kbps

Physical Specifications:

- Height: 1RU 1.73 inches/4.4 cm (Nominal)
- Width: 17.4 inches/44.1 cm (Nominal)
- Depth: 17.0 inches/43.2 cm (Nominal)
- Weight: 12.8lbs/5.81kg
- Operating Temperature Range - 0°C to 45°C (32°F to 113°F)
- Storage Temperature Range - Degrees/Degrees Celsius: -40°C to +70°C (-40°F to 158°F)
- Humidity Range: 10-95% (RH) non-condensing
- Altitude: 0 – 3,000 meters (9850 feet)
- Shock (half sine): 30 m/s² (3G), 11 ms, 60 shocks
- Random Vibration: 3 – 500 Hz at 1.5G rms

Power:

- Min Voltage/Associated Current: 85VAC/4A
- Max Voltage/Associated Current: 264VAC/2A
- Heat Dissipation, 105 Watts Minimum (359 BTU/hr), 129 Watts Maximum (443BTU/hr)

Acoustic:

- 43.3 dB Fan Noise, 63.0 dB Acoustic Noise

Management Features:

- Serial management port on the front panel for ease of installation
- Extensive management through SNMP, RMON and CLI
- Secure remote management with strong encryption using SSH2
- Port mirroring

Software Features

(Refer to section titled ETHERNET SWITCH SOFTWARE SUPPORTED PROTOCOLS AND STANDARDS for a complete listing of required protocol and standard support)

QOS:

- 8 priority queues
- 802.1p priority marking
- Layer 2 classification
- Layer 3 DiffServ

Routing:

- RIP v1/v2
- OSPF v2

Multicast:

- IGMP v1/v2/v3
- IGMP snooping
- PIM-SM
- Ethernet Automatic Protection Switching edge (EAPS-edge)
- Network Address Translation
- Multicast VLAN registration

Security:

- Network Login
- 802.1x
- Web-based Network Login
- SSH2 server
- Layer 2/3/4 ACLs
- DoS
- RADIUS support
- TACACS+ support
- MAC Address Security (lockdown + limit)
- IP Address Security: Disable ARP learning
- Management Security: SNMPv3, SSH2-client, SCP/SFTP
- DoS Protect
- IP Address Security: DHCP Option 82

Resiliency:

- Software Redundant Port
- ESRP (in Advanced Edge license)
- VRRP (in Advanced Edge license)
- Loop detection via Lbdetect and ELRP CLIEAPS
- STP: 802.1w Rapid Spanning Tree
- STP: Compatibility mode for PVST+, EMISTP (1 domain per port)

Extensibility and Scalability:

- Static Multicast Routes
- Multicast: static IGMP membership
- LACP for edge deployment (server connectivity)
- Stacking

Environmental Specifications:

- EN/ETSI 300 019-2-1 v2.1.2 – Class 1.2 Storage
- EN/ETSI 300 019-2-2 v2.1.2 – Class 2.3 Transportation
- EN/ETSI 300 019-2-3 v2.1.2 – Class 3.1e Operational
- EN/ETSI 300 753 (1997-10) – Acoustic Noise
- ASTM D3580 Random Vibration Unpackaged 1.5G

Telecom Standards:

- ETSI EN 300 386:2001 (EMC Telecommunications)
- ETSI EN 300 019 (Environmental for Telecommunications)
- NEBS Level 3 compliant to portions of GR-1089 Issue 4 and GR-63 Issue 3 as defined in SR3580 with exception to filter requirement
- MEF 9 compliant
- MEF 14 compliant
- IEEE 802.3 Media Access Standards
- IEEE 802.3ab 1000BASE-T
- IEEE 802.3z 1000BASE-X
- IEEE 802.3ae 10GBASE-X
- IEEE 802.3at PoE Plus

Warranty:

- Limited Lifetime with Express Advanced Hardware Replacement

Basis of Payment: This work will be paid for at the contract unit price per each for ETHERNET SWITCH (MATERIAL ONLY) which price shall be payment in full for all labor, materials, and equipment required to furnish the Ethernet switch described above complete with software, and accessories and deliver it to the Department.

ETHERNET SWITCH SOFTWARE SUPPORTED PROTOCOLS AND STANDARDS

The Ethernet switch software shall support the following protocols and standards:

Switching

- IEEE 802.1D – 1998 Spanning Tree Protocol (STP)
- IEEE 802.1D – 2004 Spanning Tree Protocol (STP and RSTP)
- IEEE 802.1w – 2001 Rapid Reconfiguration for STP, RSTP
- IEEE 802.1Q – 2003 (formerly IEEE 802.1s) Multiple Instances of STP, MSTP
- EMISTP, Extreme Multiple Instances of Spanning Tree Protocol

- PVST+, Per VLAN STP (802.1Q interoperable) Draft-ietf-bridge-rstpmib-03.txt – Definitions of Managed Objects for Bridges with Rapid Spanning Tree Protocol
- Extreme Standby Router Protocol (ESRP)
- IEEE 802.1Q – 1998 Virtual Bridged Local Area Networks
- IEEE 802.3ad Static load sharing configuration and LACP based dynamic configuration
- Software Redundant Ports
- Multi-Switch Link Aggregation Groups (M-LAG)
- IEEE 802.1AB – LLDP Link Layer Discovery Protocol
- LLDP Media Endpoint Discovery (LLDP-MED), ANSI/TIA-1057, draft 08
- Extreme Discovery Protocol (EDP)
- Cisco Discovery Protocol (CDP) v1
- Extreme Loop Recovery Protocol (ELRP)
- Extreme Link State Monitoring (ELSM)
- IEEE 802.1ag L2 Ping and traceroute, Connectivity Fault Management
- ITU-T Y.1731 Frame delay measurements
- RFC 3619 Ethernet Automatic Protection Switching (EAPS) Version 1 and Version 2
- ITU G.8032 Ethernet Ring Protection Switching

Management and Traffic Analysis

- RFC 2030 SNTP, Simple Network Time Protocol v4
- RFC 5905 1 – Network Time Protocol Version 4: Protocol and Algorithms Specification
- RFC 854 Telnet client and server
- RFC 783 TFTP Protocol (revision 2)
- RFC 951, 1542 BootP
- RFC 2131 BOOTP/DHCP relay agent and DHCP server
- RFC 3315, Dynamic Host Configuration Protocol for IPv6 (DHCPv6), Relay Functions Only with secondary IP address
- RFC 1591 DNS (client operation)
- RFC 6106, IPv6 Router Advertisement Options for DNS Configuration
- RFC 1155 Structure of Management Information (SMIv1)
- RFC 1157 SNMPv1
- RFC 1212, RFC 1213, RFC 1215 MIB-II, Ethernet-Like MIB & TRAPs
- RFC 1573 Evolution of Interface
- RFC 1650 Ethernet-Like MIB (update of RFC 1213 for SNMPv2)
- RFC 1901 to – 1908 SNMPv2c, SMIv2 and Revised MIB-II
- RFC 2576 Coexistence between SNMP Version 1, Version 2 and Version 3 of the Internet standard Network Management Framework
- RFC 2578 – 2580 SMIv2 (update to RFC 1902 – 1903)
- RFC 3410 – 3415 SNMPv3, user based security, encryption and authentication
- RFC 3416 – Protocol Operations for Version 2 of SNMP
- RFC 2418 – Management Information Base for SNMP
- RFC 3826 – The Advanced Encryption Standard (AES) Cipher Algorithm in the SNMP User-based Security Model
- IEEE 802.1AB LLDP Basic MIB, LLDP-EXT-DOT1-MIB, LLDP-EXT-DOT3-MIB
- RFC 1757 RMON 4 groups: Stats, History, Alarms and Events

- RFC 2021 RMON2 (probe configuration)
- RFC 2613 SMON MIB
- RFC 2925 Ping/Traceroute MIB
- RFC 2665 – Definitions of Managed Objects for the Ethernet-like Interface types
- RFC 2668 802.3 Medium Attachment Units (MAU) MIB
- draft-ietf-hubmib-maumib-v3-02.txt
- RFC 1643 Ethernet MIB
- RFC 1493 Bridge MIB
- RFC 2096 IPv4 Forwarding Table MIB
- RFC 2737 Entity MIB v2
- RFC 3621 PoE-MIB (PoE switches only)
- PIM MIB draft-ietf-pim-mib-v2-01.txt
- IEEE-8021-PAE-MIB
- IEEE-8021x-EXTENSIONS-MIB
- EAPS MIB supports get functions
- RFC 1657 Definitions of Managed Objects for BGPv4 using SNMPv2
- IEEE 802.1ag MIB
- Secure Shell (SSH-2) client and server
- Secure Copy (SCP-2) client and server
- Secure FTP (SFTP) server sFlow version 5
- Configuration logging
- Multiple Images, Multiple Configs
- RFC 3164 BSD Syslog Protocol with Multiple Syslog Servers
- 999 Local Messages (criticals stored across reboots)
- Extreme Networks vendor MIBs (includes statistics, FDB, PoE, CPU, Memory, ACL, CLEAR-Flow etc MIBs)
- XML APIs over Telnet/SSH and HTTP/HTTPS
- Web-based device management interface – ExtremeXOS ScreenPlay
- IP Route Compression
- IPv6 Router Advertisement Filtering
- Stacking – SummitStack
- Stacking – SummitStack-V
- Stacking – SummitStack-V80

Power Over Ethernet (POE)

- RFC 3621 Power over Ethernet MIB
- IEEE 802.3af standard

Security, Switch, and Network Protection

- Secure Shell (SSH-2), Secure Copy (SCP-2) and SFTP client/server with encryption/authentication
- SNMPv3 user based security, with encryption/authentication
- RFC 1492 TACACS+
- RFC 2138 RADIUS Authentication
- RFC 2139 RADIUS Accounting
- RFC 3579 RADIUS EAP support for 802.1x
- RADIUS Per-command Authentication

- Access Profiles on All Routing Protocols
- Network Login – 802.1x, Web and MAC-based mechanisms
- IEEE 802.1x – 2001 Port-Based Network Access Control for Network Login
- Multiple supplicants with multiple VLANs for Network Login (all modes)
- Fallback to local authentication database (MAC and Web-based methods)
- Guest VLAN for 802.1x
- RFC 1866 HTML – used for Web-based Network Login and ExtremeXOS ScreenPlay
- SSL/TLS transport – used for Web-based Network Login and ExtremeXOS ScreenPlay
- MAC Security – Lockdown and Limit
- IP Security – RFC 3046 DHCP Option 82 with port and VLAN ID
- IP Security – Trusted DHCP Server
- Layer 2/3/4 Access Control Lists (ACLs)
- RFC 2267 Network Ingress Filtering
- RPF (Unicast Reverse Path Forwarding) Control via ACLs
- Wire-speed ACLs
- Rate Limiting/Shaping by ACLs
- IP Broadcast Forwarding Control
- ICMP and IP-Option Response Control
- SYN attack protection
- CPU DoS Protection with traffic rate-limiting to management CPU

Security, Router Protection

- IP Security via Disable ARP Learning
- IP Security – Gratuitous ARP Protection
- IP Security – DHCP Secured ARP/ARP Validation
- Routing protocol MD5 authentication

Security Detection and Protection

- CLEAR-Flow, threshold-based alerts and actions
- Identity Manager

IP4 Host Services

- RFC 1122 Requirements for internal hosts – Communication Layers
- RFC 768 User Datagram Protocol (UDP)
- RFC 791 Internet Protocol (IP)
- RFC 792 Internet Control Message Protocol (ICMP)
- RFC 793 Transmission Control Protocol (TCP)
- RFC 826 Address Resolution Protocol (ARP)
- RFC 894 IP over Ethernet
- RFC 1027 Proxy ARP
- RFC 2068 HTTP server
- IGMP v1/v2/v3 Snooping with Configurable Router Registration Forwarding
- IGMP Filters
- PIM Snooping

- Static IGMP Membership
- Multicast VLAN Registration (MVR)

IPV4 Router Services

- Static Unicast Routes
- Static Multicast Routes
- RFC 1112 IGMP v1
- RFC 2236 IGMP v2
- RFC 3376 IGMP v3
- RFC 2933 IGMP MIB
- RFC 1812 Requirements for IP Version 4 Routers
- RFC 1519 An architecture for IP Address allocation with CIDR
- RFC 1256 IPv4 ICMP Router Discovery (IRDP)
- RFC 1058 RIP v1
- RFC 2453 RIP v2
- Static ECMP
- RFC 2096 IPv4 Forwarding Table MIB
- RFC 1724 RIPv2 MIB
- RFC 2338 Virtual Router Redundancy Protocol
- RFC 3768 VRRPv2
- RFC 2787 VRRP MIB
- RFC 2328 OSPF v2 (Edge-mode)
- OSPF ECMP
- OSPF MD5 Authentication
- RFC 1587 OSPF NSSA Option
- RFC 1765 OSPF Database Overflow
- RFC 2370 OSPF Opaque LSA Option
- RFC 3623 OSPF Graceful Restart
- RFC 1850 OSPFv2 MIB
- RFC 2362 Protocol Independent Multicast – Sparse Mode PIM-SM (Edge-mode)
- RFC 2934 Protocol Independent Multicast MIB
- RFC 3569, draft-ietf-ssm-arch-06.txt PIM-SSM PIM Source Specific Multicast
- draft-ietf-pim-mib-v2-o1.txt Mtrace, a “traceroute” facility for IP Multicast: draft-ietf-idmrtracroute-ipm-07
- Mrinfo, the multicast router information tool based on Appendix-B of draft-ietf-idmrdvmrp-v3-11

IPV6 Host Services

- RFC 3587, Global Unicast Address Format
- Ping over IPv6 transport
- Traceroute over IPv6 transport
- RFC 5095, Internet Protocol, Version 6 (IPv6) Specification
- RFC 4861, Neighbor Discovery for IP Version 6, (IPv6)
- RFC 2463, Internet Control Message Protocol (ICMPv6) for the IPv6 Specification
- RFC 2464, Transmission of IPv6 Packets over Ethernet Networks
- RFC 2465, IPv6 MIB, General Group and Textual Conventions

- RFC 2466, MIB for ICMPv6
- RFC 2462, IPv6 Stateless Address Auto configuration – Host Requirements
- RFC 1981, Path MTU Discovery for IPv6, August 1996 – Host Requirements
- RFC 3513, Internet Protocol Version 6 (IPv6) Addressing Architecture
- Telnet server over IPv6 transport
- SSH-2 server over IPv6 transport
- RFC 4193, Unique Local IPv6 Unicast Addresses
- RFC 5722, Handling of Overlapping IPv6

IPv6 Interworking and Migration

- RFC 2893, Configured Tunnels
- RFC 3056, 6to4

IPv6 Router Services

- RFC 2462, IPv6 Stateless Address Auto Configuration – Router Requirements
- RFC 1981, Path MTU Discovery for IPv6, August 1996 – Router Requirements
- RFC 2710, IPv6 Multicast Listener Discovery v1 (MLDv1) Protocol
- RFC 3810, IPv6 Multicast Listener Discovery v2 (MLDv2) Protocol
- RFC 4541, Considerations for Internet Group Management Protocol (IGMP) and Multicast
- Listener Discovery (MLD) Snooping Switches
- Static Unicast routes for IPv6
- RFC 6164, Using 127-Bit IPv6 Prefixes on Inter-Router Links
- RFC 2080, RIPng
- RFC 2740 OSPF v3 for IPv6 (Edge-mode)
- Static ECMP
- RFC 5798 Virtual Router Redundancy Protocol (VRRP) Version 3 for IPv4 and IPv6
- draft-ietf-vrrp-unified-mib-08.txt - Definitions of Managed Objects for VRRPv3

Core Protocols for Layer 2, IPV4, and IPV6

- EAPS multiple rings
- EAPsv2 Shared ports
- PIM-DM Draft IETF PIM Dense Mode draft-ietf-idmr-pim-dm-05.txt, draft-ietf-pim-dm-new-v2-04.txt
- Draft-ietf-idr-bgp4-mibv2-02.txt – Enhanced BGP-4 MIB
- draft-ietf-idr-restart-10.txt Graceful Restart Mechanism for BGP
- IOS 10589 OSI IS-IS Intra-Domain Routing Protocol (RFC 1142)
- Draft-ietf-isis-ipv6-06 Routing IPv6 with IS-IS
- Draft-ietf-isis-restart-02 Restart Signaling for IS-IS
- Draft-ietf-isis-wg-multi-topology-11 Multi Topology (MT) Routing in IS-IS
- RFC 1195 Use of OSI IS-IS for Routing in TCP/IP and Dual Environments (TCP/IP transport only)
- RFC 1657 BGP-4 MIB
- RFC 1745 BGP4/IDRP for IPOSPPF Interaction
- RFC 1771 Border Gateway Protocol 4
- RFC 1965 Autonomous System Confederations for BGP

- RFC 1997 BGP Communities Attribute
- RFC 2283 Multiprotocol Extensions for BGP-4
- RFC 2385 TCP MD5 Authentication for BGPv4
- RFC 2439 BGP Route Flap Damping
- RFC 2545 Use of BGP-4 Multiprotocol Extensions for IPv6 Inter-Domain Routing
- RFC 2740 OSPFv3, OSPF for IPv6
- RFC 2763 Dynamic Hostname Exchange Mechanism for IS-IS
- RFC 2858 Multiprotocol Extensions for BGP-4 (Obsoletes RFC 2283)
- RFC 2796 BGP Route Reflection (supersedes RFC 1966)
- RFC 2918 Route Refresh Capability for BGP-4
- RFC 2966 Domain-wide Prefix Distribution with Two-Level IS-IS
- RFC 2973 IS-IS Mesh Groups
- RFC 3107 Carrying Label Information in BGP-4
- RFC 3373 Three-way Handshake for IS-IS Point-to-Point Adjacencies
- RFC 3392 Capabilities Advertisement with BGP-4
- RFC 3446 Anycast RP using PIM and MSDP
- RFC 3618 Multicast Source Discovery Protocol (MSDP)
- RFC 4271 A Border Gateway Protocol 4 (BGP-4) (Obsoletes RFC 1771)
- RFC 4273 Definitions of Managed Objects for the Fourth Version of the Border Gateway Protocol (BGP-4) using SMIv2
- RFC 4360 BGP Extended Communities Attribute
- RFC 4456 BGP Route Reflection: An alternative to full mesh internal BGP (Obsoletes RFC 1966)
- RFC 4486 Subcodes for BGP Cease Notification message
- RFC 4274 Graceful Restart Mechanism for BGP (Obsoletes draft-ietf-idr-restart-10.txt)
- RFC 4760 Multiprotocol extensions for BGP-4
- RFC 4893 BGP Support for Four-octet AS Number Space
- RFC 5065 Autonomous System Confederations for BGP
- RFC 5396 Textual Representation of Autonomous System (AS) Attributes

QOS and VLAN Services

- IEEE 802.1D – 1998 (802.1p) Packet Priority
- RFC 2474 DiffServ Precedence, including 8 queues/port
- RFC 2598 DiffServ Expedited Forwarding (EF)
- RFC 2597 DiffServ Assured Forwarding (AF)
- RFC 2475 DiffServ Core and Edge Router Functions
- Weighted Random Early Detection (WRED)

Traffic Engineering

- RFC 3784 IS-IS Externs for Traffic Engineering (wide metrics only)

VLAN Services: VLANS, VMANS

- IEEE 802.1Q VLAN Tagging
- IEEE 802.1v: VLAN classification by Protocol and Port
- IEEE 802.3ad Static Load sharing configuration & LACP based dynamic configuration
- Port-based VLANs
- Protocol-based VLANs
- MAC-based VLANs
- Multiple STP domains per VLAN
- Upstream Forwarding Only/Disable Flooding
- VLAN Translation
- IEEE 802.1ad Provider Bridge Network, virtual MANs (vMANs)
- vMAN Ethertype Translation/Secondary vMAN Ethertype
- Multicast Support for PVLAN
- Multicast Support for VLAN Aggregation
- VLAN Aggregation
- VLAN Bridging
- IEEE 802.1AK MVRP and MRP

Timing Protocol

- Network Time Protocol
- ITU-T G.8262 Synchronous Ethernet

Data Center

- Data Center Bridging eXchange (DCBX) (IEEE P802.1Qaz/D2.3)
- XNV (ExtremeXOS Network Virtualization)
- SDN OpenStack

Basis of Payment: This work will not be paid for separately, but shall be included in the bid prices for ETHERNET SWITCH, LAYER 3 of the port density and port type specified.

RAILROAD PROTECTIVE LIABILITY INSURANCE (5 AND 10) (BDE)

Effective: January 1, 2006

Description. Railroad Protective Liability and Property Damage Liability Insurance shall be carried according to Article 107.11 of the Standard Specifications, except the limits shall be a minimum of \$5,000,000 combined single limit per occurrence for bodily injury liability and property damage liability with an aggregate limit of \$10,000,000 over the life of the policy. A separate policy is required for each railroad unless otherwise noted. CSX Transportation, Inc. general guidelines, specifications, requirements and application forms for utility installations can be found on the CSX website at csx.com/tellcsx.

NAMED INSURED & ADDRESS	NUMBER & SPEED OF PASSENGER TRAINS	NUMBER & SPEED OF FREIGHT TRAINS
CSX Transportation, Inc. Corridor Occupancy Servicer 6737 South Point Drive South, J-180 Jacksonville, Florida 32216	0	27 Trains at 60 mph
DOT/AAR No.: 914928H RR Division: GL	RR Mile Post: 140.65 RR Sub-Division: St. Louis Line	
For Freight/Passenger Information Contact: Chase Browning chasebrowning@csx.com		Phone: (904) 279-3820
For Insurance Information Contact: csx.com/tellcsx		Phone: (877) 835-5279

Approval of Insurance. The original and one certified copy of each required policy shall be submitted to the following address for approval:

Illinois Department of Transportation
Bureau of Design and Environment
2300 South Dirksen Parkway, Room 326
Springfield, Illinois 62764

The Contractor will be advised when the Department has received approval of the insurance from the railroad(s). Before any work begins on railroad right-of-way, the Contractor shall submit to the Engineer documentation of the required insurance to be approved by the railroad(s). The Contractor shall also provide the Engineer with the expiration date of each required policy.

Basis of Payment. Providing Railroad Protective Liability and Property Damage Liability Insurance will be paid for at the contract unit price per Lump Sum for RAILROAD PROTECTIVE LIABILITY INSURANCE.

ELECTRICAL WORK, IDOT DISTRICT 7 HEADQUARTERS

This work consists of furnishing and installing indoor fiber optic cable, CAT5E data cables, and interior conduit at the IDOT District 7 Headquarters and at the IDOT District 7 Sign Shop located in Effingham.

The Contractor shall perform the following work at the District 7 Headquarters:

Record Storage Room

- Furnish and install approximately 40 feet of 1" EMT conduit with outdoor fiber optic cable from exterior wall where outdoor fiber enters to fiber termination panel.

- Furnish and install 12F indoor (plenum) rated single mode cable from Record Storage Room 404 to proposed equipment rack in communications center and terminate all fibers on both cable ends with ST connectors. All fibers shall be tested in accordance with fiber specifications.
- Furnish and install 12F wall mounted enclosure for indoor fiber optic cable termination on interior wall of Record Storage Room 404.

Communication Center

- Furnish and install two solid gauge CAT5E cables from the proposed ITS equipment rack to monitor location 1 as shown on the plan detail sheet (approximately 30 feet). The Contractor shall terminate the near ends in the proposed RJ-45 patch panel located inside the proposed equipment rack and terminate the far ends of the cables inside a wall jack. The Contractor shall test and clearly label all terminated cables.
- Furnish and install three solid gauge CAT5E cables from the proposed ITS equipment rack to monitor location 2 as shown on the plan detail sheet (approximately 50 feet). The Contractor shall terminate the near ends in the proposed RJ-45 patch panel located inside the proposed equipment rack and terminate the far ends of the cables inside a wall jack. The Contractor shall test and clearly label all terminated cables.
- Furnish and install three solid gauge CAT5E cables from the proposed ITS equipment rack to monitor location 3 as shown on the plan detail sheet (approximately 60 feet). The Contractor shall terminate the near ends in the proposed RJ-45 patch panel located inside the proposed equipment rack and terminate the far ends of the cables inside a wall jack. The Contractor shall test and clearly label all terminated cables.
- Furnish and install three solid gauge CAT5E cables from the proposed ITS equipment rack to monitor location 4 as shown on the plan detail sheet (approximately 60 feet). The Contractor shall terminate the near ends in the proposed RJ-45 patch panel located inside the proposed equipment rack and terminate the far ends of the cables inside a wall jack. The Contractor shall test and clearly label all terminated cables.

The Contractor shall perform the following work at the District 7 Sign Shop:

Sign Shop Building

- Furnish and install 15" section of DIN rail on interior wall adjacent to 12F termination enclosure.
- Furnish and install wall mounted twelve cable RJ-45 patch panel for CAT5E cable and install near 12F termination panel.
- Furnish and install three solid gauge CAT5E cables from the 12F enclosure to monitor location 1 as shown on the plan detail sheet (approximately 15 feet). The Contractor shall terminate the near ends on the proposed RJ-45 patch panel and terminate the far ends of the cables inside a wall jack. The Contractor shall test and clearly label all terminated cables.

- Furnish and install three solid gauge CAT5E cables from the 12F enclosure to monitor location 2 as shown on the plan detail sheet (approximately 40 feet). The Contractor shall terminate the near ends on the proposed RJ-45 patch panel and terminate the far ends of the cables inside a wall jack. The Contractor shall test and clearly label all terminated cables.

West Yard Maintenance Building

- Furnish and install 15” section of DIN rail on interior wall adjacent to 12F termination enclosure.
- Furnish and install wall mounted twelve cable RJ-45 patch panel for CAT5E cable and install near 12F termination panel.

Effingham City Municipal Building

- Furnish and install 15” section of DIN rail on interior wall adjacent to 6F termination enclosure.
- Furnish and install wall mounted twelve cable RJ-45 patch panel for CAT5E cable and install near 6F termination panel.

The Contractor shall verify all distances and field conditions prior to bidding as there will be no additional compensation.

The cables shall be concealed from view whenever possible. The Contractor shall penetrate walls as needed to install the proposed cabling. All work shall be done to the satisfaction of the Engineer. Exposed cables shall be encased in wire guard.

The Contractor shall contact Matt Weidner at (217) 342-8385 forty-eight hours prior to commencing work.

Basis of Payment: This work shall be paid for at the contract unit price per lump sum for ELECTRICAL WORK, IDOT DISTRICT 7 HEADQUARTERS, and shall include all labor, material, and equipment required to furnish the equipment and perform the work described above at the IDOT District 7 Headquarters and IDOT District 7 Traffic Operations Sign Shop.

COATED GALVANIZED STEEL CONDUIT (BDE)

Effective: January 1, 2013

Revised: August 1, 2014

Revise Article 811.03(b) of the Standard Specifications to read:

“(b) Coated Galvanized Steel Conduit. In addition to the methods described in Article 810.05(a) the following methods shall be observed when installing coated conduit.

Coated conduit pipe vise jaw adapters shall be used when the conduit is being clamped to avoid damaging the coating.

Coated conduit shall be cut with a roller cutter or by other means approved by the conduit manufacturer.

After any cutting or threading operations are completed, the bare steel shall be touched up with the conduit manufacturer's touch up compound."

Revise Article 1088.01(a)(3) of the Standard Specifications to read:

"(3) Coated Galvanized Steel Conduit. The conduit prior to coating shall meet the requirements for rigid metal conduit and be manufactured according to NEMA Standard No. RN1.

The coating shall have the following characteristics.

Hardness	85+ Shore A Durometer
Dielectric Strength	400 V/mil @ 60 Hz
Aging	1,000 Hours Atlas Weatherometer
Brittleness Temperature	0 °F (-18 °C) when tested according to ASTM D 746
Elongation	200 percent

The exterior galvanized surfaces shall be coated with a primer before the coating to ensure a bond between the zinc substrate and the coating. The bond strength created shall be greater than the tensile strength of the plastic coating. The nominal thickness of the coating shall be 40 mils (1 mm). The coating shall pass the following bonding test.

Two parallel cuts 1/2 in. (13 mm) apart and 1 1/2 in. (38 mm) in length shall be made with a sharp knife along the longitudinal axis. A third cut shall be made perpendicular to and crossing the longitudinal cuts at one end. The knife shall then be worked under the coating for 1/2 in. (13 mm) to free the coating from the metal.

Using pliers, the freed tab shall be pulled with a force applied vertically and away from the conduit. The tab shall tear rather than cause any additional coating to separate from the substrate.

A two part urethane coating shall be applied to the interior of the conduit. The internal coating shall have a nominal thickness of 2 mils (50 µm). The interior coating shall be applied in a manner so there are no runs, drips, or pinholes at any point. The coating shall not peel, flake, or chip off after a cut is made in the conduit or a scratch is made in the coating. The urethane interior coating applied shall afford sufficient flexibility to permit field bending without cracking or flaking of the interior coating.

All conduit fittings and couplings shall be as specified and recommended by the conduit manufacturer. All conduit fitting covers shall be furnished with stainless steel screws which have been encapsulated with a polyester material on the head to ensure maximum corrosion protection."

COILABLE NONMETALLIC CONDUIT (BDE)

Effective: August 1, 2014

Revise Article 1088.01(c) of the Standard Specifications to read:

“(c) Coilable Nonmetallic Conduit. The conduit shall be a high density polyethylene duct which is intended for underground use can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties or performance. The conduit and its manufacture shall be according to UL Standard 651A.

Performance Tests. Testing procedures and test results shall meet the requirements of UL Standard 651A. Certified copies of the test report shall be submitted to the Engineer prior to the installation of the conduit.”

CONSTRUCTION AIR QUALITY – DIESEL RETROFIT (BDE)

Effective: June 1, 2010

Revised: January 1, 2014

The reduction of emissions of particulate matter (PM) for off-road equipment shall be accomplished by installing retrofit emission control devices. The term “equipment” refers to diesel fuel powered devices rated at 50 hp and above, to be used on the jobsite in excess of seven calendar days over the course of the construction period on the jobsite (including rental equipment).

Contractor and subcontractor diesel powered off-road equipment assigned to the contract shall be retrofitted using the phased in approach shown below. Equipment that is of a model year older than the year given for that equipment’s respective horsepower range shall be retrofitted:

Effective Dates	Horsepower Range	Model Year
June 1, 2010 ^{1/}	600-749	2002
	750 and up	2006
June 1, 2011 ^{2/}	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006
June 1, 2012 ^{2/}	50-99	2004
	100-299	2003
	300-599	2001
	600-749	2002
	750 and up	2006

1/ Effective dates apply to Contractor diesel powered off-road equipment assigned to the contract.

2/ Effective dates apply to Contractor and subcontractor diesel powered off-road equipment assigned to the contract.

The retrofit emission control devices shall achieve a minimum PM emission reduction of 50 percent and shall be:

- a) Included on the U.S. Environmental Protection Agency (USEPA) *Verified Retrofit Technology List* (<http://www.epa.gov/cleandiesel/verification/verif-list.htm>), or verified by the California Air Resources Board (CARB) (<http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>); or
- b) Retrofitted with a non-verified diesel retrofit emission control device if verified retrofit emission control devices are not available for equipment proposed to be used on the project, and if the Contractor has obtained a performance certification from the retrofit device manufacturer that the emission control device provides a minimum PM emission reduction of 50 percent.

Note: Large cranes (Crawler mounted cranes) which are responsible for critical lift operations are exempt from installing retrofit emission control devices if such devices adversely affect equipment operation.

Diesel powered off-road equipment with engine ratings of 50 hp and above, which are unable to be retrofitted with verified emission control devices or if performance certifications are not available which will achieve a minimum 50 percent PM reduction, may be granted a waiver by the Department if documentation is provided showing good faith efforts were made by the Contractor to retrofit the equipment.

Construction shall not proceed until the Contractor submits a certified list of the diesel powered off-road equipment that will be used, and as necessary, retrofitted with emission control devices. The list(s) shall include (1) the equipment number, type, make, Contractor/rental company name; and (2) the emission control devices make, model, USEPA or CARB verification number, or performance certification from the retrofit device manufacturer. Equipment reported as fitted with emissions control devices shall be made available to the Engineer for visual inspection of the device installation, prior to being used on the jobsite.

The Contractor shall submit an updated list of retrofitted off-road construction equipment as retrofitted equipment changes or comes on to the jobsite. The addition or deletion of any diesel powered equipment shall be included on the updated list.

If any diesel powered off-road equipment is found to be in non-compliance with any portion of this special provision, the Engineer will issue the Contractor a diesel retrofit deficiency deduction.

Any costs associated with retrofitting any diesel powered off-road equipment with emission control devices shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed. The Contractor's compliance with this notice and any associated regulations shall not be grounds for a claim.

Diesel Retrofit Deficiency Deduction

When the Engineer determines that a diesel retrofit deficiency exists, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency continues to exist. The calendar day(s) will begin when the time period for correction is exceeded and end with the Engineer's written acceptance of the correction. The daily monetary deduction will be \$1,000.00 for each deficiency identified.

The deficiency will be based on lack of diesel retrofit emissions control.

If a Contractor accumulates three diesel retrofit deficiency deductions for the same piece of equipment in a contract period, the Contractor will be shutdown until the deficiency is corrected. Such a shutdown will not be grounds for any extension of the contract time, waiver of penalties, or be grounds for any claim.

CONTRACT CLAIMS (BDE)

Effective: April 1, 2014

Revise the first paragraph of Article 109.09(a) of the Standard Specifications to read:

“(a) Submission of Claim. All claims filed by the Contractor shall be in writing and in sufficient detail to enable the Department to ascertain the basis and amount of the claim. As a minimum, the following information must accompany each claim submitted.”

Revise Article 109.09(e) of the Standard Specifications to read:

“(e) Procedure. The Department provides two administrative levels for claims review.

Level I Engineer of Construction

Level II Chief Engineer/Director of Highways or Designee

- (1) Level I. All claims shall first be submitted at Level I. Two copies each of the claim and supporting documentation shall be submitted simultaneously to the District and the Engineer of Construction. The Engineer of Construction, in consultation with the District, will consider all information submitted with the claim and render a decision on the claim within 90 days after receipt by the Engineer of Construction. Claims not conforming to this Article will be returned without consideration. The Engineer of Construction may schedule a claim presentation meeting if in the Engineer of Construction's judgment such a meeting would aid in resolution of the claim, otherwise a decision will be made based on the claim documentation submitted. If a Level I decision is not rendered within 90 days of receipt of the claim, or if the Contractor disputes the decision, an appeal to Level II may be made by the Contractor.

- (2) Level II. An appeal to Level II shall be made in writing to the Engineer of Construction within 45 days after the date of the Level I decision. Review of the claim at Level II shall be conducted as a full evaluation of the claim. A claim presentation meeting may be scheduled if the Chief Engineer/Director of Highways determines that such a meeting would aid in resolution of the claim, otherwise a decision will be made based on the claim documentation submitted. A Level II final decision will be rendered within 90 days of receipt of the written request for appeal.

Full compliance by the Contractor with the provisions specified in this Article is a contractual condition precedent to the Contractor's right to seek relief in the Court of Claims. The Director's written decision shall be the final administrative action of the Department. Unless the Contractor files a claim for adjudication by the Court of Claims within 60 days after the date of the written decision, the failure to file shall constitute a release and waiver of the claim."

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION (DBE)

Effective: September 1, 2000

Revised: August 2, 2011

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR Part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR Part 26 and listed in the Illinois Unified Certification Program (IL UCP) DBE Directory.

STATE OBLIGATION. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. When this Special Provision is used to satisfy state law requirements on 100 percent state-funded contracts, the federal government has no involvement in such contracts (not a federal-aid contract) and no responsibility to oversee the implementation of this Special Provision by the Department on those contracts. DBE participation on 100 percent state-funded contracts will not be credited toward fulfilling the Department's annual overall DBE goal required by the US Department of Transportation to comply with the federal DBE program requirements.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract that the Contractor signs with a subcontractor.

The Contractor, subrecipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of contracts funded in whole or in part with federal or state funds. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR Part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE companies performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined that the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. The determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates that, in the absence of unlawful discrimination, and in an arena of fair and open competition, DBE companies can be expected to perform **3.00%** of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will only award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set for in this Special Provision:

- (a) The bidder documents that enough DBE participation has been obtained to meet the goal: or
- (b) The bidder documents that a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders shall consult the IL UCP DBE Directory as a reference source for DBE-certified companies. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217)785-4611, or by visiting the Department's website at www.dot.il.gov.

BIDDING PROCEDURES. Compliance with this Special Provision is a material bidding requirement. The failure of the bidder to comply will render the bid not responsive.

- (a) The bidder shall submit a Disadvantaged Business Utilization Plan on Department forms SBE 2025 and 2026 with the bid.
- (b) The Utilization Plan shall indicate that the bidder either has obtained sufficient DBE participation commitments to meet the contract goal or has not obtained enough DBE participation commitments in spite of a good faith effort to meet the goal. The Utilization Plan shall further provide the name, telephone number, and telefax number of a responsible official of the bidder designated for purposes of notification of plan approval or disapproval under the procedures of this Special Provision.

- (c) The Utilization Plan shall include a DBE Participation Commitment Statement, Department form SBE 2025, for each DBE proposed for the performance of work to achieve the contract goal. For bidding purposes, submission of the completed SBE 2025 forms, signed by the DBEs and faxed to the bidder will be acceptable as long as the original is available and provided upon request. All elements of information indicated on the said form shall be provided, including but not limited to the following:
- (1) The names and addresses of DBE firms that will participate in the contract;
 - (2) A description, including pay item numbers, of the work each DBE will perform;
 - (3) The dollar amount of the participation of each DBE firm participating. The dollar amount of participation for identified work shall specifically state the quantity, unit price, and total subcontract price for the work to be completed by the DBE. If partial pay items are to be performed by the DBE, indicate the portion of each item, a unit price where appropriate and the subcontract price amount;
 - (4) DBE Participation Commitment Statements, form SBE 2025, signed by the bidder and each participating DBE firm documenting the commitment to use the DBE subcontractors whose participation is submitted to meet the contract goal;
 - (5) if the bidder is a joint venture comprised of DBE companies and non-DBE companies, the plan must also include a clear identification of the portion of the work to be performed by the DBE partner(s); and,
 - (6) If the contract goal is not met, evidence of good faith efforts.

GOOD FAITH EFFORT PROCEDURES. The contract will not be awarded until the Utilization Plan submitted by the apparent successful bidder is approved. All information submitted by the bidder must be complete, accurate and adequately document that enough DBE participation has been obtained or document that good faith efforts of the bidder, in the event enough DBE participation has not been obtained, before the Department will commit to the performance of the contract by the bidder. The Utilization Plan will be approved by the Department if the Utilization Plan documents sufficient commercially useful DBE work performance to meet the contract goal or the bidder submits sufficient documentation of a good faith effort to meet the contract goal pursuant to 49 CFR Part 26, Appendix A. The Utilization Plan will not be approved by the Department if the Utilization Plan does not document sufficient DBE participation to meet the contract goal unless the apparent successful bidder documented in the Utilization Plan that it made a good faith effort to meet the goal. This means that the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which, by their scope, intensity and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if they were not successful. The Department will consider the quality, quantity, and intensity of the kinds of efforts that the bidder has made. Mere *pro forma* efforts, in other words, efforts done as a matter of form, are not good faith efforts; rather, the bidder is expected to have taken genuine efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

- (a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases, and will be considered by the Department.
- (1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.
 - (2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime Contractor might otherwise prefer to perform these work items with its own forces.
 - (3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
 - (4)
 - a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.
 - b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also the ability or desire of a bidder to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Bidders are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable.
 - (5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The bidder's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the bidder's efforts to meet the project goal.

- (6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or Contractor.
 - (7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.
 - (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.
- (b) If the Department determines that the apparent successful bidder has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided that it is otherwise eligible for award. If the Department determines that the bidder has failed to meet the requirements of this Special Provision or that a good faith effort has not been made, the Department will notify the responsible company official designated in the Utilization Plan that the bid is not responsive. The notification shall include a statement of reasons for the determination.
- (c) The bidder may request administrative reconsideration of a determination adverse to the bidder within the five working days after the receipt of the notification date of the determination by delivering the request to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217)785-1524). Deposit of the request in the United States mail on or before the fifth business day shall not be deemed delivery. The determination shall become final if a request is not made and delivered. A request may provide additional written documentation and/or argument concerning the issues raised in the determination statement of reasons, provided the documentation and arguments address efforts made prior to submitting the bid. The request will be forwarded to the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person in order to consider all issues of documentation and whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten working days after receipt of the request for consideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid not responsive.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR Part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR Part 26.55, the provisions of which govern over the summary contained herein.

- (a) DBE as the Contractor: 100 percent goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE does not count toward the DBE goals.
- (b) DBE as a joint venture Contractor: 100 percent goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.
- (c) DBE as a subcontractor: 100 percent goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DBE subcontractor from the prime Contractor or its affiliates. Work that a DBE subcontractor in turn subcontracts to a non-DBE does not count toward the DBE goal.
- (d) DBE as a trucker: 100 percent goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed, and insured by the DBE must be used on the contract. Credit will be given for the following:
 - (1) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
 - (2) The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission is receives as a result of the lease arrangement.
- (e) DBE as a material supplier:
 - (1) 60 percent goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.
 - (2) 100 percent goal credit for the cost of materials of supplies obtained from a DBE manufacturer.
 - (3) 100 percent credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a regular dealer or manufacturer.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the Utilization Plan. After approval of the Utilization Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the Contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal. All work indicated for performance by an approved DBE shall be performed, managed, and supervised by the DBE executing the Participation Statement.

- (a) NO AMENDMENT. No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764. Telephone number (217)785-4611. Telefax number (217)785-1524.
- (b) TERMINATION OR REPLACEMENT. The Contractor shall not terminate or replace a DBE listed on the approved Utilization Plan, or perform with other forces work designated for a listed DBE except as provided in the Special Provision.
- (c) CHANGES TO WORK. Any deviation from the DBE condition-of-award or contract plans, specifications, or special provisions must be approved, in writing, by the Department as provided elsewhere in the Contract. The Contractor shall notify affected DBEs in writing of any changes in the scope of work which result in a reduction in the dollar amount condition-of-award to the contract. Where the revision includes work committed to a new DBE subcontractor, not previously involved in the project, then a Request for Approval of Subcontractor, Department form BC 260A, must be signed and submitted. If the commitment of work is in the form of additional tasks assigned to an existing subcontract, then a new Request for Approval of Subcontractor shall not be required. However, the Contractor must document efforts to assure that the existing DBE subcontractor is capable of performing the additional work and has agreed in writing to the change.
- (d) ALTERNATIVE WORK METHODS. In addition to the above requirements for reductions in the condition of award, additional requirements apply to the two cases of Contractor-initiated work substitution proposals. Where the contract allows alternate work methods which serve to delete or create underruns in condition of award DBE work, and the Contractor selects that alternate method or, where the Contractor proposes a substitute work method or material that serves to diminish or delete work committed to a DBE and replace it with other work, then the Contractor must demonstrate one of the following:

- (1) That the replacement work will be performed by the same DBE (as long as the DBE is certified in the respective item of work) in a modification of the condition of award;
or
 - (2) That the DBE is aware that its work will be deleted or will experience underruns and has agreed in writing to the change. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so; or
 - (3) That the DBE is not capable of performing the replacement work or has declined to perform the work at a reasonable competitive price. If this occurs, the Contractor shall substitute other work of equivalent value to a certified DBE or provide documentation of good faith efforts to do so.
- (e) TERMINATION AND REPLACEMENT PROCEDURES. The Contractor shall not terminate or replace a DBE subcontractor listed in the approved Utilization Plan without prior written consent. This includes, but is not limited to, instances in which the Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Written consent will be granted only if the Bureau of Small Business Enterprises agrees, for reasons stated in its concurrence document, that the Contractor has good cause to terminate or replace the DBE firm. Before transmitting to the Bureau of Small Business Enterprises any request to terminate and/or substitute a DBE subcontractor, the Contractor shall give notice in writing to the DBE subcontractor, with a copy to the Bureau, of its intent to request to terminate and/or substitute, and the reason for the request. The Contractor shall give the DBE five days to respond to the Contractor's notice. The DBE so notified shall advise the Bureau and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why the Bureau should not approve the Contractor's action. If required in a particular case as a matter of public necessity, the Bureau may provide a response period shorter than five days.

For purposes of this paragraph, good cause includes the following circumstances:

- (1) The listed DBE subcontractor fails or refuses to execute a written contract;
- (2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided, however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the prime Contractor's reasonable, nondiscriminatory bond requirements;
- (4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1,200 or applicable state law.

- (6) You have determined that the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the projects and provides to you written notice of its withdrawal;
- (8) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (9) A DBE owner dies or becomes disabled with the result that the listed DBE contractor is unable to complete its work on the contract;
- (10) Other documented good cause that compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the prime Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the prime Contractor can self-perform the work for which the DBE contractor was engaged or so that the prime Contractor can substitute another DBE or non-DBE contractor after contract award.

When a DBE is terminated, or fails to complete its work on the Contract for any reason the Contractor shall make a good faith effort to find another DBE to substitute for the original DBE to perform at least the same amount of work under the contract as the terminated DBE to the extent needed to meet the established Contract goal.

- (f) PAYMENT RECORDS. The Contractor shall maintain a record of payments for work performed to the DBE participants. The records shall be made available to the Department for inspection upon request. After the performance of the final item of work or delivery of material by a DBE and final payment therefore to the DBE by the Contractor, but not later than thirty calendar days after payment has been made by the Department to the Contractor for such work or material, the Contractor shall submit a DBE Payment Agreement on Department form SBE 2115 to the Regional Engineer. If full and final payment has not been made to the DBE, the DBE Payment Agreement shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes that the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the BDE companies indicated in the Utilization Plan and after good faith efforts are reviewed, the Department may deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages. The Contractor may request an administrative reconsideration of any amount deducted as damages pursuant to subsection (h) of this part.
- (g) ENFORCEMENT. The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

- (h) RECONSIDERATION. Notwithstanding any other provision of the contract, including but not limited to Article 109.09 of the Standard Specifications, the Contractor may request administrative reconsideration of a decision to deduct the amount of the goal not achieved as liquidated damages. A request to reconsider shall be delivered to the Contract Compliance Section and shall be handled and considered in the same manner as set forth in paragraph (c) of "Good Faith Effort Procedures" of this Special Provision, except a final decision that a good faith effort was not made during contract performance to achieve the goal agreed to in the Utilization Plan shall be the final administrative decision of the Department.

PAYROLLS AND PAYROLL RECORDS (BDE)

Effective: January 1, 2014

FEDERAL AID CONTRACTS. Revise the following section of Check Sheet #1 of the Recurring Special Provisions to read:

"STATEMENTS AND PAYROLLS

The payroll records shall include the worker's name, the worker's address, the worker's telephone number when available, the worker's social security number, the worker's classification or classifications, the worker's gross and net wages paid in each pay period, the worker's number of hours worked each day, the worker's starting and ending times of work each day. However, any Contractor or subcontractor who remits contributions to a fringe benefit fund that is not jointly maintained and jointly governed by one or more employers and one or more labor organization must additionally submit the worker's hourly wage rate, the worker's hourly overtime wage rate, the worker's hourly fringe benefit rates, the name and address of each fringe benefit fund, the plan sponsor of each fringe benefit, if applicable, and the plan administrator of each fringe benefit, if applicable.

The Contractor and each subcontractor shall submit payroll records to the Engineer each week from the start to the completion of their respective work, except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead, the payrolls shall include an identification number for each employee (e.g., the last four digits of the employee's social security number). In addition, starting and ending times of work each day may be omitted from the payroll records submitted to the Engineer. The submittals shall be on the Department's form SBE 48, or an approved facsimile. When there has been no activity during a work week, a payroll record shall still be submitted with the appropriate box ("No Work", "Suspended", or "Complete") checked on the form."

STATE CONTRACTS. Revise Section IV of Check Sheet #5 of the Recurring Special Provisions to read:

"IV. COMPLIANCE WITH THE PREVAILING WAGE ACT

1. **Prevailing Wages.** All wages paid by the Contractor and each subcontractor shall be in compliance with The Prevailing Wage Act (820 ILCS 130), as amended, except where a prevailing wage violates a federal law, order, or ruling, the rate conforming to the federal law, order, or ruling shall govern. The Contractor shall be responsible to notify each subcontractor of the wage rates set forth in this contract and any revisions thereto. If the Department of Labor revises the wage rates, the Contractor will not be allowed additional compensation on account of said revisions.
2. **Payroll Records.** The Contractor and each subcontractor shall make and keep, for a period of five years from the later of the date of final payment under the contract or completion of the contract, records of the wages paid to his/her workers. The payroll records shall include the worker's name, the worker's address, the worker's telephone number when available, the worker's social security number, the worker's classification or classifications, the worker's gross and net wages paid in each pay period, the worker's number of hours worked each day, the worker's starting and ending times of work each day. However, any contractor or subcontractor who remits contributions to a fringe benefit fund that is not jointly maintained and jointly governed by one or more employers and one or more labor organization must additionally submit the worker's hourly wage rate, the worker's hourly overtime wage rate, the worker's hourly fringe benefit rates, the name and address of each fringe benefit fund, the plan sponsor of each fringe benefit, if applicable, and the plan administrator of each fringe benefit, if applicable. Upon seven business days' notice, these records shall be available at a location within the State, during reasonable hours, for inspection by the Department or the Department of Labor; and Federal, State, or local law enforcement agencies and prosecutors.
3. **Submission of Payroll Records.** The Contractor and each subcontractor shall submit payroll records to the Engineer each week from the start to the completion of their respective work, except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall include an identification number for each employee (e.g., the last four digits of the employee's social security number). In addition, starting and ending times of work each day may be omitted from the payroll records submitted to the Engineer. The submittals shall be on the Department's form SBE 48, or an approved facsimile. When there has been no activity during a work week, a payroll record shall still be submitted with the appropriate box ("No Work", "Suspended", or "Complete") checked on the form.

Each submittal shall be accompanied by a statement signed by the Contractor or subcontractor, or an officer, employee, or officer thereof, which avers that: (i) he or she has examined the records and such records are true and accurate; (ii) the hourly rate paid to each worker is not less than the general prevailing rate of hourly wages required by the Act; and (iii) the Contractor or subcontractor is aware that filing a payroll record that he/she knows to be false is a Class A misdemeanor.

4. **Employee Interviews.** The Contractor and each subcontractor shall permit his/her employees to be interviewed on the job, during working hours, by compliance investigators of the Department or the Department of Labor."

PRECAST CONCRETE HANDHOLE (BDE)

Effective: August 1, 2014

Revise the third paragraph of Article 814.03 of the Standard Specifications to read:

“Handholes shall be constructed as shown on the plans and shall be cast-in-place, composite concrete, or precast units. Heavy duty handholes shall be either cast-in-place or precast units.”

Add the following to Article 814.03 of the Standard Specifications:

“(c) Precast Concrete. Precast concrete handholes shall be fabricated according to Article 1042.17. Where a handhole is contiguous to a sidewalk, preformed joint filler of 1/2 inch (13 mm) thickness shall be placed between the handhole and the sidewalk.”

Add the following to Section 1042 of the Standard Specifications:

“**1042.17 Precast Concrete Handholes.** Precast concrete handholes shall be according to Articles 1042.03(a)(c)(d)(e).”

PROGRESS PAYMENTS (BDE)

Effective: November 2, 2013

Revise Article 109.07(a) of the Standard Specifications to read:

“(a) Progress Payments. At least once each month, the Engineer will make a written estimate of the quantity of work performed in accordance with the contract, and the value thereof at the contract unit prices. The amount of the estimate approved as due for payment will be vouchered by the Department and presented to the State Comptroller for payment. No amount less than \$1000.00 will be approved for payment other than the final payment.

Progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics' Lien Act, 770 ILCS 60/23(c).

If a Contractor or subcontractor has defaulted on a loan issued under the Department's Disadvantaged Business Revolving Loan Program (20 ILCS 2705/2705-610), progress payments may be reduced pursuant to the terms of that loan agreement. In such cases, the amount of the estimate related to the work performed by the Contractor or subcontractor, in default of the loan agreement, will be offset, in whole or in part, and vouchered by the Department to the Working Capital Revolving Fund or designated escrow account.

Payment for the work shall be considered as issued and received by the Contractor or subcontractor on the date of the offset voucher. Further, the amount of the offset voucher shall be a credit against the Department's obligation to pay the Contractor, the Contractor's obligation to pay the subcontractor, and the Contractor's or subcontractor's total loan indebtedness to the Department. The offset shall continue until such time as the entire loan indebtedness is satisfied. The Department will notify the Contractor and Fund Control Agent in a timely manner of such offset. The Contractor or subcontractor shall not be entitled to additional payment in consideration of the offset.

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department determines that compliance has been achieved."

RAILROAD PROTECTIVE LIABILITY INSURANCE (5 AND 10) (BDE)

Effective: January 1, 2006

Description. Railroad Protective Liability and Property Damage Liability Insurance shall be carried according to Article 107.11 of the Standard Specifications, except the limits shall be a minimum of \$5,000,000 combined single limit per occurrence for bodily injury liability and property damage liability with an aggregate limit of \$10,000,000 over the life of the policy. A separate policy is required for each railroad unless otherwise noted.

NAMED INSURED & ADDRESS	NUMBER & SPEED OF PASSENGER TRAINS	NUMBER & SPEED OF FREIGHT TRAINS
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DOT/AAR No.:
RR Division:

RR Mile Post:
RR Sub-Division:

For Freight/Passenger Information Contact:
For Insurance Information Contact:

Phone:
Phone:

DOT/AAR No.:
RR Division:

RR Mile Post:
RR Sub-Division:

For Freight/Passenger Information Contact:
For Insurance Information Contact:

Phone:
Phone:

Approval of Insurance. The original and one certified copy of each required policy shall be submitted to the following address for approval:

Illinois Department of Transportation
Bureau of Design and Environment
2300 South Dirksen Parkway, Room 326
Springfield, Illinois 62764

The Contractor will be advised when the Department has received approval of the insurance from the railroad(s). Before any work begins on railroad right-of-way, the Contractor shall submit to the Engineer evidence that the required insurance has been approved by the railroad(s). The Contractor shall also provide the Engineer with the expiration date of each required policy.

Basis of Payment. Providing Railroad Protective Liability and Property Damage Liability Insurance will be paid for at the contract unit price per Lump Sum for RAILROAD PROTECTIVE LIABILITY INSURANCE.

REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES (BDE)

Effective: January 1, 2012

Revised: November 2, 2012

Revise Article 669.01 of the Standard Specifications to read:

“669.01 Description. This work shall consist of the transportation and proper disposal of contaminated soil and water. This work shall also consist of the removal, transportation, and proper disposal of underground storage tanks (UST), their content and associated underground piping to the point where the piping is above the ground, including determining the content types and estimated quantities.”

Revise Article 669.08 of the Standard Specifications to read:

“669.08 Contaminated Soil and/or Groundwater Monitoring. The Contractor shall hire a qualified environmental firm to monitor the area containing the regulated substances. The affected area shall be monitored with a photoionization detector (PID) utilizing a lamp of 10.6eV or greater or a flame ionization detector (FID). Any field screen reading on the PID or FID in excess of background levels indicates the potential presence of contaminated material requiring handling as a non-special waste, special waste, or hazardous waste. No excavated soils can be taken to a clean construction and demolition debris (CCDD) facility or an uncontaminated soil fill operation with detectable PID or FID meter readings that are above background. The PID or FID meter shall be calibrated on-site and background level readings taken and recorded daily. All testing shall be done by a qualified engineer/technician. Such testing and monitoring shall be included in the work. The Contractor shall identify the exact limits of removal of non-special waste, special waste, or hazardous waste. All limits shall be approved by the Engineer prior to excavation. The Contractor shall take all necessary precautions.

Based upon the land use history of the subject property and/or PID or FID readings indicating contamination, a soil or groundwater sample shall be taken from the same location and submitted to an approved laboratory. Soil or groundwater samples shall be analyzed for the contaminants of concern, including pH, based on the property's land use history or the parameters listed in the maximum allowable concentration (MAC) for chemical constituents in uncontaminated soil established pursuant to Subpart F of 35 Illinois Administrative Code 1100.605. The analytical results shall serve to document the level of soil contamination. Soil and groundwater samples may be required at the discretion of the Engineer to verify the level of soil and groundwater contamination.

Samples shall be grab samples (not combined with other locations). The samples shall be taken with decontaminated or disposable instruments. The samples shall be placed in sealed containers and transported in an insulated container to the laboratory. The container shall maintain a temperature of 39 °F (4 °C). All samples shall be clearly labeled. The labels shall indicate the sample number, date sampled, location and elevation, and any other observations.

The laboratory shall use analytical methods which are able to meet the lowest appropriate practical quantitation limits (PQL) or estimated quantitation limit (EQL) specified in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", EPA Publication No. SW-846 and "Methods for the Determination of Organic Compounds in Drinking Water", EPA, EMSL, EPA-600/4-88/039. For parameters where the specified cleanup objective is below the acceptable detection limit (ADL), the ADL shall serve as the cleanup objective. For other parameters the ADL shall be equal to or below the specified cleanup objective."

Replace the first two paragraphs of Article 669.09 of the Standard Specifications with the following:

"669.09 Contaminated Soil and/or Groundwater Management and Disposal. The management and disposal of contaminated soil and/or groundwater shall be according to the following:

- (a) Soil Analytical Results Exceed Most Stringent MAC. When the soil analytical results indicate that detected levels exceed the most stringent maximum allowable concentration (MAC) for chemical constituents in uncontaminated soil established pursuant to Subpart F of 35 Illinois Administrative Code 1100.605, the soil shall be managed as follows:
 - (1) When analytical results indicate inorganic chemical constituents exceed the most stringent MAC but they are still considered within area background levels by the Engineer, the excavated soil can be utilized within the construction limits as fill, when suitable. Such soil excavated for storm sewers can be placed back into the excavated trench as backfill, when suitable, unless trench backfill is specified. If the soils cannot be utilized within the construction limits, they shall be managed and disposed of off-site as a non-special waste, special waste, or hazardous waste as applicable.

- (2) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for a Metropolitan Statistical Area (MSA) County, the excavated soil can be utilized within the construction limits as fill, when suitable, or managed and disposed of off-site as “uncontaminated soil” at a CCDD facility or an uncontaminated soil fill operation within an MSA County provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.
 - (3) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, or the MAC within the Chicago corporate limits, the excavated soil can be utilized within the construction limits as fill, when suitable, or managed and disposed of off-site as “uncontaminated soil” at a CCDD facility or an uncontaminated soil fill operation within an MSA County excluding Chicago or within the Chicago corporate limits provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.
 - (4) When analytical results indicate chemical constituents exceed the most stringent MAC but do not exceed the MAC for an MSA County excluding Chicago, the excavated soil can be utilized within the construction limits as fill, when suitable, or managed and disposed of off-site as “uncontaminated soil” at a CCDD facility or an uncontaminated soil fill operation within an MSA County excluding Chicago provided the pH of the soil is within the range of 6.25 - 9.0, inclusive.
 - (5) When the Engineer determines soil cannot be managed according to Articles 669.09(a)(1) through (a)(4) above, the soil shall be managed and disposed of off-site as a non-special waste, special waste, or hazardous waste as applicable.
- (b) Soil Analytical Results Do Not Exceed Most Stringent MAC. When the soil analytical results indicate that detected levels do not exceed the most stringent MAC but the pH of the soil is less than 6.25 or greater than 9.0, the excavated soil can be utilized within the construction limits or managed and disposed of off-site as “uncontaminated soil” according to Article 202.03. However the excavated soil cannot be taken to a CCDD facility or an uncontaminated soil fill operation.
- (c) Groundwater. When groundwater analytical results indicate the detected levels are above Appendix B, Table E of 35 Illinois Administrative Code 742, the most stringent Tier 1 Groundwater Remediation Objectives for Groundwater Component of the Groundwater Ingestion Route for Class 1 groundwater, the groundwater shall be managed off-site as a special waste.

All groundwater encountered within lateral trenches may be managed within the trench and allowed to infiltrate back into the ground. If the groundwater cannot be managed within the trench it must be removed as a special or hazardous waste. The Contractor is prohibited from managing groundwater within the trench by discharging it through any existing or new storm sewer. The Contractor shall install backfill plugs within the area of groundwater contamination.

One backfill plug shall be placed down gradient to the area of groundwater contamination. Backfill plugs shall be installed at intervals not to exceed 50 ft (15 m). Backfill plugs are to be 4 ft (1.2 m) long, measured parallel to the trench, full trench width and depth. Backfill plugs shall not have any fine aggregate bedding or backfill, but shall be entirely cohesive soil or any class of concrete. The Contractor shall provide test data that the material has a permeability of less than 10^{-7} cm/sec according to ASTM D 5084, Method A or per another test method approved by the Engineer.”

Revise Article 669.14 of the Standard Specifications to read:

“669.14 Final Environmental Construction Report. At the end of the project, the Contractor will prepare and submit three copies of the Environmental Construction Report on the activities conducted during the life of the project, one copy shall be submitted to the Resident Engineer, one copy shall be submitted to the District's Environmental Studies Unit, and one copy shall be submitted with an electronic copy in Adode.pdf format to the Geologic and Waste Assessment Unit, Bureau of Design and Environment, IDOT, 2300 South Dirksen Parkway, Springfield, Illinois 62764. The technical report shall include all pertinent information regarding the project including, but not limited to:

- (a) Measures taken to identify, monitor, handle, and dispose of soil or groundwater containing regulated substances, to prevent further migration of regulated substances, and to protect workers,
- (b) Cost of identifying, monitoring, handling, and disposing of soil or groundwater containing regulated substances, the cost of preventing further migration of regulated substances, and the cost for worker protection from the regulated substances. All cost should be in the format of the contract pay items listed in the contract plans (identified by the preliminary environmental site investigation (PESA) site number),
- (c) Plan sheets showing the areas containing the regulated substances,
- (d) Field sampling and testing results used to identify the nature and extent of the regulated substances,
- (e) Waste manifests (identified by the preliminary environmental site investigation (PESA) site number) for special or hazardous waste disposal, and
- (f) Landfill tickets (identified by the preliminary environmental site investigation (PESA) site number) for non-special waste disposal.”

Revise the second paragraph of Article 669.16 of the Standard Specifications to read:

“The transportation and disposal of soil and other materials from an excavation determined to be contaminated will be paid for at the contract unit price per cubic yard (cubic meter) for NON-SPECIAL WASTE DISPOSAL, SPECIAL WASTE DISPOSAL, or HAZARDOUS WASTE DISPOSAL.”

REMOVAL AND DISPOSAL OF SURPLUS MATERIALS (BDE)

Effective: November 2, 2012

Revise the first four paragraphs of Article 202.03 of the Standard Specifications to read:

“202.03 Removal and Disposal of Surplus, Unstable, Unsuitable, and Organic Materials. Suitable excavated materials shall not be wasted without permission of the Engineer. The Contractor shall dispose of all surplus, unstable, unsuitable, and organic materials, in such a manner that public or private property will not be damaged or endangered.

Suitable earth, stones and boulders naturally occurring within the right-of-way may be placed in fills or embankments in lifts and compacted according to Section 205. Broken concrete without protruding metal bars, bricks, rock, stone, reclaimed asphalt pavement with no expansive aggregate, or uncontaminated dirt and sand generated from construction or demolition activities may be used in embankment or in fill. If used in fills or embankments, these materials shall be placed and compacted to the satisfaction of the Engineer; shall be buried under a minimum of 2 ft (600 mm) of earth cover (except when the materials include only uncontaminated dirt); and shall not create an unsightly appearance or detract from the natural topographic features of an area. Broken concrete without protruding metal bars, bricks, rock, or stone may be used as riprap as approved by the Engineer. If the materials are used for fill in locations within the right-of-way but outside project construction limits, the Contractor must specify to the Engineer, in writing, how the landscape restoration of the fill areas will be accomplished. Placement of fill in such areas shall not commence until the Contractor's landscape restoration plan is approved by the Engineer.

Aside from the materials listed above, all other construction and demolition debris or waste shall be disposed of in a licensed landfill, recycled, reused, or otherwise disposed of as allowed by State or Federal laws and regulations. When the Contractor chooses to dispose of uncontaminated soil at a clean construction and demolition debris (CCDD) facility or at an uncontaminated soil fill operation, it shall be the Contractor's responsibility to have the pH of the material tested to ensure the value is between 6.25 and 9.0, inclusive. A copy of the pH test results shall be provided to the Engineer.

A permit shall be obtained from IEPA and made available to the Engineer prior to open burning of organic materials (i.e., plant refuse resulting from pruning or removal of trees or shrubs) or other construction or demolition debris. Organic materials originating within the right-of-way limits may be chipped or shredded and placed as mulch around landscape plantings within the right-of-way when approved by the Engineer. Chipped or shredded material to be placed as mulch shall not exceed a depth of 6 in. (150 mm).”

RIGID METAL CONDUIT (BDE)

Effective: August 1, 2014

Add the following to Article 1088.01(a) of the Standard Specifications:

“(6) Stainless Steel Conduit. The conduit shall be Type 304 or Type 316 stainless steel, shall be manufactured according to UL Standard 6A, and shall meet ANSI Standard C80.1. Conduit fittings shall be Type 304 or Type 316 stainless steel and shall be manufactured according to UL Standard 514B.

All conduit supports, straps, clamps. And other attachments shall be Type 304 or Type 316 stainless steel. Attachment hardware shall be stainless steel according to Article 1006.31.”

SPEED DISPLAY TRAILER (BDE)

Effective: April 2, 2014

Add the following to Article 701.15(l) of the Standard Specifications:

“(l) Speed Display Trailer. A speed display trailer shall be utilized on freeways and expressways as part of Highway Standard 701400. The trailer shall be placed on the right hand side of the roadway adjacent to, or within 100 ft (30 m) beyond, the first work zone speed limit sign.

Whenever the speed display trailer is not in use, it shall be considered non-operating equipment and shall be stored according to Article 701.11.”

Add the following to Article 701.20 of the Standard Specifications:

“(k) Speed Display Trailer will be paid for at the contract unit price per calendar month or fraction thereof for each trailer as SPEED DISPLAY TRAILER.”

Add the following to Article 1106.02 of the Standard Specifications:

“(o) Speed Display Trailer. The speed display trailer shall consist of a LED speed indicator display with self-contained, one-direction radar mounted on an orange see-through trailer. The height of the display and radar shall be such that it will function and be visible when located behind concrete barrier.

The speed measurement shall be by radar and provide a minimum detection distance of 1000 ft (300 m). The radar shall have an accuracy of ± 1 mile per hour.

The speed indicator display shall face approaching traffic and shall have a sign legend of “YOUR SPEED” immediately above or below the speed display. The digital speed display shall show two digits (00 to 99) in mph. The color of the changeable message legend shall be a yellow legend on a black background. The minimum height of the numerals shall be 18 in. (450 mm), and the nominal legibility distance shall be at least 750 ft (250 m).

The speed indicator display shall be equipped with a violation alert that flashes the displayed detected speed when the posted limit is exceeded. The speed indicator shall have a maximum speed cutoff. The display shall include automatic dimming for nighttime operation.

The speed indicator measurement and display functions shall be equipped with the power supply capable of providing 24 hours of uninterrupted service.”

TRACKING THE USE OF PESTICIDES (BDE)

Effective: August 1, 2012

Add the following paragraph after the first paragraph of Article 107.23 of the Standard Specifications:

“Within 48 hours of the application of pesticides, including but not limited to herbicides, insecticides, algacides, and fungicides, the Contractor shall complete and return to the Engineer, Operations form “OPER 2720”.”

TRAFFIC CONTROL SETUP AND REMOVAL FREEWAY/EXPRESSWAY (BDE)

Effective: January 1, 2014

Add the following to the Article 701.18 of the Standard Specifications:

“(l) Standard 701428. When the shoulder width will not allow placement of the shoulder truck and provide 9 ft (3.0 m) of unobstructed lane width in the lane being closed, the shoulder truck shall not be used.”

Revise Article 701.19(a) of the Standard Specifications to read:

“(a) Not Measured. Traffic control and protection required under Standards 701001, 701006, 701011, 701101, 701106, 701301, 701311, 701400, 701426, 701427, and 701428 will not be measured for payment.”

WEEKLY DBE TRUCKING REPORTS (BDE)

Effective: June 2, 2012

The Contractor shall provide a weekly report of Disadvantaged Business Enterprise (DBE) trucks hired by the Contractor or subcontractors (i.e. not owned by the Contractor or subcontractors) that are used on the jobsite; or used for the delivery and/or removal of equipment/material to and from the jobsite. The jobsite shall also include offsite locations, such as plant sites or storage sites, when those locations are used solely for this contract.

The report shall be submitted on the form provided by the Department within ten business days following the reporting period. The reporting period shall be Monday through Sunday for each week reportable trucking activities occur. The report shall be submitted to the Engineer and a copy shall be provided to the district EEO Officer.

Any costs associated with providing weekly DBE trucking reports shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

PROJECT LABOR AGREEMENT - QUARTERLY EMPLOYMENT REPORT

Public Act 97-0199 requires the Department to submit quarterly reports regarding the number of minorities and females employed under Project Labor Agreements. To assist in this reporting effort, the Contractor shall provide a quarterly workforce participation report for all minority and female employees working under the project labor agreement of this contract. The data shall be reported on Construction Form BC 820, Project Labor Agreement (PLA) Workforce Participation Quarterly Reporting Form available on the Department's website <http://www.dot.il.gov/const/conforms.html>.

The report shall be submitted no later than the 15th of the month following the end of each quarter (i.e. April 15 for the January – March reporting period). The form shall be emailed to DOT.PLA.Reporting@illinois.gov or faxed to (217) 524-4922.

Any costs associated with complying with this provision shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

Illinois Department of Transportation
PROJECT LABOR AGREEMENT

This Project Labor Agreement (“PLA” or “Agreement”) is entered into this _____ day of _____, 2014, by and between the Illinois Department of Transportation (“IDOT” or “Department”) in its proprietary capacity, and each relevant Illinois AFL-CIO Building Trades signatory hereto as determined by the Illinois AFL-CIO Statewide Project Labor Agreement Committee on behalf of each of its affiliated members (individually and collectively, the “Unions”). This PLA shall apply to Construction Work (as defined herein) to be performed by IDOT’s Prime Contractor and each of its subcontractors of whatever tier (“Subcontractor” or “Subcontractors”) on Contract No. **74646** (hereinafter, the “Project”).

ARTICLE 1 - INTENT AND PURPOSES

- 1.1 This PLA is entered into in accordance with the Project Labor Agreement Act (“Act”, 30 ILCS 571). It is mutually understood and agreed that the terms and conditions of this PLA are intended to promote the public interest in obtaining timely and economical completion of the Project by encouraging productive and efficient construction operations; by establishing a spirit of harmony and cooperation among the parties; and by providing for peaceful and prompt settlement of any and all labor grievances or jurisdictional disputes of any kind without strikes, lockouts, slowdowns, delays, or other disruptions to the prosecution of the work. The parties acknowledge the obligations of the Contractors and Subcontractors to comply with the provisions of the Act. The parties will work with the Contractors and Subcontractors within the parameters of other statutory and regulatory requirements to implement the Act’s goals and objectives.
- 1.2 As a condition of the award of the contract for performance of work on the Project, IDOT’s Prime Contractor and each of its Subcontractors shall execute a “Contractor Letter of Assent”, in the form attached hereto as Exhibit A, prior to commencing Construction Work on the Project. The Contractor shall submit a Subcontractor’s Contractor Letter of Assent to the Department prior to the Subcontractor’s performance of Construction Work on the Project. Upon request copies of the applicable collective bargaining agreements will be provided by the appropriate signatory labor organization consistent with this Agreement and at the pre-job conference referenced in Article III, Section 3.1.
- 1.3 Each Union affiliate and separate local representing workers engaged in Construction Work on the Project in accordance with this PLA are bound to this agreement by the Illinois AFL-CIO Statewide Project Labor Agreement Committee which is the central committee established with full authority to negotiate and sign PLAs with the State on behalf of all respective crafts. Upon their signing the Contractor Letter of Assent, the Prime Contractor, each Subcontractor, and the individual Unions shall thereafter be deemed a party to this PLA. No party signatory to this PLA shall, contract or subcontract, nor permit any other person, firm, company, or entity to contract or subcontract for the performance of Construction Work for the Project to any person, firm, company, or entity that does not agree in writing to become bound for the term of this Project by the terms of this PLA prior to commencing such work and to the applicable area-wide collective bargaining agreement(s) with the Union(s) signatory hereto.

- 1.4 It is understood that the Prime Contractor(s) and each Subcontractor will be considered and accepted by the Unions as separate employers for the purposes of collective bargaining, and it is further agreed that the employees working under this PLA shall constitute a bargaining unit separate and distinct from all others. The parties hereto also agree that this PLA shall be applicable solely with respect to this Project, and shall have no bearing on the interpretation of any other collective bargaining agreement or as to the recognition of any bargaining unit other than for the specific purposes of this Project.
- 1.5 In the event of a variance or conflict, whether explicit or implicit, between the terms and conditions of this PLA and the provisions of any other applicable national, area, or local collective bargaining agreement, the terms and conditions of this PLA shall supersede and control. For any work performed under the NTL Articles of Agreement, the National Stack/Chimney Agreement, the National Cooling Tower Agreement, the National Agreement of the International Union of Elevator Constructors, and for any instrument calibration work and loop checking performed under the UA/IBEW Joint National Agreement for Instrument and Control Systems Technicians, the preceding sentence shall apply only with respect to Articles I, II, V, VI, and VII.
- 1.6 Subject to the provisions of paragraph 1.5 of this Article, it is the parties' intent to respect the provisions of any other collective bargaining agreements that may now or hereafter pertain, whether between the Prime Contractor and one or more of the Unions or between a Subcontractor and one or more of the Unions. Accordingly, except and to the extent of any contrary provision set forth in this PLA, the Prime Contractor and each of its Subcontractors agrees to be bound and abide by the terms of the following in order of precedence: (a) the applicable collective bargaining agreement between the Prime Contractor and one or more of the Unions made signatory hereto; (b) the applicable collective bargaining agreement between a Subcontractor and one or more of the Unions made signatory hereto; or (c) the current applicable area collective bargaining agreement for the relevant Union that is the agreement certified by the Illinois Department of Labor for purposes of establishing the Prevailing Wage applicable to the Project. The Union will provide copies of the applicable collective bargaining agreements pursuant to part (c) of the preceding sentence to the Prime Contractor. Assignments by the Contractors or Subcontractors amongst the trades shall be consistent with area practices; in the event of unresolved disagreements as to the propriety of such assignments, the provisions of Article VI shall apply.
- 1.7 Subject to the limitations of paragraphs 1.4 to 1.6 of this Article, the terms of each applicable collective bargaining agreement as determined in accordance with paragraph 1.6 are incorporated herein by reference, and the terms of this PLA shall be deemed incorporated into such other applicable collective bargaining agreements only for purposes of their application to the Project.

- 1.8 To the extent necessary to comply with the requirements of any fringe benefit fund to which the Prime Contractor or Subcontractor is required to contribute under the terms of an applicable collective bargaining agreement pursuant to the preceding paragraph, the Prime Contractor or Subcontractor shall execute all "Participation Agreements" as may be reasonably required by the Union to accomplish such purpose; provided, however, that such Participation Agreements shall, when applicable to the Prime Contractor or Subcontractor solely as a result of this PLA, be amended as reasonably necessary to reflect such fact. Upon written notice in the form of a lien of a Contractor's or Subcontractor's delinquency from any applicable fringe benefit fund, IDOT will withhold from the Contractor's periodic pay request an amount sufficient to extinguish any delinquency obligation of the Contractor or Subcontractor arising out of the Project.
- 1.9 In the event that the applicable collective bargaining agreement between a Prime Contractor and the Union or between the Subcontractor and the Union expires prior to the completion of this Project, the expired applicable contract's terms will be maintained until a new applicable collective bargaining agreement is ratified. The wages and fringe benefits included in any new applicable collective bargaining agreement will apply on and after the effective date of the newly negotiated collective bargaining agreement, except to the extent wage and fringe benefit retroactivity is specifically agreed upon by the relevant bargaining parties.

ARTICLE II – APPLICABILITY, RECOGNITION, AND COMMITMENTS

- 2.1 The term Construction Work as used herein shall include all "construction, demolition, rehabilitation, renovation, or repair" work performed by a "laborer or mechanic" at the "site of the work" for the purpose of "building" the specific structures and improvements that constitute the Project. Terms appearing within quotation marks in the preceding sentence shall have the meaning ascribed to them pursuant to 29 CFR Part 5 and Illinois labor laws.
- 2.2 By executing the Letters of Assent, Prime Contractor and each of its Subcontractors recognizes the Unions signatory to this PLA as the sole and exclusive bargaining representatives for their craft employees employed on the jobsite for this Project. Unions who are signatory to this PLA will have recognition on the Project for their craft.
- 2.3 The Prime Contractor and each of its Subcontractors retains and shall be permitted to exercise full and exclusive authority and responsibility for the management of its operations, except as expressly limited by the terms of this PLA or by the terms and conditions of the applicable collective bargaining agreement.
- 2.4 Except to the extent contrary to an express provision of the relevant collective bargaining agreement, equipment or materials used in the Project may be pre-assembled or pre-fabricated, and there shall be no refusal by the Union to handle, transport, install, or connect such equipment or materials. Equipment or materials delivered to the job-site will be unloaded and handled promptly without regard to potential jurisdictional disputes; any such disputes shall be handled in accordance with the provisions of this PLA.

- 2.5 The parties are mutually committed to promoting a safe working environment for all personnel at the job-site. It shall be the responsibility of each employer to which this PLA applies to provide and maintain safe working conditions for its employees, and to comply with all applicable federal, state, and local health and safety laws and regulations.
- 2.6 The use or furnishing of alcohol or drugs and the conduct of any other illegal activity at the job-site is strictly prohibited. The parties shall take every practical measure consistent with the terms of applicable collective bargaining agreements to ensure that the job-site is free of alcohol and drugs.
- 2.7 All parties to this PLA agree that they will not discriminate against any employee based on race, creed, religion, color, national origin, union activity, age, gender or sexual orientation and shall comply with all applicable federal, state, and local laws.
- 2.8 In accordance with the Act and to promote diversity in employment, IDOT will establish, in cooperation with the other parties, the apprenticeship hours which are to be performed by minorities and females on the Project. IDOT shall consider the total hours to be performed by these underrepresented groups, as a percentage of the workforce, and create aspirational goals for each Project, based on the level of underutilization for the service area of the Project (together "Project Employment Objectives"). IDOT shall provide a quarterly report regarding the racial and gender composition of the workforce on the Project.

Persons currently lacking qualifications to enter apprenticeship programs will have the opportunity to obtain skills through basic training programs as have been established by the Department. The parties will endeavor to support such training programs to allow participants to obtain the requisite qualifications for the Project Employment Objectives.

The parties agree that all Contractors and Subcontractors working on the Project shall be encouraged to utilize the maximum number of apprentices as permitted under the terms of the applicable collective bargaining agreements to realize the Project Employment Objectives.

The Unions shall assist the Contractor and each Subcontractor in efforts to satisfy Project Employment Objectives. A Contractor or Subcontractor may request from a Union specific categories of workers necessary to satisfy Project Employment Objectives. The application of this section shall be consistent with all local Union collective bargaining agreements, and the hiring hall rules and regulations established for the hiring of personnel, as well as the apprenticeship standards set forth by each individual Union.

- 2.9 The parties hereto agree that engineering/architectural/surveying consultants' materials testing employees are subject to the terms of this PLA for Construction Work performed for a Contractor or Subcontractor on this Project. These workers shall be fully expected to objectively and responsibly perform their duties and obligations owed to the Department without regard to the potential union affiliation of such employees or of other employees on the Project.

- 2.10 This Agreement shall not apply to IDOT employees or employees of any other governmental entity.

ARTICLE III - ADMINISTRATION OF AGREEMENT

- 3.1 In order to assure that all parties have a clear understanding of the PLA, and to promote harmony, at the request of the Unions a post-award pre-job conference will be held among the Prime Contractor, all Subcontractors and Union representatives prior to the start of any Construction Work on the Project. No later than the conclusion of such pre-job conference, the parties shall, among other matters, provide to one another contact information for their respective representatives (including name, address, phone number, facsimile number, e-mail). Nothing herein shall be construed to limit the right of the Department to discuss or explain the purpose and intent of this PLA with prospective bidders or other interested parties prior to or following its award of the job.
- 3.2 Representatives of the Prime Contractor and the Unions shall meet as often as reasonably necessary following award until completion of the Project to assure the effective implementation of this PLA.
- 3.3 Any notice contemplated under Article VI and VII of this Agreement to a signatory labor organization shall be made in writing to the Local Union with copies to the local union's International Representative.

ARTICLE IV - HOURS OF WORK AND GENERAL CONDITIONS

- 4.1 The standard work day and work week for Construction Work on the Project shall be consistent with the respective collective bargaining agreements. In the event Project site or other job conditions dictate a change in the established starting time and/or a staggered lunch period for portions of the Project or for specific crafts, the Prime Contractor, relevant Subcontractors and business managers of the specific crafts involved shall confer and mutually agree to such changes as appropriate. If proposed work schedule changes cannot be mutually agreed upon between the parties, the hours fixed at the time of the pre-job meeting shall prevail.
- 4.2 Shift work may be established and directed by the Prime Contractor or relevant Subcontractor as reasonably necessary or appropriate to fulfill the terms of its contract with the Department. If used, shift hours, rates and conditions shall be as provided in the applicable collective bargaining agreement.
- 4.3 The parties agree that chronic and/or unexcused absenteeism is undesirable and must be controlled in accordance with procedures established by the applicable collective bargaining agreement. Any employee disciplined for absenteeism in accordance with such procedures shall be suspended from all work on the Project for not less than the maximum period permitted under the applicable collective bargaining agreement.
- 4.4 Except as may be otherwise expressly provided by the applicable collective bargaining agreement, employment begins and ends at the Project site; employees shall be at their place of work at the starting time; and employees shall remain at their place of work until quitting time.

- 4.5 Except as may be otherwise expressly provided by the applicable collective bargaining agreement, there shall be no limit on production by workmen, no restrictions on the full use of tools or equipment, and no restrictions on efficient use of manpower or techniques of construction other than as may be required by safety regulations.
- 4.6 The parties recognize that specialized or unusual equipment may be installed on the Project. In such cases, the Union recognizes the right of the Prime Contractor or Subcontractor to involve the equipment supplier or vendor's personnel in supervising the setting up of the equipment, making modifications and final alignment, and performing similar activities that may be reasonably necessary prior to and during the start-up procedure in order to protect factory warranties. The Prime Contractor or Subcontractor shall notify the Union representatives in advance of any work at the job-site by such vendor personnel in order to promote a harmonious relationship between the equipment vendor's personnel and other Project employees.
- 4.7 For the purpose of promoting full and effective implementation of this PLA, authorized Union representatives shall have access to the Project job-site during scheduled work hours. Such access shall be conditioned upon adherence to all reasonable visitor and security rules of general applicability that may be established for the Project site at the pre-job conference or from time to time thereafter.

ARTICLE V – GRIEVANCE PROCEDURES FOR DISPUTES ARISING UNDER A PARTICULAR COLLECTIVE BARGAINING AGREEMENT

- 5.1 In the event a dispute arises under a particular collective bargaining agreement specifically not including jurisdictional disputes referenced in Article VI below, said dispute shall be resolved by the Grievance/Arbitration procedure of the applicable collective bargaining agreement. The resulting determination from this process shall be final and binding on all parties bound to its process.
- 5.2 Employers covered under this Agreement shall have the right to discharge or discipline any employee who violates the provisions of this Agreement. Such discharge or discipline by a contractor or subcontractor shall be subject to Grievance/Arbitration procedure of the applicable collective bargaining agreement only as to the fact of such violation of this agreement. If such fact is established, the penalty imposed shall not be disturbed. Work at the Project site shall continue without disruption or hindrance of any kind as a result of a Grievance/Arbitration procedure under this Article.
- 5.3 In the event there is a deadlock in the foregoing procedure, the parties agree that the matter shall be submitted to arbitration for the selection and decision of an Arbitrator governed under paragraph 6.8.

ARTICLE VI –DISPUTES: GENERAL PRINCIPLES

- 6.1 This Agreement is entered into to prevent strikes, lost time, lockouts and to facilitate the peaceful adjustment of jurisdictional disputes in the building and construction industry and to prevent waste and unnecessary avoidable delays and expense, and for the further purpose of at all times securing for the employer sufficient skilled workers.

- 6.2 A panel of Permanent Arbitrators are attached as addendum (A) to this agreement. By mutual agreement between IDOT and the Unions, the parties can open this section of the agreement as needed to make changes to the list of permanent arbitrators.
- 6.3 The PLA Jurisdictional Dispute Resolution Process ("Process") sets forth the procedures below to resolve jurisdictional disputes between and among Contractors, Subcontractors, and Unions engaged in the building and construction industry. Further, the Process will be followed for any grievance or dispute arising out of the interpretation or application of this PLA by the parties except for the prohibition on attorneys contained in 6.11. All decisions made through the Process are final and binding upon all parties.

DISPUTE PROCESS

- 6.4 Administrative functions under the Process shall be performed through the offices of the President and/or Secretary-Treasurer of the Illinois State Federation of Labor, or their designated representative, called the Administrator. In no event shall any officer, employee, agent, attorney, or other representative of the Illinois Federation of Labor, AFL-CIO be subject to any subpoena to appear or testify at any jurisdictional dispute hearing.
- 6.5 There shall be no abandonment of work during any case participating in this Process or in violation of the arbitration decision. All parties to this Process release the Illinois State Federation of Labor ("Federation") from any liability arising from its action or inaction and covenant not to sue the Federation, nor its officers, employees, agents or attorneys.
- 6.6 In the event of a dispute relating to trade or work jurisdiction, all parties, including the employers, Contractors or Subcontractors, agree that a final and binding resolution of the dispute shall be resolved as follows:
- (a) Representatives of the affected trades and the Contractor or Subcontractor shall meet on the job site within two (2) business days after receiving written notice in an effort to resolve the dispute. (In the event there is a dispute between local unions affiliated with the same International Union, the decision of the General President, or his/her designee, as the internal jurisdictional authority of that International Union, shall constitute a final and binding decision and determination as to the jurisdiction of work.)
 - (b) If no settlement is achieved subsequent to the preceding Paragraph, the matter shall be referred to the local area Building & Construction Trades Council, which shall meet with the affected trades within two (2) business days subsequent to receiving written notice. In the event the parties do not wish to avail themselves of the local Building & Construction Trades Council, the parties may elect to invoke the services of their respective International Representatives with no extension of the time limitations. An agreement reached at this Step shall be final and binding upon all parties.

(c) If no settlement agreement is reached during the proceedings contemplated by Paragraphs "a" or "b" above, the matter shall be immediately referred to the Illinois Jurisdictional Dispute Process for final and binding resolution of said dispute. Said referral submission shall be in writing and served upon the Illinois State Federation of Labor, or the Administrator, pursuant to paragraph 6.4 of this agreement. The Administrator shall, within three (3) days, provide for the selection of an available Arbitrator to hear said dispute within this time period. Upon good cause shown and determined by the Administrator, an additional three (3) day extension for said hearing shall be granted at the sole discretion of the Administrator. Only upon mutual agreement of all parties may the Administrator extend the hearing for a period in excess of the time frames contemplated under this Paragraph. Business days are defined as Monday through Friday, excluding contract holidays.

6.7 The primary concern of the Process shall be the adjustment of jurisdictional disputes arising out of the Project. A sufficient number of Arbitrators shall be selected from list of approved Arbitrators as referenced Sec. 6.2 and shall be assigned per Sec. 6.8. Decisions shall be only for the Project and shall become effective immediately upon issuance and complied with by all parties. The authority of the Arbitrator shall be restricted and limited specifically to the terms and provisions of Article VI and generally to this Agreement as a whole.

6.8 The Arbitrator chosen shall be randomly selected based on the list of Arbitrators in Sec. 6.2 and geographical location of the jurisdictional dispute and upon his/her availability, and ability to conduct a Hearing within two (2) business days of said notice. The Arbitrator may issue a "bench" decision immediately following the Hearing or he/she may elect to only issue a written decision, said decision must be issued within two (2) business days subsequent to the completion of the Hearing. Copies of all notices, pleadings, supporting memoranda, decisions, etc. shall be provided to all disputing parties and the Illinois State Federation of Labor.

Any written decision shall be in accordance with this Process and shall be final and binding upon all parties to the dispute and may be a "short form" decision. Fees and costs of the arbitrator shall be divided evenly between the contesting parties except that any party wishing a full opinion and decision beyond the short form decision shall bear the reasonable fees and costs of such full opinion. The decision of the Arbitrator shall be final and binding upon the parties hereto, their members, and affiliates.

In cases of jurisdictional disputes or other disputes between a signatory labor organization and another labor organization, both of which is an affiliate or member of the same International Union, the matter or dispute shall be settled in the manner set forth by their International Constitution and/or as determined by the International Union's General President whose decision shall be final and binding upon all parties. In no event shall there be an abandonment of work.

6.9 In rendering a decision, the Arbitrator shall determine:

(a) First, whether a previous agreement of record or applicable agreement, including a disclaimer agreement, between National or International Unions to the dispute or agreements between local unions involved in the dispute, governs;

- (b) Only if the Arbitrator finds that the dispute is not covered by an appropriate or applicable agreement of record or agreement between the crafts to the dispute, he shall then consider the established trade practice in the industry and prevailing practice in the locality. Where there is a previous decision of record governing the case, the Arbitrator shall give equal weight to such decision of record, unless the prevailing practice in the locality in the past ten years favors one craft. In that case, the Arbitrator shall base his decision on the prevailing practice in the locality. Except, that if the Arbitrator finds that a craft has improperly obtained the prevailing practice in the locality through raiding, the undercutting of wages or by the use of vertical agreements, the Arbitrator shall rely on the decision of record and established trade practice in the industry rather than the prevailing practice in the locality; and,
- (c) Only if none of the above criteria is found to exist, the Arbitrator shall then consider that because efficiency, cost or continuity and good management are essential to the well being of the industry, the interests of the consumer or the past practices of the employer shall not be ignored.
- 6.10 The Arbitrator shall set forth the basis for his/her decision and shall explain his/her findings regarding the applicability of the above criteria. If lower ranked criteria are relied upon, the Arbitrator shall explain why the higher-ranked criteria were not deemed applicable. The Arbitrator's decision shall only apply to the Project. Agreements of Record, for other PLA projects, are applicable only to those parties signatory to such agreements. Decisions of Record are those that were either attested to by the former Impartial Jurisdictional Disputes Board or adopted by the National Arbitration Panel.
- 6.11 All interested parties, as determined by the Arbitrator, shall be entitled to make presentations to the Arbitrator. Any interested labor organization affiliated to the PLA Committee and party present at the Hearing, whether making a presentation or not, by such presence shall be deemed to accept the jurisdiction of the Arbitrator and to agree to be bound by its decision. In addition to the representative of the local labor organization, a representative of the labor organization's International Union may appear on behalf of the parties. Each party is responsible for arranging for its witnesses. In the event an Arbitrator's subpoena is required, the party requiring said subpoena shall prepare the subpoena for the Arbitrator to execute. Service of the subpoena upon any witness shall be the responsibility of the issuing party.
- Attorneys shall not be permitted to attend or participate in any portion of a Hearing.
- The parties are encouraged to determine, prior to Hearing, documentary evidence which may be presented to the Arbitrator on a joint basis.
- 6.12 The Order of Presentation in all Hearings before an Arbitrator shall be
- I. Identification and Stipulation of the Parties
 - II. Unions(s) claiming the disputed work presents its case
 - III. Union(s) assigned the disputed work presents its case
 - IV. Employer assigning the disputed work presents its case
 - V. Evidence from other interested parties (i.e., general contractor, project manager, owner)

- VI. Rebuttal by union(s) claiming the disputed work
VII. Additional submissions permitted and requested by Arbitrator
VIII. Closing arguments by the parties
- 6.13 All parties bound to the provisions of this Process hereby release the Illinois State Federation of Labor and IDOT, their respective officers, agents, employees or designated representatives, specifically including any Arbitrator participating in said Process, from any and all liability or claim, of whatsoever nature, and specifically incorporating the protections provided in the Illinois Arbitration Act, as amended from time to time.
- 6.14 The Process, as an arbitration panel, nor its Administrator, shall have any authority to undertake any action to enforce its decision(s). Rather, it shall be the responsibility of the prevailing party to seek appropriate enforcement of a decision, including findings, orders or awards of the Arbitrator or Administrator determining non-compliance with a prior award or decision.
- 6.15 If at any time there is a question as to the jurisdiction of the Illinois Jurisdictional Dispute Resolution Process, the primary responsibility for any determination of the arbitrability of a dispute and the jurisdiction of the Arbitrator shall be borne by the party requesting the Arbitrator to hear the underlying jurisdictional dispute. The affected party or parties may proceed before the Arbitrator even in the absence or one or more stipulated parties with the issue of jurisdiction as an additional item to be decided by the Arbitrator. The Administrator may participate in proceedings seeking a declaration or determination that the underlying dispute is subject to the jurisdiction and process of the Illinois Jurisdictional Dispute Resolution Process. In any such proceedings, the non-prevailing party and/or the party challenging the jurisdiction of the Illinois Jurisdictional Dispute Resolution Process shall bear all the costs, expenses and attorneys' fees incurred by the Illinois Jurisdictional Dispute Resolution Process and/or its Administrator in establishing its jurisdiction.

ARTICLE VII - WORK STOPPAGES AND LOCKOUTS

- 7.1 During the term of this PLA, no Union or any of its members, officers, stewards, employees, agents or representatives shall instigate, support, sanction, maintain, or participate in any strike, picketing, walkout, work stoppage, slow down or other activity that interferes with the routine and timely prosecution of work at the Project site or at any other contractor's or supplier's facility that is necessary to performance of work at the Project site. Hand billing at the Project site during the designated lunch period and before commencement or following conclusion of the established standard workday shall not, in itself, be deemed an activity that interferes with the routine and timely prosecution of work on the Project.
- 7.2 Should any activity prohibited by paragraph 7.1 of this Article occur, the Union shall undertake all steps reasonably necessary to promptly end such prohibited activities.

7.2.A No Union complying with its obligations under this Article shall be liable for acts of employees for which it has no responsibility or for the unauthorized acts of employees it represents. Any employee who participates or encourages any activity prohibited by paragraph 7.1 shall be immediately suspended from all work on the Project for a period equal to the greater of (a) 60 days; or (b) the maximum disciplinary period allowed under the applicable collective bargaining agreement for engaging in comparable unauthorized or prohibited activity.

7.2.B Neither the PLA Committee nor its affiliates shall be liable for acts of employees for which it has no responsibility. The principal officer or officers of the PLA Committee will immediately instruct, order and use the best efforts of his office to cause the affiliated union or unions to cease any violations of this Article. The PLA Committee in its compliance with this obligation shall not be liable for acts of its affiliates. The principal officer or officers of any involved affiliate will immediately instruct, order or use the best effort of his office to cause the employees the union represents to cease any violations of this Article. A union complying with this obligation shall not be liable for unauthorized acts of employees it represents. The failure of the Contractor to exercise its rights in any instance shall not be deemed a waiver of its rights in any other instance.

During the term of this PLA, the Prime Contractor and its Subcontractors shall not engage in any lockout at the Project site of employees covered by this Agreement.

7.3 Upon notification of violations of this Article, the principal officer or officers of the local area Building and Construction Trades Council, and the Illinois AFL-CIO Statewide Project Labor Agreement Committee as appropriate, will immediately instruct, order and use their best efforts to cause the affiliated union or unions to cease any violations of this Article. A Trades Council and the Committee otherwise in compliance with the obligations under this paragraph shall not be liable for unauthorized acts of its affiliates.

7.4 In the event that activities in violation of this Article are not immediately halted through the efforts of the parties, any aggrieved party may invoke the special arbitration provisions set forth in paragraph 7.5 of this Article.

7.5 Upon written notice to the other involved parties by the most expeditious means available, any aggrieved party may institute the following special arbitration procedure when a breach of this Article is alleged:

7.5.A The party invoking this procedure shall notify the individual designated as the Permanent Arbitrator pursuant to paragraph 6.8 of the nature of the alleged violation; such notice shall be by the most expeditious means possible. The initiating party may also furnish such additional factual information as may be reasonably necessary for the Permanent Arbitrator to understand the relevant circumstances. Copies of any written materials provided to the arbitrator shall also be contemporaneously provided by the most expeditious means possible to the party alleged to be in violation and to all other involved parties.

- 7.5.B Upon receipt of said notice the Permanent Arbitrator shall set and hold a hearing within twenty-four (24) hours if it is contended the violation is ongoing, but not before twenty-four (24) hours after the written notice to all parties involved as required above.
- 7.5.C The Permanent Arbitrator shall notify the parties by facsimile or any other effective written means, of the place and time chosen by the Permanent Arbitrator for this hearing. Said hearing shall be completed in one session. A failure of any party or parties to attend said hearing shall not delay the hearing of evidence or issuance of an Award by the Permanent Arbitrator.
- 7.5.D The sole issue at the hearing shall be whether a violation of this Article has, in fact, occurred. An Award shall be issued in writing within three (3) hours after the close of the hearing, and may be issued without a written opinion. If any party desires a written opinion, one shall be issued within fifteen (15) days, but its issuance shall not delay compliance with, or enforcement of, the Award. The Permanent Arbitrator may order cessation of the violation of this Article, and such Award shall be served on all parties by hand or registered mail upon issuance.
- 7.5.E Such Award may be enforced by any court of competent jurisdiction upon the filing of the Award and such other relevant documents as may be required. Facsimile or other hardcopy written notice of the filing of such enforcement proceedings shall be given to the other relevant parties. In a proceeding to obtain a temporary order enforcing the Permanent Arbitrator's Award as issued under this Article, all parties waive the right to a hearing and agree that such proceedings may be ex parte. Such agreement does not waive any party's right to participate in a hearing for a final order of enforcement. The Court's order or orders enforcing the Permanent Arbitrator's Award shall be served on all parties by hand or by delivery to their last known address or by registered mail.
- 7.6 Individuals found to have violated the provisions of this Article are subject to immediate termination. In addition, IDOT reserves the right to terminate this PLA as to any party found to have violated the provisions of this Article.
- 7.7 Any rights created by statute or law governing arbitration proceedings inconsistent with the above procedure or which interfere with compliance therewith are hereby waived by parties to whom they accrue.
- 7.8 The fees and expenses of the Permanent Arbitrator shall be borne by the party or parties found in violation, or in the event no violation is found, such fees and expenses shall be borne by the moving party.

ARTICLE VIII – TERMS OF AGREEMENT

- 8.1 If any Article or provision of this Agreement shall be declared invalid, inoperative or unenforceable by operation of law or by any of the above mentioned tribunals of competent jurisdiction, the remainder of this Agreement or the application of such Article or provision to persons or circumstances other than those as to which it has been held invalid, inoperative or unenforceable shall not be affected thereby.
- 8.2 This Agreement shall be in full force as of and from the date of the Notice of Award until the Project contract is closed.
- 8.3 This PLA may not be changed or modified except by the subsequent written agreement of the parties. All parties represent that they have the full legal authority to enter into this PLA. This PLA may be executed by the parties in one or more counterparts.
- 8.4 Any liability arising out of this PLA shall be several and not joint. IDOT shall not be liable to any person or other party for any violation of this PLA by any other party, and no Contractor or Union shall be liable for any violation of this PLA by any other Contractor or Union.
- 8.5 The failure or refusal of a party to exercise its rights hereunder in one or more instances shall not be deemed a waiver of any such rights in respect of a separate instance of the same or similar nature.

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Addendum A

IDOT Slate of Permanent Arbitrators

1. Bruce Feldacker
2. Thomas F. Gibbons
3. Edward J. Harrick
4. Brent L. Motchan
5. Robert Perkovich
6. Byron Yaffee
7. Glenn A. Zipp

Execution Page

Illinois Department of Transportation

Omer Osman, Director of Highways

Matthew Hughes, Director Finance & Administration

Michael A. Forti, Chief Counsel

Ann L. Schneider, Secretary

(Date)

Illinois AFL-CIO Statewide Project Labor Agreement Committee, representing the Unions listed below:

(Date)

List Unions:

****RETURN WITH BID****

Exhibit A - Contractor Letter of Assent

(Date)

To All Parties:

In accordance with the terms and conditions of the contract for Construction Work on [Contract No. **74643**], this Letter of Assent hereby confirms that the undersigned Prime Contractor or Subcontractor agrees to be bound by the terms and conditions of the Project Labor Agreement established and entered into by the Illinois Department of Transportation in connection with said Project.

It is the understanding and intent of the undersigned party that this Project Labor Agreement shall pertain only to the identified Project. In the event it is necessary for the undersigned party to become signatory to a collective bargaining agreement to which it is not otherwise a party in order that it may lawfully make certain required contributions to applicable fringe benefit funds, the undersigned party hereby expressly conditions its acceptance of and limits its participation in such collective bargaining agreement to its work on the Project.

(Authorized Company Officer)

(Company)

****RETURN WITH BID****

REVISIONS TO THE ILLINOIS PREVAILING WAGE RATES

The Prevailing rates of wages are included in the Contract proposals which are subject to Check Sheet #5 of the Supplemental Specifications and Recurring Special Provisions. The rates have been ascertained and certified by the Illinois Department of Labor for the locality in which the work is to be performed and for each craft or type of work or mechanic needed to execute the work of the Contract. As required by Prevailing Wage Act (820 ILCS 130/0.01, et seq.) and Check Sheet #5 of the Contract, not less than the rates of wages ascertained by the Illinois Department of Labor and as revised during the performance of a Contract shall be paid to all laborers, workers and mechanics performing work under the Contract. Post the scale of wages in a prominent and easily accessible place at the site of work.

If the Illinois Department of Labor revises the prevailing rates of wages to be paid as listed in the specification of rates, the contractor shall post the revised rates of wages and shall pay not less than the revised rates of wages. Current wage rate information shall be obtained by visiting the Illinois Department of Labor web site at <http://www.state.il.us/agency/idol/> or by calling 312-793-2814. It is the responsibility of the contractor to review the rates applicable to the work of the contract at regular intervals in order to insure the timely payment of current rates. Provision of this information to the contractor by means of the Illinois Department of Labor web site satisfies the notification of revisions by the Department to the contractor pursuant to the Act, and the contractor agrees that no additional notice is required. The contractor shall notify each of its subcontractors of the revised rates of wages.