## If you plan to submit a bid directly to the Department of Transportation

### 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 that 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.

### REQUESTS FOR AUTHORIZATION TO BID

Contractors downloading and/or ordering CD-ROM's and are 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 124INT) and the ORIGINAL, signed and notarized, "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.

### 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.

**WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID?** When a prospective prime bidder submits a "Request for Authorization to Bid/or Not For Bid Status"(BDE 124INT) 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 a **Proposal Denial and/or Authorization Form**, approved by the Central Bureau of Construction, that indicates which items have been approved For Bidding. If **Authorization to Bid** cannot be approved, the **Proposal Denial and/or Authorization Form** will indicate the reason for denial.

**ABOUT AUTHORIZATION TO BID:** Firms that have not received an authorization form within a reasonable time of complete and correct original document submittal should contact the department as to status. This is critical in the week before the letting. These documents must be received three days before the letting date. 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 contractor'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 will be placed with the contract number. 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 server e-mails are an added courtesy the Department provides. It is suggested that bidder check IDOT's website http://www.dot.il.gov/desenv/delett.html before submitting final bid information.

**IDOT is not responsible for any e-mail related failures.**

Addenda Questions may be directed to the Contracts Office at (217)782-7806 or D&Econtracts@dot.il.gov

Technical Questions about downloading these files may be directed to Tim Garman (217)524-1642 or garmantr@dot.il.gov.

**WHAT MUST BE INCLUDED WHEN BIDS ARE SUBMITTED?**: Bidders need not return the entire proposal when bids are submitted. That portion of the proposal that must be returned includes the following:

1. All documents from the Proposal Cover Sheet through the Proposal Bid Bond
2. Other special documentation and/or information that may be required by the contract special provisions

All proposal documents, including Proposal Guaranty Checks or Proposal Bid Bonds, should be stapled together to prevent loss when bids are processed by IDOT personnel.

**ABOUT SUBMITTING BIDS**: It is recommended that bidders deliver bids in person to insure they arrive at the proper location prior to the time specified for the receipt of bids. Any bid received at the place of letting after the time specified will not be accepted.

**WHO SHOULD BE CALLED IF ASSISTANCE IS NEEDED?**

| **Questions Regarding** | **Call** |
|---|---|
| Prequalification and/or Authorization to Bid | (217)782-3413 |
| Preparation and submittal of bids | (217)782-7806 |
| Mailing of plans and proposals | (217)782-7806 |
| Electronic plans and proposals | (217)524-1642 |

**ADDENDUMS AND REVISIONS TO THE PROPOSAL FORMS**

Planholders should verify that they have received and incorporated the addendum and/or revision prior to submitting their bid. Failure by the bidder to include an addendum could result in a bid being rejected as irregular.

RETURN WITH BID

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| Proposal Submitted By |
| --- |
| Name |
| Address |
| City |

**Letting January 18, 2008**

BIDDERS NEED NOT RETURN THE ENTIRE PROPOSAL
(See instructions inside front cover)

**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.**
**(SEE INSTRUCTIONS ON THE INSIDE OF COVER)**

# Notice To Bidders, Specifications, Proposal, Contract and Contract Bond

Illinois Department of Transportation

**Springfield, Illinois 62764**

**Contract No. 60D22**
**Various Counties**
**Section 2007-038I**
**District 1 Formal Contract**
**Various Routes**

PLEASE MARK THE APPROPRIATE BOX BELOW:

☐ A Bid Bond is included.

☐ A Cashier's Check or a Certified Check is included.

Plans Included Herein

Prepared by

S

Checked by

(Printed by authority of the State of Illinois)

## INSTRUCTIONS

**ABOUT IDOT PROPOSALS**: All proposals issued by IDOT are potential bidding proposals. Each proposal contains all Certifications and Affidavits, a Proposal Signature Sheet and a Proposal Bid Bond required for Prime Contractors to submit a bid after written **Authorization to Bid** has been issued by IDOT's Central Bureau of Construction.

**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. To request authorization, a potential bidder must complete and submit Part B of the Request for Authorization to Bid/or Not For Bid Status form (BDE 124 INT) and submit an original Affidavit of Availability (BC 57).

**WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID**?: When a prospective prime bidder submits a "Request for Proposal Forms and Plans" 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 a **Proposal Denial and/or Authorization Form**, approved by the Central Bureau of Construction, that indicates which items have been approved For Bidding. If **Authorization to Bid** cannot be approved, the **Proposal Denial and/or Authorization Form** will indicate the reason for denial. If a contractor has requested to bid but has not received a **Proposal Denial and/or Authorization Form**, they should contact the Central Bureau of Construction in advance of the letting date.

**WHAT MUST BE INCLUDED WHEN BIDS ARE SUBMITTED**?: Bidders need not return the entire proposal when bids are submitted. That portion of the proposal that must be returned includes the following:

1. All documents from the Proposal Cover Sheet through the Proposal Bid Bond

2. Other special documentation and/or information that may be required by the contract special provisions

All proposal documents, including Proposal Guaranty Checks or Proposal Bid Bonds, should be stapled together to prevent loss when bids are processed by IDOT personnel.

**ABOUT SUBMITTING BIDS**: It is recommended that bidders deliver bids in person to insure they arrive at the proper location prior to the time specified for the receipt of bids. Any bid received at the place of letting after the time specified will not be accepted.

**WHO SHOULD BE CALLED IF ASSISTANCE IS NEEDED?**

| **Questions Regarding** | **Call** |
|---|---|
| Prequalification and/or Authorization to Bid | 217/782-3413 |
| Preparation and submittal of bids | 217/782-7806 |
| Mailing of CD-ROMS | 217/782-7806 |

**RETURN WITH BID**

Illinois Department of Transportation

# 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. 60D22**
**Various Counties**
**Section 2007-038I**
**Various Routes**
**District 1 Formal Contract**

**Annual maintenance of REVLAC, Roosevelt Ramp Access Controls, CCTV, SONET, Expressway Ramp Gates and Automatic Vehicle Locator System in District One.**

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 shall govern performance and payments.

**RETURN WITH BID**

3. **ASSURANCE OF EXAMINATION AND INSPECTION/WAIVER.** The undersigned further declares that he/she has carefully examined the proposal, plans, specifications, form of contract and contract bond, and special provisions, and that he/she has inspected in detail the site of the proposed work, and that he/she has familiarized themselves with all of the local conditions affecting the contract and the detailed requirements of construction, and understands that in making this proposal he/she waives all right to plead any misunderstanding regarding the same.

4. **EXECUTION OF CONTRACT AND CONTRACT BOND.** The undersigned further agrees to execute a contract for this work and present the same to the department within fifteen (15) days after the contract has been mailed to him/her. The undersigned further agrees that he/she and his/her surety will execute and present within fifteen (15) days after the contract has been mailed to him/her contract bond satisfactory to and in the form prescribed by the Department of Transportation, in the penal sum of the full amount of the contract, guaranteeing the faithful performance of the work in accordance with the terms of the contract.

5. **PROPOSAL GUARANTY.** Accompanying this proposal is either a bid bond on the department form, executed by a corporate surety company satisfactory to the department, or a proposal guaranty check consisting of a bank cashier's check or a properly certified check for not less than 5 per cent of the amount bid or for the amount specified in the following schedule:

| Amount of Bid | | | Proposal Guaranty | Amount of Bid | | | Proposal Guaranty |
|---|---|---|---|---|---|---|---|
| Up to | | $5,000 | $150 | $2,000,000 | to | $3,000,000 | $100,000 |
| $5,000 | to | $10,000 | $300 | $3,000,000 | to | $5,000,000 | $150,000 |
| $10,000 | to | $50,000 | $1,000 | $5,000,000 | to | $7,500,000 | $250,000 |
| $50,000 | to | $100,000 | $3,000 | $7,500,000 | to | $10,000,000 | $400,000 |
| $100,000 | to | $150,000 | $5,000 | $10,000,000 | to | $15,000,000 | $500,000 |
| $150,000 | to | $250,000 | $7,500 | $15,000,000 | to | $20,000,000 | $600,000 |
| $250,000 | to | $500,000 | $12,500 | $20,000,000 | to | $25,000,000 | $700,000 |
| $500,000 | to | $1,000,000 | $25,000 | $25,000,000 | to | $30,000,000 | $800,000 |
| $1,000,000 | to | $1,500,000 | $50,000 | $30,000,000 | to | $35,000,000 | $900,000 |
| $1,500,000 | to | $2,000,000 | $75,000 | over | | $35,000,000 | $1,000,000 |

Bank cashier's checks or properly certified checks accompanying proposals shall be made payable to the Treasurer, State of Illinois, when the state is awarding authority; the county treasurer, when a county is the awarding authority; or the city, village, or town treasurer, when a city, village, or town is the awarding authority.

If a combination bid is submitted, the proposal guaranties which accompany the individual proposals making up the combination will be considered as also covering the combination bid.

The amount of the proposal guaranty check is _____ $(  ). If this proposal is accepted and the undersigned shall fail to execute a contract bond as required herein, it is hereby agreed that the amount of the proposal guaranty shall become the property of the State of Illinois, and shall be considered as payment of damages due to delay and other causes suffered by the State because of the failure to execute said contract and contract bond; otherwise, the bid bond shall become void or the proposal guaranty check shall be returned to the undersigned.

**Attach Cashier's Check or Certified Check Here**

In the event that one proposal guaranty check is intended to cover two or more proposals, the amount must be equal to the sum of the proposal guaranties which would be required for each individual proposal. If the guaranty check is placed in another proposal, state below where it may be found.

The proposal guaranty check will be found in the proposal for:

Item _____

Section No. _____

County _____

**Mark the proposal cover sheet as to the type of proposal guaranty submitted.**

BD 354 (Rev. 11/2001)

6. **COMBINATION BIDS.** The undersigned 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 proposal 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 shall 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. **CERTIFICATE OF AUTHORITY.** The undersigned bidder, if a business organized under the laws of another State, assures the Department that it will furnish a copy of its certificate of authority to do business in the State of Illinois with the return of the executed contract and bond. Failure to furnish the certificate within the time provided for execution of an awarded contract may be cause for cancellation of the award and forfeiture of the proposal guaranty to the State.

**ILLINOIS DEPARTMENT OF TRANSPORTATION**
**SCHEDULE OF PRICES**
**CONTRACT NUMBER - 60D22**

**State Job # -** C-91-356-07
**PPS NBR -** F-ORMAL- CON
**County Name -** VARIOUS- -
**Code -** 0 - -
**District -** 0 - -
**Section Number -** 2007-038I

**Project Number**

**Route** VARIOUS

| Item Number | Pay Item Description | Unit of Measure | Quantity | x | Unit Price | = | Total Price |
|---|---|---|---|---|---|---|---|
| X0320990 | D1 ELECT MAINT | L SUM | 1.000 | | | | |

**CONTRACT NUMBER** **60D22**

**THIS IS THE TOTAL BID** **$** _____

## RETURN WITH BID

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

### I. GENERAL

**A.** Article 50 of the Illinois Procurement Code establishes the duty of all State chief procurement officers, State purchasing officers, 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. By execution of the Proposal Signature Sheet, the bidder indicates that each of the mandated assurances has 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 termination of the contract and the suspension or debarment of the bidder.

### II. ASSURANCES

**A.** 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. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous assurance, and the surety providing the performance bond shall be responsible for the completion of the contract.

**B. Felons**

1. The Illinois Procurement Code provides:

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 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.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-10.

**C. Conflicts of Interest**

1. The Illinois Procurement Code provides in pertinent part:

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 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 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 $171,000.00. Sixty percent of the salary is $102,600.00.

2. 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 and Executive Order Number 3 (1998). Information concerning the exemption process is available from the Department upon request.

**D. Negotiations**

1. The Illinois Procurement Code provides in pertinent part:

Section 50-15. Negotiations.

(a) 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.

2. 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.

**E. Inducements**

1. The Illinois Procurement Code provides:

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.

2. 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.

**F. Revolving Door Prohibition**

1. The Illinois Procurement Code provides:

Section 50-30. Revolving door prohibition. Chief procurement officers, associate procurement officers, State purchasing officers, 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.

2. 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.

**G. Reporting Anticompetitive Practices**

1. The Illinois Procurement Code provides:

Section 50-40. Reporting anticompetitive practices. When, for any reason, any vendor, bidder, contractor, chief procurement officer, State purchasing officer, 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 chief procurement officer.

2. 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.

**H. Confidentiality**

1. The Illinois Procurement Code provides:

Section 50-45. Confidentiality. Any chief procurement officer, State purchasing officer, 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.

2. 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.

## RETURN WITH BID

**I. Insider Information**

1. The Illinois Procurement Act provides:

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.

2. 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.

**III. CERTIFICATIONS**

**A.** 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. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous certification, and the surety providing the performance bond shall be responsible for completion of the contract.

**B. Bribery**

1. The Illinois Procurement Code provides:

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 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, 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 1961.

(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 shall contain a certification by the contractor that the contractor is not barred from being awarded a contract or subcontract under this Section. A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

2. The bidder certifies that it is not barred from being awarded a contract under Section 50.5.

**C. Educational Loan**

1. Section 3 of the Educational Loan Default Act provides:

§ 3. 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.

2. 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.

**D. Bid-Rigging/Bid Rotating**

1. Section 33E-11 of the Criminal Code of 1961 provides:

§ 33E-11. (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. The State and units of local government shall provide the appropriate forms for such certification.

(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.

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.

2. 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.

**E. International Anti-Boycott**

1. Section 5 of the International Anti-Boycott Certification Act provides:

§ 5. State contracts. 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.

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

**F. Drug Free Workplace**

1. 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.

2. The bidder certifies that if awarded a contract in excess of $5,000 it will provide a drug free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance, including cannabis, is prohibited in the contractor’s workplace; specifying the actions that will be taken against employees for violations of such prohibition; and notifying the employee that, as a condition of employment on such contract, the employee shall abide by the terms of the statement, and notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.

(b) Establishing a drug free awareness program to inform employees about the dangers of drug abuse in the workplace; the contractor’s policy of maintaining a drug free workplace; any available drug counseling, rehabilitation, and employee assistance programs; and the penalties that may be imposed upon employees for drug violations.

(c) Providing a copy of the statement required by subparagraph (1) to each employee engaged in the performance of the contract and to post the statement in a prominent place in the workplace.

(d) Notifying the Department within ten (10) days after receiving notice from an employee or otherwise receiving actual notice of the conviction of an employee for a violation of any criminal drug statute occurring in the workplace.

(e) Imposing or requiring, within 30 days after receiving notice from an employee of a conviction or actual notice of such a conviction, an appropriate personnel action, up to and including termination, or the satisfactory participation in a drug abuse assistance or rehabilitation program approved by a federal, state or local health, law enforcement or other appropriate agency.

(f) Assisting employees in selecting a course of action in the event drug counseling, treatment, and rehabilitation is required and indicating that a trained referral team is in place.

(g) Making a good faith effort to continue to maintain a drug free workplace through implementation of the actions and efforts stated in this certification.

**G. Debt Delinquency**

1. The Illinois Procurement Code provides:

Section 50-11 and 50-12. Debt Delinquency.
The contractor or bidder certifies that it, or any affiliate, is not barred from being awarded a contract under 30 ILCS 500. Section 50-11 prohibits a person from entering into a contract with a State agency 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 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 contractor further acknowledges that the contracting State agency may declare the contract void if this certification is false or if the contractor, or any affiliate, is determined to be delinquent in the payment of any debt to the State during the term of the contract.

**H. Sarbanes-Oxley Act of 2002**

1. The Illinois Procurement Code provides:

Section 50-60(c).
The contractor 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 for a period of five years prior to the date of the bid or contract. The contractor acknowledges that the contracting agency shall declare the contract void if this certification is false.

**I. Addenda**

The contractor or bidder certifies that all relevant addenda have been incorporated in to this contract. Failure to do so may cause the bid to be declared unacceptable.

**J. Section 42 of the Environmental Protection Act**

The contractor certifies in accordance with 30 ILCS 500/50-12 that the bidder or contractor is not barred from being awarded a contract under this Section which prohibits the bidding on or entering into contracts with the State of Illinois or a State agency 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 contractor acknowledges that the contracting agency may declare the contract void if this certification is false.

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

In accordance with the provisions of Section 30-22 (6) of the Illinois Procurement 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.

**L. Executive Order Number 1 (2007) Regarding Lobbying on Government Procurements**

The bidder hereby warrants and certifies that they have complied and will comply with the requirements set forth in this Order. The requirements of this warrant and certification are a material part of the contract, and the contractor shall require this warrant and certification provision to be included in all approved subcontracts.



**M. Disclosure of Business Operations in Iran**

Public Act 95-0616 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 Act.

Failure to make the disclosure required by the Act shall cause the bid, offer or proposal to be considered not responsive. The disclosure will be considered when evaluating the bid, offer, or proposal 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.

## TO BE RETURNED 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 Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous disclosure, 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 Illinois Procurement Code provides that all bids of more than $10,000 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.

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 400 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.

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. Subject individuals should be covered each by one form. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies. **The forms must be included with each bid or incorporated by reference.**

**C. Disclosure Form Instructions**

**Form A: For bidders that have previously submitted the information requested in Form A**

The Department has retained the Form A disclosures submitted by all bidders responding to these requirements for the April 24, 1998 or any subsequent letting conducted by the Department. The bidder has the option of submitting the information again or the bidder may check the following certification statement indicating that the information previously submitted by the bidder is, as of the date of submission, current and accurate. Before checking this certification, the bidder should carefully review its prior submissions to ensure the Certification is correct. If the Bidder checks the Certification, the Bidder should proceed to Form B instructions.

## CERTIFICATION STATEMENT

**I have determined that the Form A disclosure information previously submitted is current and accurate, and all forms are hereby incorporated by reference in this bid. Any necessary additional forms or amendments to previously submitted forms are attached to this bid.**

_____
(Bidding Company)

☐ _____ _____
Signature of Authorized Representative Date

**Form A: For bidders who have NOT previously submitted the information requested in Form A**

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 400 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 the second page of 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 $102,600.00? YES ___ NO___
3. Does anyone in your organization receive more than $102,600.00 of the bidding entity's or parent entity's distributive income? (Note: Distributive income is, for these purposes, any type of distribution of profits. An annual salary is not distributive income.) YES ___ NO ___
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 $102,600.00? 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 on page 2 of Form A must be signed and dated by a person that is authorized to execute contracts for your company.

**Form B**: **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.

**D. Bidders Submitting More Than One Bid**

Bidders submitting multiple bids may submit one set of forms consisting of all required Form A disclosures and one Form B for use with all bids. Please indicate in the space provided below the bid item that contains the original disclosure forms and the bid items which incorporate the forms by reference.

- The bid submitted for letting item _____ contains the Form A disclosures or Certification Statement and the Form B disclosures. The following letting items incorporate the said forms by reference:

_____

_____

**RETURN WITH BID/OFFER**

# 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 Illinois Procurement 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 $10,000, 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.**

**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 $102,600.00 (60% of the Governor's salary as of 7/1/07). **(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.

1. Are you currently an officer or employee of either the Capitol Development Board or the Illinois 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 $102,600.00, (60% of the Governor's salary as of 7/1/07) provide the name the State agency for which you are employed and your annual salary. _____
_____

3. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds $102,600.00, (60% of the Governor's salary as of 7/1/07) 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 the 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 $102,600.00, (60% of the Governor's salary as of 7/1/07) 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 2 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 $102,600.00, (60 % of the Governor's salary as of 7/1/07) 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 $102,600.00, (60% of the salary of the Governor as of 7/1/07) are you entitled to receive (i) more then 71/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of the 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 $102,600.00, (60% of the Governor's salary as of 7/1/07) 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 2 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 __

---

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(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 __

---

**APPLICABLE STATEMENT**

**This Disclosure Form A is submitted on behalf of the INDIVIDUAL named on previous page.**

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

**NOT APPLICABLE STATEMENT**

**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.**

☐ _____ _____
Signature of Authorized Representative Date

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# ILLINOIS DEPARTMENT OF TRANSPORTATION

## Form B
## Other Contracts & Procurement 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 Illinois Procurement Act (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 $10,000, 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

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## 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.

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Illinois Department of Transportation

**Contract No. 60D22**
**Various Counties**
**Section 2007-038I**
**Various Routes**
**District 1 Formal Contract**

**PART I. IDENTIFICATION**

Dept. Human Rights #_____ Duration of Project: _____

Name of Bidder: _____

**PART II. WORKFORCE PROJECTION**

A. The undersigned bidder has analyzed minority group and female populations, unemployment rates and availability of workers for the location in which this contract work is to be performed, and for the locations from which the bidder recruits employees, and hereby submits the following workforce projection including a projection for minority and female employee utilization in all job categories in the workforce to be allocated to this contract:

TABLE A

| TOTAL Workforce Projection for Contract | | | | | | | | | | | | | TABLE B: CURRENT EMPLOYEES TO BE ASSIGNED TO CONTRACT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | MINORITY EMPLOYEES | | | | | | TRAINEES | | | | | | | |
| JOB CATEGORIES | TOTAL EMPLOYEES | | BLACK | | HISPANIC | | *OTHER MINOR. | | APPREN-TICES | | ON THE JOB TRAINEES | | TOTAL EMPLOYEES | | MINORITY EMPLOYEES | |
| | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F |
| OFFICIALS (MANAGERS) | | | | | | | | | | | | | | | | |
| SUPERVISORS | | | | | | | | | | | | | | | | |
| FOREMEN | | | | | | | | | | | | | | | | |
| CLERICAL | | | | | | | | | | | | | | | | |
| EQUIPMENT OPERATORS | | | | | | | | | | | | | | | | |
| MECHANICS | | | | | | | | | | | | | | | | |
| TRUCK DRIVERS | | | | | | | | | | | | | | | | |
| IRONWORKERS | | | | | | | | | | | | | | | | |
| CARPENTERS | | | | | | | | | | | | | | | | |
| CEMENT MASONS | | | | | | | | | | | | | | | | |
| ELECTRICIANS | | | | | | | | | | | | | | | | |
| PIPEFITTERS, PLUMBERS | | | | | | | | | | | | | | | | |
| PAINTERS | | | | | | | | | | | | | | | | |
| LABORERS, SEMI-SKILLED | | | | | | | | | | | | | | | | |
| LABORERS, UNSKILLED | | | | | | | | | | | | | | | | |
| TOTAL | | | | | | | | | | | | | | | | |

TABLE C

| TOTAL Training Projection for Contract | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| EMPLOYEES IN TRAINING | TOTAL EMPLOYEES | | BLACK | | HISPANIC | | *OTHER MINOR. | |
| | M | F | M | F | M | F | M | F |
| APPRENTICES | | | | | | | | |
| ON THE JOB TRAINEES | | | | | | | | |

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*Other minorities are defined as Asians (A) or Native Americans (N).

Please specify race of each employee shown in Other Minorities column.

**Note: See instructions on the next page**

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IL 494-0454

**RETURN WITH BID**

**Contract No. 60D22**
**Various Counties**
**Section 2007-038I**
**Various Routes**
**District 1 Formal Contract**

**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 only 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.

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**RETURN WITH BID**

**Contract No. 60D22**
**Various Counties**
**Section 2007-038I**
**Various Routes**
**District 1 Formal Contract**

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.

Firm Name _____

(IF AN INDIVIDUAL)

Signature of Owner _____

Business Address _____

_____

---

Firm Name _____

By _____

(IF A CO-PARTNERSHIP)

Business Address _____

_____

Name and Address of All Members of the Firm:

_____ _____

_____ _____

---

Corporate Name _____

By _____

Signature of Authorized Representative

_____

Typed or printed name and title of Authorized Representative

(IF A CORPORATION)

Attest _____

Signature

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

Business Address _____

_____

---

Corporate Name _____

By _____

Signature of Authorized Representative

_____

Typed or printed name and title of Authorized Representative

(IF A JOINT VENTURE)

Attest _____

Signature

Business Address _____

_____

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

---

**RETURN WITH BID**

Illinois Department of Transportation

**Division of Highways**
**Proposal Bid Bond**
(Effective November 1, 1992)

Item No. _____
Letting Date _____

KNOW ALL MEN BY THESE PRESENTS, That We _____

_____

as PRINCIPAL, and _____

_____ as SURETY, are 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 Article 102.09 of the "Standard Specifications for Road and Bridge Construction" in effect on the date of 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, submit a DBE Utilization Plan that is accepted and approved by the Department; 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 make the required DBE submission or 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 and the said SURETY have caused this instrument to be signed by their respective officers this _____ day of _____ A.D., _____.

**PRINCIPAL**

_____
(Company Name)

By: _____
(Signature & Title)

**SURETY**

_____
(Company Name)

By: _____
(Signature of Attorney-in-Fact)

**Notary Certification for Principal and Surety**

STATE OF ILLINOIS,
COUNTY OF _____

I, _____, a Notary Public in and for said County, do hereby certify that

_____and _____

(Insert names of individuals signing on behalf of PRINCIPAL & SURETY)

who are each personally known to me to be the same persons whose names are subscribed to the foregoing instrument on behalf of PRINCIPAL and SURETY, appeared before me this day in person and acknowledged respectively, that they signed and delivered said instrument as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this _____ day of _____, A.D. _____.

My commission expires _____ _____
Notary Public

In lieu of completing the above section of the Proposal Bid Form, the Principal may file an Electronic Bid Bond. By signing below 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

# PROPOSAL ENVELOPE

Illinois Department of Transportation

# 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. 60D22**
**Various Counties**
**Section 2007-038I**
**Various Routes**
**District 1 Formal Contract**

Illinois Department of Transportation

Illinois Department of Transportation

# 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 at the Harry R. Hanley Building, 2300 South Dirksen Parkway, in Springfield, Illinois until 10:00 o'clock a.m., January 18, 2008. 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. 60D22**
   **Various Counties**
   **Section 2007-038I**
   **Various Routes**
   **District 1 Formal Contract**

**Annual maintenance of REVLAC, Roosevelt Ramp Access Controls, CCTV, SONET, Expressway Ramp Gates and Automatic Vehicle Locator System in District One.**

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

Milton R. Sees, Secretary

INDEX
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2008

This index contains a listing of SUPPLEMENTAL SPECIFICATIONS and frequently used RECURRING SPECIAL PROVISIONS.

ERRATA Standard Specifications for Road and Bridge Construction (Adopted 1-1-07) (Revised 1-1-08)

SUPPLEMENTAL SPECIFICATIONS

RECURRING SPECIAL PROVISIONS

The following RECURRING SPECIAL PROVISIONS indicated by an "X" are applicable to this contract and are included by reference:

**ASMC**
**TABLE OF CONTENTS**

# STATE OF ILLINOIS

# SPECIAL PROVISIONS

## 1.0 DESCRIPTION

The District 1 Advanced Systems Maintenance Contract (ASMC) serves as one of several contracts utilized by the Illinois Department of Transportation (IDOT), Division of Highways, District 1, to maintain and utilize electrical transportation support systems. In general, the ASMC covers certain technology-dependent items of equipment and their controls and communications, generally within or on IDOT facilities within the 6-county area of District 1 (Cook, Lake, McHenry, Kane, DuPage and Will counties), but at times involving system extensions to other facilities. The elements to be served by the Contract are generally aggregated into defined "systems" as described herein:

- The Kennedy Expressway Reversible Lane Access Control (REVLAC) System
- The Roosevelt Ramp Access Control System (RACS)
- Various Closed Circuit (CCTV) systems within District 1, as defined
- District Operations Network (DON)
- Automatic Vehicle Locator System (AVL)
- Other Systems (Expressway Ramp Gates (ERG), GCM Network Gateway)

The work required shall be coordinated, as necessary, with work under other contracts, particularly the District 1 Electrical Maintenance Contract and the Statewide Radio Maintenance Contract. The work is separated into Routine Maintenance and Non-Routine Maintenance as defined with the articles of the Contract.

## 1.1 PRE-BID MEETING

The Contract work shall be performed only by a contractor having the special expertise and organizational capabilities necessary to accomplish its scope of work. All bidders must be pre-approved by the IDOT Central Bureau of Operations, prior to bidding upon the Advanced Systems Maintenance Contract. The tentative date and venue for the Pre-bid meeting are:

**10:30 AM, Thursday, December 27, 2007**
Illinois Department of Transportation
Materials Lab Classroom
101 West Center Court
Schaumburg, IL. 60196-1096

The bidders shall check with IDOT Central Bureau of Operations for any changes to the above schedule and venue.

## 1.2 BIDDERS' SPECIAL QUALIFICATION SUBMITTAL INSTRUCTIONS

Due to the specialized and multi-technology nature of the work under this contract, and the need for a real-time response to system maintenance 24-hours a day, the prospective bidders shall submit their qualification information to allow determination of the bidder's ability to perform the

contract work. Therefore, each prospective bidder shall submit the following special qualification information for review and evaluation by the Department prior to being allowed to bid. The qualification information shall address each item listed below, clearly identifying the respective item number.

1. **A descriptive list of project work having incorporating related technologies,** complete with the name and phone number of a customer reference contact for each listed project:

   Project descriptions shall describe the nature of the project, the portion of the project actually performed by the Contractor, the dollar value of the contractor's portion of the project, electrical work and technology which is related to the electrical systems and technology employed in REVLAC and RACS, and a listing of subcontractors' and in-house personnel involved in the work who would be employed in the ASMC contract.

   To be considered qualified for the ASMC work, a prospective bidder must demonstrate existing in-house capabilities and experience in understanding and managing large-scale multi-technology projects that include complex computerized controls, wireless data transfer and utilization, Microwave system, AC power and DC control systems, fiber optic data transmission, CCTV systems and miscellaneous support and auxiliary functions. In addition, a qualified bidder will have on-board staff, present from the time of bidding, capable of outside electrical work on the state highway right-of-way and significant experience and staffing capable of electrical work in buildings, with capabilities of reading, understanding and designing electrical control circuits in ladder logic and in trouble-shooting standard and PLC-based control circuits and lane access control (gates and barrier assemblies) systems.

2. **A detailed 24-hour emergency response plan:**

   Existing capability to handle 24-hour response activities as specified must be demonstrated.

   To be considered qualified for the ASMC work, the Contractor shall provide a specific detailed response plan describing how the 24-hour emergency response provisions of the contract will be met. The response plan shall include proposed responses to lane access control system, PLC, SONET, fiber, Microwave and CCTV failures, as well as equipment damage. Generic or hypothetical plans will not be acceptable.

3. **A preliminary organizational structure for management and execution of ASMC contract work:**

   The contractor's structure shall include all personnel specified in these Special Provisions plus any additional key personnel the contractor references to establish its position of experience and credentials in ASMC technologies. The structure shall be accompanied by resumes of listed personnel, and these shall describe work history and current level of expertise applicable to the ASMC systems.

   A qualified bidder will demonstrate a structure which meets the intent of the specified requirements with currently employed in-house staff on board and firm commitments from any subcontracted firms and personnel in the form of letters of intent signed by principals of the firm involved. Personnel experience credentials shall match the work requirements of the contract. The Project Manager shall have experience in managing complex multi-technology systems which incorporate Microwave communication, SONET, fiberoptic and PLC systems.

4. **Documentation of an existing presence within IDOT District 1,** with a location and description of headquarters, yard, storage and facilities proposed to be used in performing the ASMC contract work:

   A qualified bidder must demonstrate an existing presence and workforce proximity to the work in District 1. It will not be acceptable to base qualification of a bidder on the promise of mobilization and on only a plan to acquire the personnel and resources necessary to perform the work.

5. **A listing of key subcontractors,** complete with intended subcontractor work items:

   The listing shall identify the specialty work intended for the subcontractor and shall include subcontractor project background relevant to the ASMC work together with resumes of key subcontractor personnel to be employed in maintaining the ASMC systems. Due to the required response times, the proposed subcontractors, except for the original software developer, shall have an established presence within District 1.

   A qualified bidder will presently have significant in-house expertise, staffing and resources for the work. Expertise which is not resident in-house must be demonstrated to be acquired by firm commitments with subcontractors in the form of letters of intent signed by principals of the firms involved who shall also demonstrate the necessary expertise, staffing and clearly state a commitment for a 24-hour, 7-day a week response for the proposed subcontracted work. The submittal must clearly demonstrate that the subcontractor has specific experience with the type of equipment used in the ASMC.

   It will not be acceptable to subcontract the work to the extent that a bidder can avoid the need for significant in-house multi-technology expertise. To this extent the Contractor is reminded of the requirements of Section 108.01 of the Standard Specifications.

6. **A description of existing and ongoing work with large-scale Allen Bradley programmable logic control (PLC) systems**, complete with a listing of all on-board personnel who have completed factory training on these systems:

   A qualified bidder must presently have a local response capability with significant familiarity with Allen-Bradley PLC equipment and generation and troubleshooting of ladder logic used in the REVLAC and RACS systems. The listing of personnel shall also include which factory training classes were taken, when they were taken and results of any factory certification.

   There is insufficient time to base qualification on the promise to acquire this capability, and such promise is insufficient guarantee to the Department that a bidder will be capable of keeping the REVLAC and RACS systems operational.

7. **Documentation to demonstrate compliance with the software developer requirements specified herein:**

   The complicated nature of the programming for the system, and the need to modify this programming as part of the planned work under this contract, necessitates that a qualified bidder establish a firm connection and commitment in the form of a letter of intent signed by the principals involved with the original software developer or an acceptable alternate developer who must demonstrate, as defined elsewhere herein, competency and expert fluency in the programming used on the REVLAC and RACS system and a willingness to respond 24 hours a day, 7 days a week. See specifications elsewhere herein.

**8. Description of ongoing work in fiber optic and microwave systems relevant to the ASMC:**

A qualified bidder must be familiar and experienced in maintaining and managing fiber optic and microwave system work of the type used in the ASMC systems. Certain work on this technology may be subcontracted, but such subcontracting must be firmly committed with signed letters of intent from the subcontractors in the qualification documentation, and the bidder must presently have a 24 hour, 7 day a week local response capability with personnel experienced in coordinating the integration of these types of systems with other systems of the type in place on the ASMC system.

**9. CCTV Capabilities:**

A qualified bidder must have in-house familiarity and capability in installing and maintaining CCTV systems and qualification documentation shall present project and staff experience in this regard. The Contractor may, however, utilize a specialty subcontractor to perform CCTV work. The intent to use a subcontractor, the extent of subcontracted work, and the identification of the subcontractor shall be part of the qualification documentation.

**10. District Operations Network Capabilities:**

A qualified bidder shall demonstrate a definitive plan to handle maintenance of the District Operations Network (DON) which includes the SONET system installed as part of the REVLAC and RACS systems, CCTV equipment (including future IP multicast) and Gig-E network equipment. The bidder shall have established a conditional arrangement with manufacturer's service or an otherwise factory-authorized service provider for the maintenance of the SONET communications equipment for on-call service that involves mapping or other setup or software work. Connections, power supplies, auxiliary devices, etc. may be handled by qualified Contractor personnel, but unless the Contractor, or an approved subcontractor, is an authorized service provider for the installed SONET equipment, the contractor must supplement his staff with outsourced specialty service. The qualification documentation shall clearly define the established service relationships, qualifications of in-house staff, and the identity and qualifications of the supplemental service provided.

**11. Identification of key equipment** presently owned and employed by the bidder, or, if leased, to be immediately available for response to the maintenance needs of the ASMC systems:

Inasmuch as immediate rapid response to the maintenance needs of the ASMC systems are extremely important to the reliability of the system and flow of traffic on the Kennedy and Eisenhower Expressways, a qualified bidder, having a presence proximital to the system in District 1, must have sufficient mobile equipment to handle response activities. Trucks, lifts for access to signs and barrier devices, cranes and hoists to handle component equipment, etc. are all to be considered in determining qualification.

**12. A statement, signed by the bidder, attesting that the information submitted is accurate and truthful:**

The information so submitted is for purposes of determining the overall expertise and capability of the contractor to perform the work required by this maintenance contract and qualification of a contractor to bid in no way relieves that contractor from full compliance with contract specifications if awarded the contract. The Engineer may request

supplemental information to help determine qualification. Separate post-award submittals are required as specified elsewhere herein, and this pre-bid submittal shall not relieve the successful contractor of those requirements. With the approval of the Engineer, the Contractor may make revisions to this submittal information when submitting after award, and the Engineer reserves the right to separately review and approve the final staffing plan and other submittal information based on specified contract requirements.

The Contractor is fully responsible for submitting the information responsive to the requirements listed herein. Any misrepresentation of qualifications submitted in this process or incomplete treatment of information is the responsibility of the bidder. The Department may solicit clarifications of submitted information.

This information shall be submitted in two sealed packages, one of each addressed to the following:

Mr. Joseph S. Hill, P.E.
Engineer of Operations
Attn: Jim Schoenherr
2300 South Dirksen Parkway
Springfield, Illinois 62704

and

Diane O'Keefe, P.E.
Region I Engineer
Attn.: Martin E. Anderson, P.E.
201 West Center Court
Schaumburg, Illinois 60196-1096

The submitted information will be analyzed and, if requested by the Engineer, the prospective bidder shall facilitate an inspection of its facilities and/or equipment. The Engineer shall determine the aggregate suitability and acceptability of the qualification information submitted. If it is determined that the prospective bidder is qualified to perform the work then the prospective bidder may request bidding documents.

## 1.3 SCHEDULE OF PRICES/SUMMARY OF PRICES

1. Each Pay Item shall have a unit price and an extended price.
2. The unit price shall govern if no total price is shown or if there is a discrepancy between the total price and the product of the unit price and the quantity.
3. If a unit price is omitted, the extended price will be divided by the quantity in order to establish a unit price.
4. A bid will be declared unacceptable if neither unit price nor an extended price is shown.
5. All bidders understand that the quantities in the schedule of prices will be used for calculating a gross sum for the comparison of bids and for determining the qualified low bidder.
6. The Contractor will be paid only for actual quantities of work performed and accepted, but not for estimated quantities in the schedule of prices.
7. Non-routine work will be authorized based on preventive maintenance reports, ongoing operational needs and system improvement needs. The Department is under no obligation to authorize any non-routine pay item work.

8. Quantities for bidding are only estimates and actual quantities may vary. The pace of construction activities as well as a number of other unpredictable factors will cause variances from these indicated quantities, both for routine maintenance pay item and non-routine pay item quantities.
9. The bidder's unit prices are expected to be realistic and no additional compensation will be allowed due to variances in quantities, however, the Engineer retains the right to seek a revised unit price where quantities exceed to the extent that additional economies of scale would be normal.
10. The Engineer retains the right to use force account procedures or use other procurement means available to the Department where unit prices are significantly higher than the Department or project norms. The bidders are cautioned against unbalanced bidding and are directed to Article 102.01 of the Standard Specifications.

**SCHEDULE OF PRICES**

| Item | Description | Qty. | Unit | Unit Price | Extended Price |
|---|---|---|---|---|---|
| | **ROUTINE MAINTENANCE** | | | | |
| A - 1 | Routine Maintenance of REVLAC System | 12 | Mo | $ | $ |
| A - 2 | Routine Maintenance of RACS | 12 | Mo | $ | $ |
| A - 3 | Routine Maintenance of CCTV System | 12 | Mo | $ | $ |
| A - 4 | Routine Maintenance of District Operations Network | 12 | Mo | $ | $ |
| A - 5 | Routine Maintenance of AVL System | 12 | Mo | $ | $ |
| A - 6 | Routine Maintenance of Other Systems | 12 | Mo | $ | $ |
| | Routine Maintenance Sub-total | | | | **$** |
| | | | | | |
| | | | | | |
| | **NON-ROUTINE MAINTENANCE** | | | | |
| ACB1 | Multiconductor Power Cable, Install Only | 1,600 | Ft | $ | $ |
| ACB2 | Multiconductor Control Cable, Install Only | 1,600 | Ft | $ | $ |
| ACB3 | Existing Cable from Conduit, Remove Only | 1,600 | Ft | $ | $ |
| ACC1 | CCTV Camera for Construction Areas, Furnish and Install | 3 | Ea | $ | $ |
| ACC2 | CCTV Camera for Construction Areas, Removal, Salvage | 3 | Ea | $ | $ |
| ACC3 | CCTV Dome Camera Assembly, Color, PTZ Control, Furnish Only | 4 | Ea | $ | $ |
| ACC4 | CCTV Dome Camera Assembly, Color, PTZ Control, Install Only | 4 | Ea | $ | $ |
| ACC5 | CCTV Camera, Furnish and Install | 1 | Ea | $ | $ |

| | | | | | |
|---|---|---|---|---|---|
| ACC6 | CCTV Camera Assembly, Color, Fixed Control, Furnish and Install | 15 | Ea | $ | $ |
| ACC7 | CCTV Camera Assembly, Color, Fixed, Removal and Salvage | 15 | Ea | $ | $ |
| ACM1 | CCTV Color Monitor, Quad, 4", Furnish Only | 6 | Ea | $ | $ |
| ACM2 | CCTV Color Monitor, 8.4", Furnish Only | 6 | Ea | $ | $ |
| ACM3 | CCTV Color Monitor, Dual, 8.4", Furnish Only | 6 | Ea | $ | $ |
| ACM4 | CCTV Color Monitor, 12", Furnish Only | 2 | Ea | $ | $ |
| ACM5 | CCTV LCD Monitor, Furnish Only | 2 | Ea | $ | $ |
| ACM6 | CCTV LCD Monitor, Install Only | 2 | | | |
| ACP1 | CCTV Camera Pole, Furnish Only | 15 | Ea | $ | $ |
| ACP2 | CCTV Camera Pole, Install Only | 15 | Ea | $ | $ |
| ACP3 | CCTV Camera Lowering System, Furnish Only | 2 | Ea | $ | $ |
| ACP4 | CCTV Camera Lowering System, Install Only | 2 | | | |
| ACP5 | CCTV Camera Mount for Light Tower, Retrofit | 6 | Ea | $ | $ |
| ACT1 | CCTV Camera Transformer Base, Furnish Only | 4 | Ea | $ | $ |
| ACT2 | CCTV Camera Transformer Base, Install Only | 4 | Ea | $ | $ |
| AGW1 | Group Washing of Swing Gate Arms and Auxiliary Signs | 18 | Ea | $ | $ |
| ALD1 | LED Chevron Sign, Furnish Only | 4 | Ea | $ | $ |
| ALD2 | LED Auxiliary Sign, Furnish Only | 3 | Ea | $ | $ |
| ALD3 | LED Lane Usage Sign, Furnish Only | 1 | Ea | $ | $ |
| ALD4 | LED or Fiber Optic Sign, Install Only | 3 | Ea | $ | $ |

| | | | | | |
|---|---|---|---|---|---|
| ALD5 | LED Gore Sign, Furnish Only | 1 | Ea | $ | $ |
| ALD6 | LED Gore Sign, Install Only | 1 | Ea | $ | $ |
| ARG1 | Ramp Gate Assembly, 23', Furnish Only | 3 | Ea | $ | $ |
| ARG2 | Ramp Gate Assembly, 25', Furnish Only | 3 | Ea | $ | $ |
| ARG3 | Ramp Gate Assembly, 27.5', Furnish Only | 3 | Ea | $ | $ |
| ARG4 | Ramp Gate Assembly, 30', Furnish Only | 3 | Ea | $ | $ |
| ARG5 | Ramp Gate, Install with Concrete Foundation | 12 | Ea | $ | $ |
| ARG6 | Ramp Gate Arm, 23', Furnish Only | 2 | Ea | $ | $ |
| ARG7 | Ramp Gate Arm, 25', Furnish Only | 2 | Ea | $ | $ |
| AGR8 | Ramp Gate Arm, 27.5', Furnish Only | 2 | Ea | $ | $ |
| ARG9 | Ramp Gate Arm, 30', Furnish Only | 2 | Ea | $ | $ |
| ARM1 | Ramp Sand Module Impact Attenuators and Base, Furnish and Install | 10 | Ea | $ | $ |
| ARR1 | Restraining Barrier Tape Cartridge, Furnish Only | 2 | Ea | $ | $ |
| ARR2 | Restraining Barrier Tape Cartridge, Install Only | 2 | Ea | $ | $ |
| ARR3 | Restraining Barrier Crash Detector Assembly, Furnish Only | 2 | Ea | $ | $ |
| ARR4 | Restraining Barrier Crash Detector Assembly, Install Only | 2 | Ea | $ | $ |
| ARR5 | Restraining Barrier Dragnet Assembly, Furnish Only | 1 | Ea | $ | $ |
| ARR6 | Restraining Barrier Dragnet Assembly, Install Only | 1 | Ea | $ | $ |
| ASC1 | Swing Gate Controller, Furnish Only | 1 | Ea | $ | $ |

| | | | | | |
|---|---|---|---|---|---|
| ASC2 | Swing Gate Controller, Install Only | 1 | Ea | $ | $ |
| ASD1 | Swing Gate Drivetrain Assembly, Furnish Only | 1 | Ea | $ | $ |
| ASD2 | Swing Gate Drivetrain Assembly, Install Only | 1 | Ea | $ | $ |
| ASG1 | Swing Gate Arm, 2' to 4', Furnish Only | 2 | Ea | $ | $ |
| ASG2 | Swing Gate Arm, 5' to 8', Furnish Only | 4 | Ea | $ | $ |
| ASG3 | Swing Gate Arm, 9' to 12', Furnish Only | 4 | Ea | $ | $ |
| ASG4 | Swing Gate Arm, 13' to 16', Furnish Only | 4 | Ea | $ | $ |
| ASG5 | Swing Gate Arm, 17' to 20', Furnish Only | 6 | Ea | $ | $ |
| ASG6 | Swing Gate Arm, 21' to 23', Furnish Only | 6 | Ea | $ | $ |
| ASG7 | Swing Gate Arm Capstan and Bracket Assembly, Furnish Only | 2 | Ea | $ | $ |
| ASG8 | Swing Gate Arm Proximity Switch, Furnish Only | 4 | Ea | $ | $ |
| ASG9 | Swing Gate Arm Proximity Switch, Install Only | 4 | Ea | $ | $ |
| ASH1 | Swing Gate Arm Hand Crank, Furnish Only | 2 | Ea | $ | $ |
| ASR1 | Swing Gate Arm Striping, Remove and Replace | 1,500 | Ft | $ | $ |
| ATC1 | Traffic Control for Non-Routine Work, 1 Lane Expy Day Closure | 2 | Ea | $ | $ |
| ATC2 | Traffic Control for Non-Routine Work, 1 Lane Expy Night Closure | 2 | Ea | $ | $ |
| ATC3 | Traffic Control for Non-Routine Work, 2 Lane Expy Day Closure | 2 | Ea | $ | $ |
| ATC4 | Traffic Control for Non-Routine Work, 2 Lane Expy Night Closure | 2 | Ea | $ | $ |
| ATC5 | Traffic Control for Non-Routine Work, 3 Lane Expy Day Closure | 2 | Ea | $ | $ |

| | | | | | |
|---|---|---|---|---|---|
| ATC6 | Traffic Control for Non-Routine Work, 3 Lane Expy Night Closure | 2 | Ea | $ | $ |
| ATC7 | Traffic Control for Non-Routine Work, Ramp Day Closure | 2 | Ea | $ | $ |
| ATC8 | Traffic Control for Non-Routine Work, Ramp Night Closure | 2 | Ea | $ | $ |
| AV01 | Video Communication Hut, Furnish and Install | 1 | Ea | $ | $ |
| AV02 | Video Communication Rack, Open, Furnish and Install | 4 | Ea | $ | $ |
| AV03 | Video Communication Rack, Enclosed, Furnish and Install | 2 | Ea | $ | $ |
| AV04 | Video Control Workstation, Furnish and Install | 2 | Ea | $ | $ |
| AV05 | Video Communication Link, Furnish and Install | 1 | Ea | $ | $ |
| AV06 | Video Communication Mux, Furnish and Install | 1 | Ea | $ | $ |
| AV07 | Video Communication Pole, Furnish and Install | 2 | Ea | $ | $ |
| AV08 | Video Communication Switch, Furnish and Install | 1 | Ea | $ | $ |
| AV09 | Video Communication Fiber Media Converter LH, Furnish and Install | 2 | Ea | $ | $ |
| AV10 | Video Communication Fiber Media Converter, Furnish and Install | 2 | Ea | $ | $ |
| AV11 | Video Communication Fiber Transceiver, Furnish and Install | 2 | Ea | $ | $ |
| AV12 | Video Communications Fiber Switch, Furnish and Install | 2 | Ea | $ | $ |
| AV13 | Video Communications Encoder, 1 Channel, Furnish and Install | 30 | Ea | $ | $ |
| AV14 | Video Communications Encoder, 2 Channel, Furnish and Install | 1 | Ea | $ | $ |
| AV15 | Video Communications Decoder, 1 Channel, Furnish and Install | 11 | Ea | $ | $ |
| AV16 | Video Communications Decoder, 2 Channel, Furnish and Install | 1 | Ea | $ | $ |

| | | | | | |
|---|---|---|---|---|---|
| AV17 | Video Communications MPEG4 Encoder, 4 Channel, Furnish and Install | 11 | Ea | $ | $ |
| AV18 | Video Communications MPEG4 Decoder, 4 Channel, Furnish and Install | 11 | Ea | $ | $ |
| AV19 | Video Communications MPEG4 Encoder, 1 Channel, Furnish and Install | 5 | Ea | $ | $ |
| AV20 | Video Communications MPEG4 Decoder, 1 Channel, Furnish and Install | 5 | Ea | $ | $ |
| AV21 | Video Communications MPEG4 Chassis Rack, Furnish and Install | 2 | Ea | $ | $ |
| AV22 | Video Communications JPEG Capture Device, 4 Channel, Furnish and Install | 9 | Ea | $ | $ |
| AV23 | Video Communications JPEG Capture Device Chassis Rack, Furnish and Install | 3 | Ea | $ | $ |
| AV24 | Video Communications Wireless Mesh Node, Furnish and Install | 6 | Ea | $ | $ |
| AV25 | Video Communications Wireless Mesh Node Omni-Directional Antenna, Furnish and Install | 2 | Ea | $ | $ |
| AV26 | Video Communications Wireless Mesh Node Sector Antenna, Furnish and Install | 4 | Ea | $ | $ |
| AV27 | Video Communications Wireless Access Point, Furnish and Install | 2 | Ea | $ | $ |
| AV28 | Video Communications Wireless Mesh Node Subscriber Panel Antenna, Furnish and Install | 2 | Ea | $ | $ |
| AV29 | Video Communications Wireless Management Equipment, Furnish and Install | 1 | Ea | $ | $ |
| AV30 | Video Communications Chassis Rack, 1 Channel, Furnish and Install | 2 | Ea | $ | $ |
| AV31 | Video Communications Chassis Rack, 2 Channel, Furnish and Install | 1 | Ea | $ | $ |
| AVL1 | Automatic Vehicle Locator (AVL), Furnish Only | 12 | Ea | $ | $ |
| AVL2 | AVL Radio Modem, Furnish Only | 12 | Ea | $ | $ |
| AVL3 | AVL or Radio Modem, Remove | 12 | Ea | $ | $ |
| AVL4 | AVL or Radio Modem, Install | 12 | Ea | $ | $ |

| | | | | | |
|---|---|---|---|---|---|
| AVL5 | AVL System Workstation, Furnish and Install | 1 | Ea | $ | $ |
| AVL6 | AVL System Backup Server, Furnish and Install | 1 | Ea | $ | $ |
| AVL7 | AVL System Base Station, Furnish and Install | 1 | Ea | $ | $ |
| | Non-Routine Maintenance Sub-total | | | | **$** |
| | | | | | |
| | **BUDGETARY ALLOWANCES** | | | | |
| AXB1 | Budgetary Allowance for REVLAC Remote Control Modifications | 1 | LS | $30,000.00 | $30,000.00 |
| AXB2 | Budgetary Allowance for PLC Control System Repair | 1 | LS | $40,000.00 | $40,000.00 |
| AXB3 | Budgetary Allowance for State Stock Parts | 1 | LS | $30,000.00 | $30,000.00 |
| AXB4 | Budgetary Allowance for Remote Network Monitoring System | 1 | LS | $15,000.00 | $15,000.00 |
| AXB5 | Budgetary Allowance for CCTV System Repair | 1 | LS | $50,000.00 | $50,000.00 |
| AXB6 | Budgetary Allowance for Communication System Repair | 1 | LS | $20,000.00 | $20,000.00 |
| AXB7 | Budgetary Allowance for UPS and Other Building Equip. Repairs | 1 | LS | $30,000.00 | $30,000.00 |
| AXB8 | Budgetary Allowance for Gate Drivetrain Assembly Repairs | 1 | LS | $40,000.00 | $40,000.00 |
| AXB9 | Budgetary Allowance for Microwave Repairs | 1 | LS | $30,000.00 | $30,000.00 |
| AXB10 | Budgetary Allowance for ASMC - EMCMS Enhancements | 1 | LS | $20,000.00 | $20,000.00 |
| AXB11 | Budgetary Allowance for Ramp Gate and Attenuator Work | 1 | LS | $20,000.00 | $20,000.00 |
| | Budgetary Allowance Sub-total | | | | **$ 325,000.00** |
| | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | **SUMMARY** | |
| | | | | **Routine Maintenance Sub-total:** | **$** |
| | | | | **Non-Routine Maintenance Sub-total:** | **$** |
| | | | | **Budgetary Allowance Sub-total:** | **$ 325,000.00** |
| | | | | **TOTAL:** | **$** |
| | | | | | |
| | | | | | |
| | | | | | |

## 2.0 TERMS AND REFERENCES

### 2.1 DEFINITIONS OF TERMS

**AITC** American Institute of Timber Construction

**ANSI** American National Standards Institute

**ASMC** Advanced Systems Maintenance Contract, or the Advanced Systems Maintenance Contractor

**ASSIGNED PERSONNEL**
When used herein shall refer to Contractor personnel whose daily work shall be normally assigned to the ASMC, and reported on the Daily Agenda.

**AVL** Automatic Vehicle Location

**AWPA** American Wood Preservers Association

**BEO** Illinois Department of Transportation, District 1, Bureau of Electrical Operations, IDOT Headquarters, 201 W. Center Ct., Schaumburg, IL. 60173

**CMS** Changeable Message Sign

**CLEAR** When used herein describes ticket terminology, the departure of the Contractor personnel from the initial response to the site of a reported incident of damage or trouble on system equipment.

**COMCENTER** Illinois Department of Transportation, District 1, Bureau of Electrical Operations Communications Center (ComCenter), IDOT Headquarters, 201 W. Center Ct.,Schaumburg, IL. 60173

**DAMAGED EQUIPMENT**
Any piece of equipment owned or maintained by the Department that is no longer capable of functioning as originally designed, or as since modified, or any piece of equipment that has deteriorated sufficiently in the opinion of the Engineer so that failure is imminent or for which safety could be a concern.

**DBE** Disadvantaged Business Enterprise

**DON** District Operations Network (also known as CCTV Distribution system)

**EFO** Illinois Department of Transportation, District 1, Bureau of Electrical Operations, Electrical Field Office, 101 W. Center Court, Schaumburg, IL. 60196

**EMCMS** Electrical Maintenance Call-out and Management System

**EMERGENCY** A condition which is a hazard to the public, or is designated by the Engineer to be a hazard of such severity that life and property are endangered and which requires Immediate Corrective Action

**ENGINEER** Region I Engineer or his designee for this Contract

**ETOS** Emergency Transportation Operation System

**EQUIPMENT SERVICE**
Refers to the servicing and/or restoration of any equipment to normal operating condition and appearance necessitated by service equipment wear-out, failure, damage or loss

**FROM ANY CAUSE WHATSOEVER**
When used herein shall include any and all causes except those resulting in extensive damage from declared area wide disasters such as fires and floods, acts of the public enemy, or an Act of God. (The area wide disaster exclusion will be valid only for the time period and area as defined by a Governor's Disaster Declaration.)

**GCM GATEWAY**
Gary-Chicago-Milwaukee Corridor Transportation Information Network

**IDOT INSPECTOR**
Employees of the Illinois Department of Transportation who are assigned duties on this contract

**IMMEDIATE CORRECTIVE ACTION**
Refers to all activity necessary to restore the safe operating integrity of a system or system element, without delay

**ISP/CMS** Illinois State Police Area in Central Management Service facility

**MAINTENANCE SCHEDULE**
A schedule prepared by the Engineer, or prepared by the Contractor at the direction and approval of the Engineer, showing starting and completion dates of work items to be performed on the various installations or systems

**MANUAL ON TRAFFIC CONTROL (M.U.T.C.D.)**
The State of Illinois "Manual on Uniform Traffic Control Devices for Streets and Highways"

**MOTORIST CAUSED HIGHWAY DAMAGE (MCHD)**
Refers to the State program, which provides funds for repair and/or replacement of damaged system equipment, if a Police Accident Report with Driver information can be matched to a specific damage.

**NEC** National Electrical Code

**NON-ROUTINE WORK**
Non-routine work shall refer to work which is not included under routine work, but which is authorized and paid separately. Methods of payment include use of contract pay items, established agreed prices for contract work and/or the use of force account procedures.

**OSHA** Occupational Safety Health Administration

**PATROL** Refers to driving a pre-assigned route with a defined regular reoccurring time schedule to inspect ASMC installations and equipment.

**PAY MEETING** Monthly meeting held to discuss status of routine and non-routine work. (The Contractor shall provide the properly numbered monthly invoice for routine maintenance work at this meeting.)

**PLC** Programmable Logic Control

**QA/QC** Quality Assurance/Quality Control

**RACS** IL 38 (Roosevelt Rd.) Ramp Access Control System

**RAMP** When used in the context of the REVLAC system, it refers to an entire reversible lane entrance ramp, including, but not limited to, signs, outside gates, barrier, and inside gates. The highway pavement that transitions from one roadway element to another. In this contract, it may also refer to all access control equipment and systems associated with a particular ramp location.

**REGION 1** Area within Cook, DuPage, Kane, Lake, McHenry, Will, and a portion of Kendall Counties (also termed District 1)

**RESPONSE TIME**
Amount of time from the initial notification to the Contractor until a repair person physically arrives at the location.

**REVLAC** Reversible Lane Control System for the Kennedy Expressway

**ROUTINE MAINTENANCE**
Refers to all work required to staff, equip, patrol, inspect and maintain the systems under this contract, whole and operational, at locations and as defined herein, except for work specifically excluded from routine maintenance coverage and paid separately as non-routine maintenance work. This generally covers monthly recurring and operational response activities.

**RUS** Rural Utilities Service, USDA

**SALVAGE** Material/equipment which has been removed from the installed location, inspected for quality, and re-stored in State Stock for further use if directed by the Engineer.

**SEOC** State Emergency Operations Center

**SPECIALTY SERVICE**
Specialty Service, or Specialty Service Work shall refer to work performed by entities other than the Advanced Systems Maintenance Contractor who are not prequalified subcontractors but whose services are necessary because of specialized equipment, specialized expertise or the maintenance restrictions on a particular piece of system equipment. Examples of specialty service entities include motor repair shops, communication and/or electronics repair shops, manufacturer's authorized repair agents, software programmers/developers, and similar service providers. Such work is not restricted to in-shop work and such services may be field-performed. Such services will not be considered as materials. Refer to subcontracting requirements for additional information.

**STANDARD SPECIFICATIONS**
Illinois Department of Transportation's "Standards Specifications for Road and Bridge Construction"

**SYSTEM** When used herein refers to any or all the electrical systems or subsystems covered by this Contract or a specific defined collection of elements, as a system, as in the REVLAC System

**THIRD PARTY** Any entity other than IDOT or the Advanced Systems Maintenance Contractor

**TICKET** Maintenance record implemented by the Contractor on the IDOT EMCMS to record various types of malfunctions, failures, damages, knockdowns, vandalism, theft or various other concerns relating to safety matters and/or the reported follow-up response information which documents the temporary and/or permanent repairs and proper Contractor response within required timeframes, to assure Department personnel that the system equipment is operating in an acceptable manner.

**TRAFFIC SPECIFICATIONS**
The Illinois Department of Transportation's "Standard Specifications for Traffic Control Items"

**TSC** The Illinois Department of Transportation, District 1, Bureau of Traffic, Traffic Systems Center, 445 W. Harrison, Oak Park, IL. 60304

**WEEK** A period of seven (7) consecutive calendar days. Any multiple of this term shall mean a corresponding multiple of number of calendar days.

**WORKING DAY**
The definition of a working day shall be in accordance with Article 108.04 of the Standard Specifications, with the exception that working days may be charged throughout the entire year.

**WORK SCHEDULE**
The work schedule shall provide details of work activity as to dates when the activity is planned to be performed by the Contractors forces

**24/7** Refers to operations required twenty-four hours per day, seven days per week.

All definitions in referenced publications and standards shall apply, except as may be modified herein.

## 2.2 SPECIFICATIONS AND STANDARDS

The latest issue, at the bid date, of the following standards, including subsequent additions or revisions made prior to the bid date, shall apply to the work covered by this contract. In case of conflict with any or parts of the standards listed below the Special Provisions contained herein shall take precedence and shall govern. In case of conflict between referenced standards, the most stringent as determined by the Engineer, shall take precedence and shall govern.

**Illinois Department of Transportation Standards and Specifications**

- Standard Specifications for Road and Bridge Construction, current version
- Note: Article 801.02, Standards of Installation shall apply to all systems under this Contract and is not limited to Lighting
- Design Manual Section 3-600 published on Highway Lighting
- Flaggers' Handbook
- Highway Standards
- Manual on Uniform Traffic Control Devices

- Accommodating Utilities on Rights-of-Way of IL. State Highway System
- Recurring Special Provisions for Traffic Signals, Road and Bridge and Other Related Laws
- Standard Specifications for Traffic Control Items
- Supplemental Construction Specifications and Recurring Specifications
- BDE Special Provisions

**Illinois Department of Transportation, District 1, Standards and Specifications**

- District 1 Highway Standards
- Freeway Details Freeway Entrance and Exit Ramp Closure Details
- Traffic Control Details for Freeway Shoulder and Partial Ramp Closures
- Micro Computer Management Manual
- Permit Specifications Governing Permit Work on State Right-of-Way
- Recurring Traffic Signal Specifications
- Recurring Special Provisions for Roadway Lighting
- Resident Engineers Construction Guide for Electrical Equipment Construction on State Highways
- Standard 2308-4 (Day or Night Moving Operations)
- Standard Specifications for Electrical Maintenance Contract Management System
- Standard Specifications for the Emergency Data Acquisition System
- Standard Specifications for Integrated Closed-Loop Traffic Signal Monitoring
- Standard Specifications for Pump Station Supv. Control/Data Acquisition System
- Standards for Roadway Lighting by Permit on State Routes
- Standard Traffic Signal Design Details
- Traffic Signal Plan Preparation and Design Guide
- Traffic Surveillance Special Provisions & Traffic Surveillance Typical Drawings
- Bureau of Traffic, “Keeping the Expressway Open to Traffic”
- Traffic Control Plans for Daytime and Nighttime Traffic Operations
- Work Site Protection Manual

**National Standards, Specifications and Regulations**

- Insulated Cable Engineers Assn. and Underwriters Laboratories publications when applicable for cable and other materials

- National Electrical Manufacturers Association Standards, American National Standards Institute, where applicable, for signals, lamps, ballasts, and other accessories

- American National Standards Institute, where applicable, for ballasts, and other accessories

- ASTM Standards for materials

- All applicable manuals and policies of FHWA

- National Electrical Code, National Fire Protection Association, Batterymarch Park, Quincy, MA 02269, approved by the American National Standards Institute, Publication #ANSI/C2, published by IEEE, 345 E. 47th Street, New York, NY 10017

- Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals AASHTO Publication

- Emergency Response Guidebook by U.S. Dept. of Transportation, latest version, for further assistance call National Response Center (NRC) 1-800-424-8802

- Hazardous Materials Regulations, Hazardous Materials Transportation Uniform Safety Act of 1990, Hazardous Materials Regulations and Motor Carrier Safety Regulating by U.S. Department of Transportation

- OSHA, all applicable regulations

- Federal Communications Commission

## 3.0 ASMC SYSTEMS TO BE MAINTAINED

Unless noted specifically herein, the following systems shall be maintained under routine maintenance. Review routine work requirements in Article 6.0.

New items of equipment will be added to the system infrastructure through the duration of the Contract, and no additional compensation will be allowed for maintenance of this equipment. Major additions planned include interim CCTV distribution system along with Kingery cameras, nodal buildings and associated equipment, IP multicast CCTV and network expansion, nodal buildings and associated equipment that is part of the Dan Ryan construction, experimental system of wireless CCTV on the Edens expressway, and beginning work on CCTV expansion to US 6 on I-55. Maintenance will transfer to the Contractor when systems are accepted by IDOT, however, there is a minimum of six (6) months of warranty coverage from the construction contractor for defects in materials or workmanship.

The systems defined herein are not completely independent and separate systems. Functionality and elements of one system may be dependent upon the availability of another. The description of the District 1 systems herein shall not be construed to separate their integrated functionality nor shall it service to omit some portion of an operating system due to either a shared operation or the lack of explicit inclusion with the generalized system definition. A failure or malfunction in one system that results in the failure, malfunction or reduced operation of another will be considered by the Department as a failure or malfunction in both systems.

## 3.1 KENNEDY EXPRESSWAY REVERSIBLE LANE ACCESS CONTROL SYSTEM (REVLAC) (PAY ITEM A-1)

The REVLAC System operates to control access at the six entry ramps to the Kennedy Expressway Reversible Lanes. The REVLAC System includes, but is not limited to:

**Swing Gates**

The REVLAC system incorporates 117 swing gates and the RACS incorporates 10 swing gates manufactured by B & B Electromatic of Norwood, Louisiana. These swing gates direct the traffic away from closed ramps. Each swing gate can be operated remotely, locally, and with a manual hand crank. There are 48 critical gates which must be repaired immediately upon notification of damage or malfunction.

**Restraining Barriers**

The system incorporates six restraining barriers manufactured by the Entwistle Company of Hudson, Massachusetts. Each reversible entrance ramp has a barrier to prevent the entrance of

vehicles when in the lowered (closed) position. Each barrier can be operated remotely, locally or by means of a built in 12V DC motor which can be powered from a the 12V DC automotive battery on an Emergency Traffic Patrol Truck.

**Auxiliary Signs**
There are a combination of 42 auxiliary fiber optic and LED signs manufactured by the National Sign and Signal Co. of Battle Creek Michigan throughout the REVLAC System. They are operated remotely.

**Changeable Message Signs (Drum Signs)**
There are 15 Changeable Message (drum signs) as manufactured by Lake Technologies. Each Changeable Message Sign can be operated remotely, locally, and with a manual hand crank. Of these 15 signs, 7 signs are critical signs which must operate in order to close a given ramp entrance.

**Operations Cameras (without PTZ)**
The operations cameras are integral to the operation of the REVLAC system, and provide a generalized overview of the urban expressway system. (Refer to listing herein)

**Control Buildings (A, C, D, E, and B) and Associated Equipment**
The remote control buildings adjacent to entry ramp locations house various types of electrical power apparatus, control systems, alarm systems, radio systems, including microwave cables and microwave towers/poles, transformers, lighting systems, power wiring, heating and ventilation systems, doors, locks, and all associated equipment and appurtenances owned by the State of Illinois and under the jurisdiction of the Department.

Each of the remote control buildings, A, C, D, and E, have an Operational Control Panel (OCP). The OCP's house the PLCS Allen Bradley servers 5/60 and manual controls for the swing gates, signs and barriers. These OPC's in the control buildings differ from the IDOT Com Center Supervisory Control Panels (SCP) only in that the individual gate, sign, and barrier status indication is not available. Instead, a device group indication is provided. The control functionality is otherwise identical, as each of the control buildings can operate the entire system through the normal or abnormal events panels of its OPC. Remote panels may be used for system testing or may be used in the event of a power outage or disruption at the IDOT ComCenter in order that the reversible lane control is not affected.

Buildings A, D and E have dual electrical services. Building C is fed from building D. Each of these three buildings route power through a UPS and have battery backup with associated chargers and inverters for critical controls and monitoring.

Control Building B is an interconnect building which houses equipment for REVLAC data lines.

**Communications Buildings**
Communications buildings for communications equipment are located at the Nordic Tower, Schaumburg Tower, Foster Tower, Control buildings, A, B, C, D, and E, Hillside Hub, and IDOT Traffic Systems Center, Oak Park.

**REVLAC Associated Equipment**
The IDOT ComCenter equipment includes three separate SCP stations for the REVLAC system, which are available to the dispatchers who work in the ComCenter to control the REVLAC system.

A tower and associated transmission equipment is located at the Illinois State Police District Chicago office in Des Plaines. It is a microwave repeater facility for the transmission of signals between the REVLAC control building E and District 1 Headquarters, Schaumburg.

All ramp gate and barrier equipment, including signage, dedicated CCTV, and Cattron units for the remote control of the swing gates

All interconnecting cable, Ethernet, and fiber systems

Associated microwave communications and support systems

Primary communications; fiber extensions to the fiber backbone and another fiber backbone involving Illinois Tollway fiber. (The REVLAC system depends on the fiber backbone as maintained under the Electrical Maintenance Contract (EMC), as well as an additional contract for telephone communications.)

While the reversible lanes on the Kennedy expressway extend from approximately the Ohio Street interchange on the south to the Edens/Kennedy junction on the north, (a distance of approximately 7.5 miles), the supporting control centers, signage and communications facilities extend beyond these limits and are all included as part of the system.

## 3.2 THE ROOSEVELT RAMP ACCESS CONTROL SYSTEM (RACS) (PAY ITEM A-2)

The RACS System operates to control access at the single entry ramp from eastbound Roosevelt Road to eastbound I-290, with the ramp entry just east of York Road. The RACS Systems include the complete distributed control system, but is not limited to:

**Swing Gates**
The RACS System incorporates 10 swing gates manufactured by B & B Electromatic of Norwood, Louisiana. These swing gates direct the traffic away from closed ramps. Each swing gate can be operated remotely, locally, and with a manual hand crank. There are two (2) critical gates which must be repaired immediately upon notification of damage or malfunction.

**Dynamic Message Signs (LED)**
There are 3 dynamic message signs, as manufactured by Voltron. Each sign can be operated remotely, or locally. Of these 3 signs, 2 signs are critical signs which must operate in order to close a given ramp entrance.

**Operations Cameras (without PTZ)**
The operations cameras are integral to the operation of RACS gate operations. (Refer to camera listing herein.) The RACS cameras are mounted on the radio tower at the Hillside communications Hub (3), with pictures transmitted to a central camera selection, control and switching system at the District 1 Headquarters ComCenter.

**Buildings**
The Hillside RACS Hub building is located at 5250 W. Harrison St., Hillside; the Roosevelt Ramp Control building is located at the IL 38 entrance to eastbound I-290. These buildings house various types of electrical power apparatus, control systems, alarm systems, fiber panels, radio systems, including microwave cables and microwave towers/poles, transformers, lighting systems, power wiring, heating and ventilation systems, doors, locks, and all associated equipment and appurtenances owned by the State of Illinois and under the jurisdiction of the Department.

**RACS Associated Equipment**

RACS equipment at the IDOT District 1 Headquarters ComCenter Schaumburg includes three computer workstations, one CCTV workstation, and one datalogger computer system. The CISCO maintenance computer system and iMPATH video equipment are also located in the Com Center.

Radar traffic detection equipment

All Interconnecting cable and fiber systems

All ramp gate equipment, including signage and dedicated CCTV

All associated equipment and items at the Region Headquarters in Schaumburg

While the Roosevelt RACS is located at the Eastbound IL 38 (Roosevelt Road) entrance ramp to the eastbound I-290 supporting control centers, signage and communications facilities extend beyond this location and are all included as part of the system.

## 3.3 CCTV SYSTEM (PAY ITEM A-3)

**Cameras**

The CCTV System consists of surveillance cameras (camera with pan-tilt-zoom, PTZ) on expressways, for construction areas and Accident Investigation Sites, and various cameras for general surveillance. These cameras and their functionality are not dedicated solely to a particular operational system, such as RACS, but their views may be incorporated in the system functionality.

CCTV field equipment is dispersed within District 1, with the central control at the IDOT District 1 ComCenter and additional equipment at the Traffic Systems Center in Oak Park.

Additional cameras, including cameras mounted on light towers will be added to this system through the duration of the Contract.

The cameras on Ryan, and Kingery expressways and few cameras on I-290 and Kennedy expressways are mounted on light towers. Various transceivers for I-55, I-57 and I-290 cameras (pole-mounted cameras) are located in the surveillance system cabinets. It will be necessary for the Contractor to contact the State Electrical Maintenance Contractor to lower light tower rings to access the light tower mounted cameras, and for access to the surveillance cabinets or other state electrical maintenance contractor maintained equipment. The Contractor shall give the state's Electrical Maintenance contractor a minimum of 24 hours notice to respond to the camera and/or equipment location.

**CCTV Associated Equipment**

Various equipment including video transceivers, codecs, video transmission and distribution equipment, switching equipment, video servers, video work stations, wireless links fiber optic patch panels, fiber jumpers, etc., are located at, but not limited to the following locations:

- I-55 Dan Ryan interchange
- I-57 North and South Huts
- UIC Building
- REVLAC Buildings A, B, C, D, and E
- Traffic Systems Center in Oak Park
- District 1 Headquarters ComCenter in Schaumburg

- Roosevelt Ramp Building, Hillside, Nordic and Schaumburg Towers
- IDOT Pump Station No. 5
- ITS Office in Oak Park
- IL 53/I-290 at Schaumburg Road
- Schaumburg Tower and Rodenburg Tower video links

The central system has the capacity and provisions to add cameras region-wide so that an overall common system for the cameras will be in place. Any new cameras, which are added to the system under the contract, shall be maintained under routine maintenance bid items for the remaining period of the Contract.

The CCTV system includes all of the above elements, including cameras, interconnecting fiber and cable, control and switching equipment, monitors, and all interfaces to communications network equipment.

## 3.4 DISTRICT OPERATIONS NETWORK (PAY ITEM A-4)

The District Operations Network (DON) includes, but is not limited to, the SONET system installed as part of the REVLAC and RACS systems, CCTV equipment (including future IP multicast) and the Gig-E network equipment.

The SONET System is a basic communications infrastructure which incorporates Microwave Radio, Fiber Optic, Ethernet and SONET equipment to accept, transmit, and receive broadband digital data in a SONET ring that connects the Hillside Hub site (5250 W. Harrison St., Hillside) to the District 1 Headquarters Schaumburg ComCenter. The connection is accomplished via microwave through an intermediate hop at the Nordic site and via a fiber optic link through fiber of the Illinois State Toll Highway Authority System. This system has been expanded in 2004 with a new Sonet node at REVLAC building E with the upgraded microwave link between the Headquarters and Building E with an intermediate repeater at ISP District Chicago Headquarters in Des Plaines.

Except as included in other systems, it includes:

- The tower, shed, equipment and connections at the Hillside Hub site
- The tower, shed, equipment and connections at the Nordic Tower site
- The tower, shed, equipment and connections at the Schaumburg Tower
- Department's microwave equipment at District Chicago ISP HQ
- Harris Megastar Microwave equipment at REVLAC Building E
- Associated equipment at the District 1 Headquarters Com Center Schaumburg
- REVLAC Fiber Network, including Hirschmann Fiber Repeaters
- Associated interconnecting cable and non-ITSHA fiber
- Connections at various ITSHA locations

Any new sonet system fiber link or equipment, which is added to the system under the Contract, shall be covered under routine maintenance bid items for the remaining period of the Contract.

## 3.5 AUTOMATIC VEHICLE LOCATION SYSTEM (PAY ITEM A-5)

The AVL Automatic Vehicle Location system tracks and locates the Department's vehicles for the safety of the personnel. It is also intended to be a tool to report highway incidents electronically. At present, District 1's Emergency Traffic Patrol vehicles (62) are equipped with the AVL units. A small quantity of new AVL radios is proposed to be added to the system under this Contract

through non-routine bid price items. Maintenance of the new AVL installations, Emergency Transportation Operation System (ETOS) base stations at Marina Towers and the Hillside Hut, and AVL servers and work stations in the ComCenter will be covered under routine maintenance bid items for the remaining period of the Contract.

## 3.6 OTHER SYSTEMS (PAY ITEM A-6)

Review the routine maintenance requirements in Article 6.0 of the GCM Gateway Network, and CCTV connections for the State Emergency Operations Center

**Expressway Ramp Gates (ERG)**
Thirteen (13) ramp gates have been installed so far and another thirty (30) ramp gates are planned to be installed under Contract 60D32 for access control to the area expressways. The ramp gates are structured so as to stop vehicles from entering expressways through entrance ramps, in case the current inbound expressway traffic would need to be changed to outbound. A small quantity of new ramp gates is proposed to be added to the system under this Contract through non-routine bid price items. Maintenance of the new ramp gates will be covered under routine maintenance bid items for the remaining period of the Contract.

## 3.7 COMMUNICATION SYSTEMS TO BE MAINTAINED

Unless noted specifically herein, the following systems shall be maintained under Routine Maintenance.

### 3.7.1 REVLAC AND RACS

The REVLAC and RACS system interactions rely on a communications exchange between the IDOT ComCenter and the remote Control Buildings from which all devices are operated. Proper and continuous communications are necessary to control and provide status of individual ramps, device positions, and to prevent unsafe conditions on the reversible lane system.

The communications scheme is triple redundant (REVLAC only) to provide prompt and continuous communications in the event of a communications device failure. The three modes of communications are: fiber, microwave and telephone lines. The primary communications is conducted on the fiber system. The secondary communications system is the microwave network. The third means of communications is a dial-up modem system via the telephone lines. In the event of a fiber link failure, the microwave system will pick up the communications traffic and the telephone modem connections will be set up as a backup communication mode.

### 3.7.2 DISTRICT OPERATIONS NETWORK

The SONET network is used for video and data communication links between the IDOT District 1 Headquarters ComCenter, Traffic Systems Center and other facilities and RACS and REVLAC equipment. The system is comprised of the digital microwave radio system 6 GHz between Schaumburg Headquarters and the Nordic tower, 11 GHz between the Nordic repeater tower and the Hillside hub tower, and 6 GHz between the Schaumburg tower, ISP Des Plaines repeater tower and REVLAC Building E at 4755 Wilson Avenue in Chicago.

### 3.7.3 MICROWAVE SYSTEM (REVLAC)

The microwave radio system interconnects directly and indirectly all control nodes of the REVLAC system. The primary function of the microwave system is to provide reliable high-speed data transmission between all locations. The bandwidth of the microwave allows transmission of video from any site to any site by means of an elaborate switching network.

The long distance transmission to the IDOT Headquarters ComCenter includes video (one way) and data (bi-directional) which is provided by a digital microwave link, repeated at the Illinois State Police Headquarters in Des Plaines to control building E.

All microwave paths are dual channel allowing redundant data paths, selected automatically, and can provide two real time video signals simultaneously from any site to any site.

The systems consist of 23 GHz analog links between the control buildings, 6 GHz digital links from building E to the IDOT Headquarters Schaumburg tower, a 6 GHz active repeater at ISP District Chicago in Des Plaines, dish antennas, coaxial cables, waveguides, power supplies, modulators, RF Heads, State owned radio towers, a network monitoring system, and a vast array of microwave technology to provide the desired service.

### 3.7.4 TELEPHONE SYSTEM (REVLAC)

Each nodal site has four 9600-baud smart modems interconnected between the sites. Each modem is dedicated and programmed for speed dial to another node. In the event of microwave failure, the modems interconnect and remain connected for the duration of path loss.

### 3.7.5 CONTROL SYSTEM (REVLAC)

The REVLAC Control System is a network of five sets of Allen Bradley PLC-5/60 and PLC-5/80 Programmable Logic Controllers (PLC). Each Remote Control Building and ComCenter utilize a redundant processor in their PLC system. Each system coordinates the communications and control of that specific location. Normally all five units work as an interconnected system (network) through the communications links; however, each system may operate as a stand-alone unit for its ramp or operate the entire system in the event of a loss of communication to/from Schaumburg.

In addition to controlling various traffic devices such as barriers, changeable message signs and auxiliary signs, the REVLAC control system monitors and controls support systems such as swing gate heaters, weather station warning signals, CCTV monitoring systems, alarm systems, and various circuit breaker/power supply systems

### 3.7.6 CONTROL SYSTEM (RACS)

The RACS Control System is a network of Allen Bradley Control Logix 5000 series Programmable Logic Controllers (PLC). Each Remote Control Building (Hub and Ramp) utilizes a separate redundant CPU in its PLC system and the user interface software in the workstations in IDOT ComCenter facilitate the remote control of the system. Each system coordinates the communications and control of that specific location. Normally all units work as an interconnected system (network) through the communications link; however, each system may operate as a stand-alone unit for its ramp or operate the entire system in the event of a loss of communication to/from Schaumburg. In addition to controlling various traffic devices such as barriers, changeable message signs and auxiliary signs, the RACS control system monitors and controls support systems such a traffic detector on the IL 38 ramp, CCTV monitoring systems, alarm systems, and various circuit breaker/power supply systems.

## 3.8 SERVERS AND USER INTERFACE WORKSTATIONS

The following listed equipment may not be all-inclusive and all associated equipment for the servers and interface workstations shall be included in the Contract.

**Hillside Hub**
1 PLC Workstation
1 NetCams Workstation

**Roosevelt Ramp Building**
1 PLC Workstation
1 NetCams Workstation

**District 1 Headquarters Schaumburg**
2 RACS Workstations
1 RACS Event Logger
1 Sonet Maintenance Workstation
1 NetCams Workstation
1 NetCams Server
1 Maintenance Workstation
1 REVLAC Event Logger
1 REVLAC Alarm Monitor
3 TLC Video Over IP Servers
1 1Rack Unit TLC Video Server
2 TLC Video over IP Servers
1 Sensoray Video Capture Server
1 SWARMS Workstation
1 AVL Server
2 AVL Workstations
1 Multi-site base station controller of AVL System
2 Dell Laptops for PLC Programming
1 HP Laptop for PLC Programming

**REVLAC Building A, C, D and E**
4 REVLAC Alarm Monitors, 1 in each Building

## 3.9 LIST OF LOCATIONS

The following list of is provided for Contractor reference, however all locations maintained under routine maintenance may not be listed here. Bidders are urged to conduct a site inspection of all ASMC equipment prior to bidding. The location number shown is the reference number to be used for EMCMS Tickets and motorist caused highway damage invoices as requested by the Engineer.

Locations noted as “critical” require immediate corrective response, under routine maintenance, for reported incidents of equipment malfunction or damage. Locations may have their status of “critical” or “non-critical” changed at any time by the direction of the Engineer. Refer to routine maintenance work requirements in Article 6.0 herein.

**Bishop Ford Expressway Traffic Monitoring Cameras (TM)**

| EMCMS Loc. # | Camera # | Location Name |
|---|---|---|
| ABF0 | I 94 FORD TM Camera BF0 | Michigan City Rd |
| ABF0A | I 94 FORD TM Camera BF0A | M l King Dr |
| ABF7 | I 94 FORD TM Camera BF7 | 143rd St |
| ABF11 | I 94 FORD TM Camera BF11 | 170th St |
| ABF11A | I 94 FORD TM Camera BF11A | I 80 NW Quad |
| ABF11B | I 94 FORD TM Camera BF11B | I 80 SW Quad |
| ABF12 | I 94 FORD TM Camera BF12 | South of I 80 |

**Dan Ryan Expressway Traffic Monitoring Cameras (TM)**

| EMCMS Loc. # | Camera # | Location Name |
|---|---|---|
| ADR0 | I 90 94 RYAN TM Camera DR0 | I 290 IKE Jct |
| ADR0A | I 90 94 RYAN TM Camera DR0A | Polk St |
| ADR1 | I 90 94 RYAN TM Camera DR1 | Archer Ave |
| ADR1A | I 90 94 RYAN TM Camera DR1A | Archer Ave |
| ADR2 | I 90 94 RYAN TM Camera DR2 | I 55 Stevenson |
| ADR2A | I 90 94 RYAN TM Camera DR2A | Canal |
| ADR2B | I 90 94 RYAN TM Camera DR2B | 28th Pl |
| ADR3 | I 90 94 RYAN TM Camera DR3 | 35th St |
| ADR4 | I 90 94 RYAN TM Camera DR4 | 45th St |
| ADR5 | I 90 94 RYAN TM Camera DR5 | 50th St |
| ADR6 | I 90 94 RYAN TM Camera DR6 | 58th St |
| ADR7 | I 90 94 RYAN TM Camera DR7 | 63th St |
| ADR7A | I 90 94 RYAN TM Camera DR7A | 67th St |
| ADR8 | I 90 94 RYAN TM Camera DR8 | 72nd St |
| ADR9 | I 90 94 RYAN TM Camera DR9 | 81st St |
| ADR10 | I 90 94 RYAN TM Camera DR10 | 86th St |
| ADR10A | I 90 94 RYAN TMCameraDR10A | 90th St |
| ADR11 | I 90 94 RYAN TM Camera DR11 | 86th St |

**Edens I 94 Traffic Monitoring Cameras (TM)**

| EMCMS Loc. # | Camera # | Location Name |
|---|---|---|
| AED0 | I 94 EDENS TM Camera ED0 | I 90 94 NW Split |
| AED1 | I 94 EDENS TM Camera ED1 | Foster Ave |

**Elgin O'Hare Traffic Monitoring Cameras (TM)**

| EMCMS Loc. # | Camera # | Location Name |
|---|---|---|
| AEO8 | ELG OHARE TM Camera EO8 | Rodenburg Maintenance Yd |
| AEO8A | ELG OHARE TM Camera EO8A | Rodenburg Maintenance Yd |
| AEO8B | ELG OHARE TM Camera EO8B | Rodenburg Maintenance Yd |

**I 57 Expressway Traffic Monitoring Cameras (TM)**

| EMCMS Loc. # | Camera # | Location Name |
|---|---|---|
| AFS0 | I 57 TM Camera FS0 | Perry 98th St |
| AFS0A | I 57 TM Camera FS0A | Lasalle 99th St |
| AFS0B | I 57 TM Camera FS0B | Princeton Ave |
| AFS0C | I 57 TM Camera FS0C | Parnell Ave |
| AFS1 | I 57 TM Camera FS1 | Peoria St |
| AFS1A | I 57 TM Camera FS1A | 100th St |
| AFS2 | I 57 TM Camera FS2 | 104th St |
| AFS2A | I 57 TM Camera FS2A | 107th St Throop |
| AFS3 | I 57 TM Camera FS3 | 110th St |
| AFS3A | I 57 TM Camera FS3A | 114th St |
| AFS3B | I 57 TM Camera FS3B | South of 116th St |
| AFS4 | I 57 TM Camera FS4 | 121st St |
| AFS5 | I 57 TM Camera FS5 | South of 125th St |
| AFS5A | I 57 TM Camera FS5A | 128th St Oak St. |
| AFS5B | I 57 TM Camera FS5B | North of Broadway |
| AFS6 | I 57 TM Camera FS6 | Charles Dr |
| AFS7 | I 57 TM Camera FS7 | South of Thorton Rd |
| AFS7A | I 57 TM Camera FS7A | 141st St |
| AFS7B | I 57 TM Camera FS7B | Norris Oakley |
| AFS8 | I 57 TM Camera FS8 | Ent from Sibley |
| AFS8A | I 57 TM Camera FS8A | SW of Sibley |
| AFS8B | I 57 TM Camera FS8B | I294 Tri State TLWY |
| AFS9 | I 57 TM Camera FS9 | .1 mi North of Kedzie |
| AFS9A | I 57 TM Camera FS9A | 155th St |
| AFS10 | I 57 TM Camera FS10 | 159th St |
| AFS10A | I 57 TM Camera FS10A | South of 159th St |
| AFS11 | I 57 TM Camera FS11 | .1 mi South of Crawford |

| | | |
|---|---|---|
| AFS11A | I 57 TM Camera FS11A | 167th St |
| AFS12 | I 57 TM Camera FS12 | .1 mi Southwest of 167th St |
| AFS12A | I 57 TM Camera FS12A | Cicero Ave |
| AFS12B | I 57 TM Camera FS12B | 173rd St |
| AFS13 | I 57 TM Camera FS13 | South of 175th St |
| AFS13A | I 57 TM Camera FS13A | North of I 80 |
| AFS13B | I 57 TM Camera FS13B | South of I 80 |
| AFS14 | I 57 TM Camera FS14 | South of 186th St |

**Eisenhower Expressway Traffic Monitoring Cameras (TM)**

| **EMCMS Loc. #** | **Camera #** | **Location Name** |
|---|---|---|
| AIK0 | I 290 IKE TM Camera IK0 | Racine Ave # 1 UIC Roof |
| AIK0A | I 290 IKE TM Camera IK0A | Racine Ave # 2 UIC Roof |
| AIK0B | I 290 IKE TM Camera IK0B | Racine Ave # 3 UIC Roof |
| AIK6 | I 290 IKE TM Camera IK6 | East of Central |
| AIK7 | I 290 IKE TM Camera IK7 | West of Central |
| AIK12 | I 290 IKE TM Camera IK12 | US 12 45 Mannheim Rd |
| AIK13 | I 290 IKE TM Camera IK13 | US 12 45 West of Mannheim |
| AIK14 | I 290 IKE TM Camera IK14 | EB I 88 TLWY Merge |
| AIK14A | I 290 IKE TM Camera IK14A | Hillside Hub |
| AIK14B | I 290 IKE TM Camera IK14B | Ramp Camera |
| AIK14C | I 290 IKE TM Camera IK14C | Hillside Hub |
| AIK14D | I 290 IKE TM Camera IK14D | Wolf Rd |
| AIK14E | I 290 IKE TM Camera IK14E | Butterfield Rd |
| AIK15 | I 290 IKE TM Camera IK15 | St. Charles Rd |
| AIK16 | I 290 IKE TM Camera IK17 | North Ave |
| AIK18 | I 290 IKE TM Camera IK18 | York Rd |
| AIK19 | I 290 IKE TM Camera IK19 | Grand Ave |
| AIK23A | I 290 IKE TM Camera IK23A | Nordic Rd |

| | | |
|---|---|---|
| AIK23B | I 290 IKE TM Camera IK23B | Nordic Rd |
| AIK25 | I 290 IKE TM Camera IK25 | I 290 SB Ent Thorndale Rd |
| AIK25A | I 290 IKE TM Camera IK25A | I 290 SB Exit Thorndale Rd |
| AIK25B | I 290 IKE TM Camera IK25B | South of Devon |
| AIK26 | I 290 IKE TM Camera IK26 | South of Biesterfield Ramp |
| AIK26A | I 290 IKE TM Camera IK26A | South of Biesterfield |
| AIK26B | I 290 IKE TM Camera IK27 | .3 mi. North of Biesterfield |
| AIK27 | I 290 IKE TM Camera IK27A | .6 mi North of Biesterfield |
| AIK28 | I 290 IKE TM Camera IK28 | .1 mi South of Schaumburg |
| AIK28A | I 290 IKE TM Camera IK28A | Schaumburg Rd |
| AIK28B | I 290 IKE TM Camera IK28B | I 290 Ent IL 72 Higgins |
| AIK29 | I 290 IKE TM Camera IK29 | I 290 SB Exit IL 72 Higgins |
| AIK29A | I 290 IKE TM Camera IK29A | I 290 NB Ent IL 72 Higgins |
| AIK29B | I 290 IKE TM Camera IK29B | Woodfield Dr. |
| AIK29C | I 290 IKE TM Camera IK29C | I 290 Entrance Ramp Woodfield |
| AIK29D | I 290 IKE TM Camera IK29D | Golf Rd |
| AIK30 | I 290 IKE TM Camera IK30 | I 90 IL 53 SW Quad |
| AIK30A | I 290 IKE TM Camera IK30A | I 90 IL53 NW Quad |
| AIK30B | I 290 IKE TM Camera IK30B | IL 62 Algonquin Rd |

**Kennedy Expressway Traffic Monitoring Cameras (TM)**

| **EMCMS Loc. #** | **Camera #** | **Location Name** |
|---|---|---|
| AKE0 | I 90 94 JFK TM Camera KE0 | I 290 IKE NE Quad |
| AKE0A | I 90 94 JFK TM Camera KE0A | South of Jackson |
| AKE0B | I 90 94 JFK TM Camera KE0B | Hubbards Cave |
| AKE0C | I 90 94 JFK TM Camera KE0C | Hubbards Cave Underpass |
| AKE0D | I 90 94 JFK TM Camera KE0D | Hubbards Cave Underpass |
| AKE0E | I 90 94 JFK TM Camera KE0E | Hubbards Cave |
| AKE0F | I 90 94 JFK TM Camera KE0F | Hubbards Cave |

| | | |
|---|---|---|
| AKE1 | I 90 94 JFK TM Camera KE1 | Grand Ave |
| AKE1A | I 90 94 JFK TM Camera KE1A | Ontario Ohio St |
| AKE3 | I 90 94 JFK TM Camera KE3 | Webster Ave Underpass |
| AKE3A | I 90 94 JFK TM Camera KE3A | Webster Damon Ave |
| AKE3B | I 90 94 JFK TM Camera KE3B | Damon Ave Underpass |
| AKE4 | I 90 94 JFK TM Camera KE4 | Fullerton N AIS Underpass |
| AKE4A | I 90 94 JFK TM Camera KE4A | Fullerton Ave Underpass |
| AKE4B | I 90 94 JFK TM Camera KE4B | Fullerton S AIS Underpass |
| AKE4C | I 90 94 JFK TM Camera KE4C | Western Ave Underpass |
| AKE4D | I 90 94 JFK TM Camera KE4D | Logan Webster |
| AKE4E | I 90 94 JFK TM Camera KE4E | Logan Blvd Underpass |
| AKE5 | I 90 94 JFK TM Camera KE5 | Diversey Underpass |
| AKE5A | I 90 94 JFK TM Camera KE5A | California Diversey UP |
| AKE5B | I 90 94 JFK TM Camera KE5B | California Underpass |
| AKE5C | I 90 94 JFK TM Camera KE5C | SE of Sacremento Underpass |
| AKE5D | I 90 94 JFK TM Camera KE5D | Sacremento Underpass |
| AKE6 | I 90 94 JFK TM Camera KE6 | Kimball Underpass |
| AKE6A | I 90 94 JFK TM Camera KE6A | NW of Kimball |
| AKE7 | I 90 94 JFK TM Camera KE7 | Irving Park Rd Underpass |
| AKE7A | I 90 94 JFK TM Camera KE7A | Keeler Irving Park |
| AKE7B | I 90 94 JFK TM Camera KE7B | Keeler Underpass |
| AKE7C | I 90 JFK TM Camera KE7C | Kostner Ave Underpass |
| AKE7D | I 90 JFK TM Camera KE7D | NW of Kostner |
| AKE13 | I 90 JFK TM Camera KE13 | Cumberland Ave |
| AKE13A | I 90 JFK TM Camera KE13A | West of Cumberland Ave |
| AKE14 | I 90 JFK TM Camera KE14 | East River Rd |
| AKE15 | I 90 JFK TM Camera KE15 | East of Mannheim |
| AKE15A | I 90 JFK TM Camera KE15A | East of Mannheim Rd |

**Cameras at Pump Stations, for Expressway Traffic Monitoring**

| EMCMS Loc. # | Camera # | Location Name |
|---|---|---|
| APS23 | I 90 94 JFK TM Camera On Wood Pole | Roscoe Addison PS23 |

**Kingery Expressway Traffic Monitoring Cameras (TM)**

| EMCMS Loc. # | Camera # | Location Name |
|---|---|---|
| AKI0 | I 80 94 Kingery TM Cam AKI0 | State Line |
| AKI0A | I 80 94 Kingery TM Cam AKI0A | West of State Line |
| AKI0B | I 80 94 Kingery TM Cam AKI0B | William St |
| AKI1 | I 80 94 Kingery TM Cam AKI1 | Fritz Dr |
| AKI1A | I 80 94 Kingery TM Cam AKI1A | Torrence Ave |
| AKI2 | I 80 94 Kingery TM Cam AKI2 | Paxton Ave |
| AKI2A | I 80 94 Kingery TM Cam AKI2A | IL 394 NW Quad |
| AKI2B | I 80 94 Kingery TM Cam AKI2B | IL 394 I 94 |

**Stevenson Expressway Traffic Monitoring Cameras (TM)**

| EMCMS Loc. # | Camera # | Location Name |
|---|---|---|
| AST1 | I 55 STEV TM Camera ST1 | West of Canal St |
| AST1A | I 55 STEV TM Camera ST1A | I 90 94 JFK |
| AST1B | I 55 STEV TM Camera ST1B | I 90 94 Ryan |
| AST1C | I 55 STEV TM Camera ST1C | East of Halsted |
| AST5 | I 55 STEV TM Camera ST5 | West of California |
| AST6 | I 55 STEV TM Camera ST6 | East of Cicero |
| AST6A | I 55 STEV TM Camera ST6A | Cicero Exit Ramp |
| AST7 | I 55 STEV TM Camera ST7 | East of Central |
| AST8 | I 55 STEV TM Camera ST8 | West of Central |
| AST9 | I 55 STEV TM Camera ST9 | East of Harlem |
| AST10 | I 55 STEV TM Camera ST10 | Harlem Ave |
| AST10A | I 55 STEV TM Camera ST10A | .5 Mi East of 1st Ave |
| AST11 | I 55 STEV TM Camera ST11 | East of 1st Ave |
| AST11A | I 55 STEV TM Camera ST11A | West of 1st Ave |

| | | |
|---|---|---|
| AST12 | I 55 STEV TM Camera ST12 | .75 Mi West of 1St Ave |
| AST12A | I 55 STEV TM Camera ST12A | 1.25 Mi West of 1st Ave |
| AST13 | I 55 STEV TM Camera ST13 | .5 Mi East of East Ave |
| AST14 | I 55 STEV TM Camera ST14 | Lagrange East Side |
| AST14A | I 55 STEV TM Camera ST14A | Lagrange West Side |
| AST14B | I 55 STEV TM Camera ST14B | Lagrange Rd |
| AST15 | I 55 STEV TM Camera ST15 | East of Willow Springs Rd |
| AST17 | I 55 STEV TM Camera ST17 | Madison at County Line |

**Headquarters Area Cameras for Traffic Monitoring**

| EMCMS Loc. # | Expressway | Location Name |
|---|---|---|
| AHQ1A | I 90 @ ROSELLE TM Camera | Schaumburg Tower South Leg |
| AHQ1B | I 90 @ ROSELLE TM Camera | Schaumburg Tower South Leg |
| AHQ2 | I 90 @ ROSELLE TM Camera | Schaumburg Tower East Leg |

**Veterans Memorial Expressway Cameras**

| EMCMS Loc. # | Expressway | Location Name |
|---|---|---|
| VM0 | I 355 TM Camera | Lake St |
| VM1 | I 355 TM Camera | Army Trail Rd |

**Homeland Security Ramp Gates**

| EMCMS Loc. # | Expressway | Location Name |
|---|---|---|
| AIKIBAS | I 290 IKE IB Ramp Gate | Ashland Ave 25 Ft |
| AIKIBCA | I 290 IKE IB Ramp Gate | California 25 Ft |
| AIKIBCE | I 290 IKE IB Ramp Gate | Central Ave 30 Ft |
| AIKIBDA | I 290 IKE IB Ramp Gate | Damen 23 Ft |
| AIKIBHO | I 290 IKE IB Ramp Gate | Homan 23 Ft |
| AIKIBIN | I 290 IKE IB Ramp Gate | Independence 23 Ft |
| AIKIBKO | I 290 IKE IB Ramp Gate | Kostner 27.5 Ft |
| AIKIBLA | I 290 IKE IB Ramp Gate | Laramie 23 Ft |

| | | |
|---|---|---|
| AIKIBOA | I 290 IKE IB Ramp Gate | Oakley 25 Ft |
| AKEBAR | I 90 94 JFK IB Ramp Gate | Armitage |
| AKEIBDI | I 90 94 JFK IB Ramp Gate | Division |
| AKEIBHA | I 90 94 JFK IB Ramp Gate | Harlem |
| AKEIBKE | I 90 94 JFK IB Ramp Gate | Kedzie |

**REVLAC Equipment – Swing Gates**

| EMCMS Loc. # | Location Name | Type Equipment | Status |
|---|---|---|---|
| ASGIE1 | Inbound Edens | Swing Gate 1 | Critical |
| ASGIE2 | Inbound Edens | Swing Gate 2 | Critical |
| ASGIE3 | Inbound Edens | Swing Gate 3 | |
| ASGIE4 | Inbound Edens | Swing Gate 4 | |
| ASGIE5 | Inbound Edens | Swing Gate 5 | |
| ASGIE6 | Inbound Edens | Swing Gate 6 | |
| ASGIE7 | Inbound Edens | Swing Gate 7 | |
| ASGIE8 | Inbound Edens | Swing Gate 8 | |
| ASGIE9 | Inbound Edens | Swing Gate 9 | Critical |
| ASGIE10 | Inbound Edens | Swing Gate 10 | Critical |
| ASGIE11 | Inbound Edens | Swing Gate 11 | Critical |
| ASGIE12 | Inbound Edens | Swing Gate 12 | Critical |
| ASGIE13 | Inbound Edens | Swing Gate 13 | |
| ASGIE14 | Inbound Edens | Swing Gate 14 | Critical |
| ASGIE15 | Inbound Edens | Swing Gate 15 | Critical |
| ASGIS1 | Inbound Slip Ramp | Swing Gate 1 | Critical |
| ASGIS2 | Inbound Slip Ramp | Swing Gate 2 | Critical |
| ASGIS3 | Inbound Slip Ramp | Swing Gate 3 | |
| ASGIS4 | Inbound Slip Ramp | Swing Gate 4 | |
| ASGIS5 | Inbound Slip Ramp | Swing Gate 5 | |
| ASGIS6 | Inbound Slip Ramp | Swing Gate 6 | |

| | | | |
|---|---|---|---|
| ASGIS7 | Inbound Slip Ramp | Swing Gate 7 | |
| ASGIS8 | Inbound Slip Ramp | Swing Gate 8 | |
| ASGIS9 | Inbound Slip Ramp | Swing Gate 9 | Critical |
| ASGIS10 | Inbound Slip Ramp | Swing Gate 10 | Critical |
| ASGIS11 | Inbound Slip Ramp | Swing Gate 11 | Critical |
| ASGIS12 | Inbound Slip Ramp | Swing Gate 12 | Critical |
| ASGIS13 | Inbound Slip Ramp | Swing Gate 13 | |
| ASGIS14 | Inbound Slip Ramp | Swing Gate 14 | |
| ASGIS15 | Inbound Slip Ramp | Swing Gate 15 | |
| ASGIS16 | Inbound Slip Ramp | Swing Gate 16 | |
| ASGIS17 | Inbound Slip Ramp | Swing Gate 17 | |
| ASGIS18 | Inbound Slip Ramp | Swing Gate 18 | |
| ASGIS19 | Inbound Slip Ramp | Swing Gate 19 | |
| ASGIS20 | Inbound Slip Ramp | Swing Gate 20 | |
| ASGIS21 | Inbound Slip Ramp | Swing Gate 21 | |
| ASGIS22 | Inbound Slip Ramp | Swing Gate 22 | |
| ASGIS23 | Inbound Slip Ramp | Swing Gate 23 | Critical |
| ASGIS24 | Inbound Slip Ramp | Swing Gate 24 | Critical |
| ASGIW1 | Inbound West Leg | Swing Gate 1 | Critical |
| ASGIW2 | Inbound West Leg | Swing Gate 2 | Critical |
| ASGIW3 | Inbound West Leg | Swing Gate 3 | |
| ASGIW4 | Inbound West Leg | Swing Gate 4 | |
| ASGIW5 | Inbound West Leg | Swing Gate 5 | |
| ASGIW6 | Inbound West Leg | Swing Gate 6 | |
| ASGIW7 | Inbound West Leg | Swing Gate 7 | |
| ASGIW8 | Inbound West Leg | Swing Gate 8 | |
| ASGIW9 | Inbound West Leg | Swing Gate 9 | Critical |
| ASGIW10 | Inbound West Leg | Swing Gate 10 | Critical |

| | | | |
|---|---|---|---|
| ASGIW11 | Inbound West Leg | Swing Gate 11 | Critical |
| ASGIW12 | Inbound West Leg | Swing Gate 12 | Critical |
| ASGIW13 | Inbound West Leg | Swing Gate 13 | |
| ASGIW14 | Inbound West Leg | Swing Gate 14 | |
| ASGIW15 | Inbound West Leg | Swing Gate 15 | |
| ASGIW16 | Inbound West Leg | Swing Gate 16 | |
| ASGIW17 | Inbound West Leg | Swing Gate 17 | |
| ASGIW18 | Inbound West Leg | Swing Gate 18 | |
| ASGIW19 | Inbound West Leg | Swing Gate 19 | Critical |
| ASGIW20 | Inbound West Leg | Swing Gate 20 | Critical |
| ASGOM1 | Outbound Mainline | Swing Gate 1 | Critical |
| ASGOM2 | Outbound Mainline | Swing Gate 2 | Critical |
| ASGOM3 | Outbound Mainline | Swing Gate 3 | |
| ASGOM4 | Outbound Mainline | Swing Gate 4 | |
| ASGOM5 | Outbound Mainline | Swing Gate 5 | |
| ASGOM6 | Outbound Mainline | Swing Gate 6 | |
| ASGOM7 | Outbound Mainline | Swing Gate 7 | |
| ASGOM8 | Outbound Mainline | Swing Gate 8 | |
| ASGOM9 | Outbound Mainline | Swing Gate 9 | Critical |
| ASGOM10 | Outbound Mainline | Swing Gate 10 | Critical |
| ASGOM11 | Outbound Mainline | Swing Gate 11 | Critical |
| ASGOM12 | Outbound Mainline | Swing Gate 12 | Critical |
| ASGOM13 | Outbound Mainline | Swing Gate 13 | |
| ASGOM14 | Outbound Mainline | Swing Gate 14 | |
| ASGOM15 | Outbound Mainline | Swing Gate 15 | |
| ASGOM16 | Outbound Mainline | Swing Gate 16 | |
| ASGOM17 | Outbound Mainline | Swing Gate 17 | |
| ASGOM18 | Outbound Mainline | Swing Gate 18 | |

| | | | |
|---|---|---|---|
| ASGOM19 | Outbound Mainline | Swing Gate 19 | |
| ASGOM20 | Outbound Mainline | Swing Gate 20 | Critical |
| ASGOM21 | Outbound Mainline | Swing Gate 21 | Critical |
| ASGOO1 | Outbound Ontario | Swing Gate 1 | Critical |
| ASGOO2 | Outbound Ontario | Swing Gate 2 | Critical |
| ASGOO3 | Outbound Ontario | Swing Gate 3 | |
| ASGOO4 | Outbound Ontario | Swing Gate 4 | |
| ASGOO5 | Outbound Ontario | Swing Gate 5 | |
| ASGOO6 | Outbound Ontario | Swing Gate 6 | |
| ASGOO7 | Outbound Ontario | Swing Gate 7 | Critical |
| ASGOO8 | Outbound Ontario | Swing Gate 8 | Critical |
| ASGOO9 | Outbound Ontario | Swing Gate 9 | Critical |
| ASGOO10 | Outbound Ontario | Swing Gate 10 | Critical |
| ASGOO11 | Outbound Ontario | Swing Gate 11 | |
| ASGOO12 | Outbound Ontario | Swing Gate 12 | |
| ASGOO13 | Outbound Ontario | Swing Gate 13 | |
| ASGOO14 | Outbound Ontario | Swing Gate 14 | |
| ASGOO15 | Outbound Ontario | Swing Gate 15 | Critical |
| ASGOO16 | Outbound Ontario | Swing Gate 16 | Critical |
| ASGOS1 | Outbound Slip Ramp | Swing Gate 1 | Critical |
| ASGOS2 | Outbound Slip Ramp | Swing Gate 2 | Critical |
| ASGOS3 | Outbound Slip Ramp | Swing Gate 3 | |
| ASGOS4 | Outbound Slip Ramp | Swing Gate 4 | |
| ASGOS5 | Outbound Slip Ramp | Swing Gate 5 | |
| ASGOS6 | Outbound Slip Ramp | Swing Gate 6 | |
| ASGOS7 | Outbound Slip Ramp | Swing Gate 7 | |
| ASGOS8 | Outbound Slip Ramp | Swing Gate 8 | |
| ASGOS9 | Outbound Slip Ramp | Swing Gate 9 | |
| ASGOS10 | Outbound Slip Ramp | Swing Gate 10 | Critical |

| | | | |
|---|---|---|---|
| ASGOS11 | Outbound Slip Ramp | Swing Gate 11 | Critical |
| ASGOS12 | Outbound Slip Ramp | Swing Gate 12 | Critical |
| ASGOS13 | Outbound Slip Ramp | Swing Gate 13 | Critical |
| ASGOS14 | Outbound Slip Ramp | Swing Gate 14 | |
| ASGOS15 | Outbound Slip Ramp | Swing Gate 15 | |
| ASGOS16 | Outbound Slip Ramp | Swing Gate 16 | |
| ASGOS17 | Outbound Slip Ramp | Swing Gate 17 | |
| ASGOS18 | Outbound Slip Ramp | Swing Gate 18 | |
| ASGOS19 | Outbound Slip Ramp | Swing Gate 19 | |
| ASGOS20 | Outbound Slip Ramp | Swing Gate 20 | Critical |
| ASGOS21 | Outbound Slip Ramp | Swing Gate 21 | Critical |

**REVLAC Equipment – Roadside Control Panel**

| EMCMS Loc. # | Location Name | Type Equipment | Status |
|---|---|---|---|
| AIER1 | Roadside Control Panel | Inbound Edens IE1 | |
| AIER2 | Roadside Control Panel | Inbound Edens IE2 | |
| AIER3 | Roadside Control Panel | Inbound Edens IE3 | |
| AISR1 | Roadside Control Panel | Inbound Slip Ramp IS1 | |
| AISR2 | Roadside Control Panel | Inbound Slip Ramp IS2 | |
| AISR3 | Roadside Control Panel | Inbound Slip Ramp IS3 | |
| AIWR1 | Roadside Control Panel | Inbound West Leg IW1 | |
| AIWR2 | Roadside Control Panel | Inbound West Leg IW2 | |
| AIWR3 | Roadside Control Panel | Inbound West Leg IW3 | |
| AOMR1 | Roadside Control Panel | Outbound Mainline OM1 | |
| AOOR1 | Roadside Control Panel | Outbound Ontario OO1 | |
| AOOR2 | Roadside Control Panel | Outbound Ontario OO2 | |
| AOOR3 | Roadside Control Panel | Outbound Ontario OO3 | |
| AOOR4 | Roadside Control Panel | Outbound Ontario OO4 | |
| AOSR1 | Roadside Control Panel | Outbound Slip Ramp OS1 | |
| AOSR2 | Roadside Control Panel | Outbound Slip Ramp OS2 | |

**REVLAC--Buildings and Miscellaneous Equipment**

| EMCMS Loc. # | Location Name | Type Equipment | Status |
|---|---|---|---|
| AA | Bldg A I 90 94 JFK | 950 W Ontario OM | Critical |
| AB | Bldg B I 90 94 JFK | 1035 W Grand Ave | |
| AC | Bldg C I 90 94 JFK | 2735 George St OS | Critical |
| AD | Bldg D I 90 94 JFK | 3002 N Fransisco IS | Critical |
| AE | Bldg E I 90 94 JFK | 4755 Wilson Ave OE | Critical |
| ACOM | IDOT ComCenter Equipment ( 2 SPC, etc.) | 201 W Center Ct. Schaumburg | |
| AETP | Emergency Traffic Patrol | 3501 Harrison St Chicago | |
| AISP | State Police District Chicago | Communications Area Des Plaines | Critical |
| ATFOS | Foster Tower Equipment | I 94 at Foster Ave | |
| ATHIL | Hillside Tower Equipment | 5250 W Harrison | |
| ATROD | Rodenburg Yard Tower Equipment | 1480 Rodenburg Rd | |
| ATSCH | Schaumburg Tower Equipment | I 90 @ Roselle Rd | |

**REVLAC – Fiber Optic/LED Signs**

| EMCMS Loc. # | Location Name | Type Equipment | Status |
|---|---|---|---|
| AIEAS1 | Aux Sign | Inbound Edens IE AS1 | Critical |
| AIEAS2 | Aux Sign | Inbound Edens IE AS2 | Critical |
| AIEG1 | Gore Sign | Inbound Edens IE1 | Critical |
| AIEV1 | Chevron | Inbound Edens IE V1 | Critical |
| AIEV2 | Chevron | Inbound Edens IE V2 | Critical |
| AIEV3 | Chevron | Inbound Edens IE V3 | Critical |
| AISAS1 | Aux Sign | Inbound Slip Ramp IS AS1 | Critical |
| AISAS2 | Aux Sign | Inbound Slip Ramp IS AS2 | Critical |
| AISG1 | Gore Sign | Inbound Slip Ramp IS1 | Critical |
| AISV1 | Chevron | Inbound Slip Ramp IS V1 | Critical |

| | | | |
|---|---|---|---|
| AISV2 | Chevron | Inbound Slip Ramp IS V2 | Critical |
| AISV3 | Chevron | Inbound Slip Ramp IS V3 | Critical |
| AIWAS1 | Aux Sign | Inbound West Leg IW AS1 | Critical |
| AIWAS2 | Aux Sign | Inbound West Leg IW AS2 | Critical |
| AIWG1 | Gore Sign | Inbound West Leg IW1 | Critical |
| AIWV1 | Chevron | Inbound West Leg IW1 | Critical |
| AIWV2 | Chevron | Inbound West Leg IW2 | Critical |
| AIWV3 | Chevron | Inbound West Leg IW3 | Critical |
| AIWV4 | Chevron | Inbound West Leg IW4 | Critical |
| AIWV5 | Chevron | Inbound West Leg IW5 | Critical |
| AOMAS1 | Aux Sign | Outbound Mainline OM AS1 | Critical |
| AOMAS2 | Aux Sign | Outbound Mainline OM AS2 | Critical |
| AOMAS3 | Aux Sign | Outbound Mainline OM AS3 | Critical |
| AOMG1 | Gore Sign | Outbound Mainline OM1 | Critical |
| AOMV1 | Chevron | Outbound Mainline OM V1 | Critical |
| AOMV2 | Chevron | Outbound Mainline OM V2 | Critical |
| AOMV3 | Chevron | Outbound Mainline OM V3 | Critical |
| AOMV4 | Chevron | Outbound Mainline OM V4 | Critical |
| AOOAS1 | Aux Sign | Outbound Ontario OO AS1 | Critical |
| AOOAS2 | Aux Sign | Outbound Ontario OO AS2 | Critical |
| AOOAS3 | Aux Sign | Outbound Ontario OO AS3 | Critical |
| AOOG1 | Gore Sign | Outbound Ontario OO1 G1 | Critical |
| AOOV1 | Chevron | Outbound Ontario OO V1 | Critical |
| AOOV2 | Chevron | Outbound Ontario OO V2 | Critical |
| AOOV3 | Chevron | Outbound Ontario OO V3 | Critical |
| AOSAS1 | Aux Sign | Outbound Slip Ramp OS AS1 | Critical |
| AOSAS2 | Aux Sign | Outbound Slip Ramp OS AS2 | Critical |
| AOSG1 | Gore Sign | Outbound Slip Ramp OS1 | Critical |

| | | | |
|---|---|---|---|
| AOSV1 | Chevron | Outbound Slip Ramp OS V1 | Critical |
| AOSV2 | Chevron | Outbound Slip Ramp OS V2 | Critical |
| AOSV3 | Chevron | Outbound Slip Ramp OS V3 | Critical |

**REVLAC – Operations Cameras**

| **EMCMS Loc. #** | **Location Name** | **Type Equipment** | **Status** |
|---|---|---|---|
| AIECC1 | Operations Camera | Inbound Edens IE CC1 | |
| AIECC2 | Operations Camera | Inbound Edens IE CC2 | |
| AIECC3 | Operations Camera | Inbound Edens IE CC3 | |
| AIECC4 | Operations Camera | Inbound Edens IE CC4 | |
| AIECC5 | Operations Camera | Inbound Edens IE CC5 | |
| AIECC6 | Operations Camera | Inbound Edens IE CC6 | |
| AISCC1 | Operations Camera | Inbound Slip Ramp IS CC1 | |
| AISCC2 | Operations Camera | Inbound Slip Ramp IS CC2 | |
| AISCC3 | Operations Camera | Inbound Slip Ramp IS CC3 | |
| AISCC4 | Operations Camera | Inbound Slip Ramp IS CC4 | |
| AISCC5 | Operations Camera | Inbound Slip Ramp IS CC5 | |
| AISCC6 | Operations Camera | Inbound Slip Ramp IS CC6 | |
| AISCC7 | Operations Camera | Inbound Slip Ramp IS CC7 | |
| AISCC8 | Operations Camera | Inbound Slip Ramp IS CC8 | |
| AIWCC1 | Operations Camera | Inbound West Leg IW CC1 | |
| AIWCC2 | Operations Camera | Inbound West Leg IW CC2 | |
| AIWCC3 | Operations Camera | Inbound West Leg IW CC3 | |
| AIWCC4 | Operations Camera | Inbound West Leg IW CC4 | |
| AIWCC5 | Operations Camera | Inbound West Leg IW CC5 | |
| AIWCC6 | Operations Camera | Inbound West Leg IW CC6 | |
| AIWCC7 | Operations Camera | Inbound West Leg IW CC7 | |
| AOMCC1 | Operations Camera | Outbound Mainline OM CC1 | |

| | | | |
|---|---|---|---|
| AOMCC2 | Operations Camera | Outbound Mainline OM CC2 | |
| AOMCC3 | Operations Camera | Outbound Mainline OM CC3 | |
| AOMCC4 | Operations Camera | Outbound Mainline OM CC4 | |
| AOMCC5 | Operations Camera | Outbound Mainline OM CC5 | |
| AOMCC6 | Operations Camera | Outbound Mainline OM CC6 | |
| AOMCC7 | Operations Camera | Outbound Mainline OM CC7 | |
| AOOCC1 | Operations Camera | Outbound Ontario OO CC1 | |
| AOOCC2 | Operations Camera | Outbound Ontario OO CC2 | |
| AOOCC3 | Operations Camera | Outbound Ontario OO CC3 | |
| AOOCC4 | Operations Camera | Outbound Ontario OO CC4 | |
| AOOCC5 | Operations Camera | Outbound Ontario OO CC5 | |
| AOOCC6 | Operations Camera | Outbound Ontario OO CC6 | |
| AOSCC1 | Operations Camera | Outbound SlipRamp OSCC1 | |
| AOSCC2 | Operations Camera | Outbound SlipRamp OSCC2 | |
| AOSCC3 | Operations Camera | Outbound SlipRamp OSCC3 | |
| AOSCC4 | Operations Camera | Outbound SlipRamp OSCC4 | |
| AOSCC5 | Operations Camera | Outbound SlipRamp OSCC5 | |
| AOSCC6 | Operations Camera | Outbound SlipRamp OSCC6 | |
| AOSCC7 | Operations Camera | Outbound SlipRamp OSCC7 | |

**REVLAC – Changeable Message Signs**

| **EMCMS Loc. #** | **Location Name** | **Type Equipment** | **Status** |
|---|---|---|---|
| AOMCM1 | Changeable Message | Outbound Mainline OM CM1 | |
| AOMCM2 | Changeable Message | Outbound Mainline OM CM2 | |
| AOOCM3 | Changeable Message | Outbound Ontario OO CM3 | Critical |
| AOOCM4 | Changeable Message | Outbound Ontario OO CM4 | |
| AOOCM5 | Changeable Message | Outbound Ontario OO CM5 | |

| | | | |
|---|---|---|---|
| AOMCM6 | Changeable Message | Outbound Mainline OM CM6 | Critical |
| AOMCM7 | Changeable Message | Outbound Mainline OM CM7 | Critical |
| AOSCM8 | Changeable Message | Outbound SlipRamp OSCM8 | |
| AOSCM9 | Changeable Message | Outbound SlipRamp OSCM9 | Critical |
| AISCM10 | Changeable Message | Inbound Slip Ramp IS CM10 | Critical |
| AISCM11 | Changeable Message | Inbound Slip Ramp IS CM11 | |
| AIECM12 | Changeable Message | Inbound Edens IE CM12 | Critical |
| AIECM13 | Changeable Message | Inbound Edens IE CM13 | |
| AIWCM14 | Changeable Message | Inbound West Leg IW CM14 | Critical |
| AIWCM15 | Changeable Message | Inbound West Leg IW CM15 | |

**REVLAC – Barrier Dragnets and Barrier Signs**

| EMCMS Loc. # | Equipment Type | Location | Status |
|---|---|---|---|
| AIEB1 | Barrier 28.0 Ft | Inbound Edens IE | Critical |
| AISB1 | Barrier 36.21 Ft | Inbound Slip Ramp IS | Critical |
| AIWB1 | Barrier 28.94 Ft | Inbound West Leg IW | Critical |
| AOMB1 | Barrier 22.27 Ft | Outbound Mainline OM B1 | Critical |
| AOOB1 | Barrier 28.0 Ft | Outbound Ontario OO B1 | Critical |
| AOSB1 | Barrier 38.25 Ft | Outbound Slip Ramp OS B1 | Critical |
| AISX1 | Barrier “X” Sign | Inbound Slip Ramp IS X1 | |
| AIWX1 | Barrier “X” Sign | Inbound West Leg IW X1 | |
| AOMX1 | Barrier “X” Sign | Outbound Mainline OM X1 | |
| AOOX1 | Barrier “X” Sign | Outbound Ontario OO X1 | |
| AOSX1 | Barrier “X” Sign | Outbound Slip Ramp OS X1 | |

**RACS Equipment**

| EMCMS Loc. # | Location Name | Type Equipment | Status |
|---|---|---|---|
| ARACSC1 | RACS Chevron Aux Sign | EB Roosevelt Left Shoulder | |
| ARACSC2 | RACS Chevron Aux Sign | EB Roosevelt Left Shoulder | |

| | | | |
|---|---|---|---|
| ARACSC3 | RACS Chevron Aux Sign | EB Roosevelt Left Shoulder | |
| ARACSC4 | RACS Chevron Aux Sign | EB Roosevelt Left Shoulder | |
| ARACSC5 | RACS Chevron Aux Sign | EB Roosevelt Left Shoulder | |
| ARACSC6 | RACS Chevron Aux Sign | EB Roosevelt Left Shoulder | |
| ARACSG1 | RACS Swing Gate 1 | Roosevelt Ramp | Critical |
| ARACSG2 | RACS Swing Gate 2 | Roosevelt Ramp | Critical |
| ARACSG3 | RACS Swing Gate 3 | Roosevelt Ramp | |
| ARACSG4 | RACS Swing Gate 4 | Roosevelt Ramp | |
| ARACSG5 | RACS Swing Gate 5 | Roosevelt Ramp | |
| ARACSG6 | RACS Swing Gate 6 | Roosevelt Ramp | |
| ARACSG7 | RACS Swing Gate 7 | Roosevelt Ramp | |
| ARACSG8 | RACS Swing Gate 8 | Roosevelt Ramp | |
| ARACSG9 | RACS Swing Gate 9 | Roosevelt Ramp | |
| ARACSG10 | RACS Swing Gate 10 | Roosevelt Ramp | |
| ARACSHH | RACS Equip Hillside Hub | Bldg 5250 W. Harrison St | |
| ARACSR1 | RACS Dyn Message Sign | .25 Mi West of York Rd | Critical |
| ARACSR3 | RACS Dyn Message Sign | Between York Rd & I 88 | Critical |
| ARACSR4 | RACS Dyn Message Sign | Ramp Entrance | Critical |
| ARACSAS1 | RACS Aux Sign AS1 | West of I 88 | |
| ARACSAS2 | RACS Aux Sign AS2 | West of I 88 | |
| ARACS1 | ILL 38 RACS OP Camera | West of York Rd | |
| ARACS2 | ILL 38 RACS OP Camera | York Rd | |
| ARACS3 | ILL 38 RACS OP Camera | IL 38 to I 290 | |
| ARACS4 | ILL 38 RACS OP Camera | IL 38 to I 290 | Critical |
| ARACS5 | ILL 38 RACS OP Camera | IL 38 to I 290 | Critical |
| ARACS6 | ILL 38 RACS OP Camera | IL 38 to I 290 | |
| ARACS7 | ILL 38 RACS OP Camera | IL 38 to I 290 | Critical |
| ARACSHTC | RACS Hillside Tower Camera | Hillside Tower 5250 W Harrison | |

| | | | |
|---|---|---|---|
| ARACSNTC | RACS Nordic Tower Camera | 900 W Nordic | |
| ARACSNH | RACS Equipment Nordic Hut | Bldg 900 W Nordic Rd | |
| ATNOR | Nordic Tower Equipment | I 355 at I 290 | |

## 4.0 GENERAL CONTRACT REQUIREMENTS

## 4.1 BASIC CONTRACT PROVISIONS

### 4.1.1 TERM OF CONTRACT

Once the Contract is executed and the insurance submittals have been approved, the Contractor shall begin preparations to assume routine and non-routine maintenance responsibilities as specified and shall perform work as required and as directed by the Engineer. Certain prepatory work, such as transfer of state stock inventory, purchase of spare materials for System equipment repairs, and other items, as arranged with the Engineer, shall be performed and completed in advance of the start of the Contract.

The Contract shall be valid for all operations from 12:00 a.m. on April 1, 2008, to 12:00 a.m. (midnight) on March 31, 2009, subject to cancellation provisions specified herein. The Contract shall remain in force, even following the completion of routine maintenance response requirements, until March 31, 2010. All routine and non-routine contract work shall be completed by that date. The Contractor shall comply with authorized work completion dates, however, any authorized non-routine work which has not yet been started, due to circumstances such as delays in issuance of permits by outside agencies, will be cancelled. If the Contract is renewed, the Department shall make the effort, if circumstances allow, to re-authorize in the renewal term, any work item cancelled from the prior contract term.

All insurance as required for this Contract shall be applicable at the time of execution of this contract and shall remain in force until the contract is closed by IDOT.

### 4.1.2 RENEWAL

The Department has the sole discretion to renew this contract for one (1) additional term. This option would extend the contract for one additional term from 12:00 A.M. April 1, 2009 to 12:00 A.M. (midnight) March 31, 2010, per all revisions or amendments as defined. If renewed, the Contract shall remain in force, even following the completion of routine maintenance response requirements, until March 31, 2011. All routine and non-routine contract work shall be completed by that date. The Contractor shall comply with authorized work completion dates, however, any authorized non-routine work which has not yet been started, due to circumstances such as delays in issuance of permits by outside agencies, will be cancelled.

Upon notification of the contract renewal by IDOT, the Contractor shall complete and submit IDOT's contract renewal form, within fifteen (15) days of notification together with documentation of the contract bond extension and copies of required insurance policies for the renewal year as well as any other documentation requested by the Department.

The existence of a backlog from a prior year shall not be justification for delay of work in the renewal year.

The Contractor shall resubmit requests for sub-contractor approval, Form BC-260-A, for each Sub-Contractor prior to the start of the renewal year. The Contractor shall submit, for Engineer approval, for anticipated use of any new equipment or parts in the new term, which were not submitted and approved in the prior contract term.

The original contract term and the renewal term shall be considered independent with respect to completion of work, payment, and withholding of payment as well as all associated work documentation.

### 4.1.3 DE-AUTHORIZATION OF WORK

The Department shall authorize all work by the end of the Contract term and the Contractor is expected to complete said work by the agreed due date. Work which may not be completed by the end date of the Contract, due to circumstances beyond the control of the Contractor such as major weather events, delays in issuance of permits by outside agencies, etc., shall be completed by March 31, 2010, (or March 31, 2011 if this Contract is renewed) or shall be subject to de-authorization.

The Contractor shall be entitled to receive payment for services and work performed and materials furnished prior to the effective date of the de-authorization of the work, but shall not be entitled to receive any damages on account of such de-authorization, or any further payment whatsoever.

### 4.1.4 CANCELLATION

Only the Department may cancel the contract. The Contractor shall be given 30 days advance notice of cancellation of this Contract. In the event of cancellation, the Contractor shall be entitled to receive payment for services and work performed and materials furnished under the terms of the Contract prior to the effective date of cancellation, but shall not be entitled to receive any damages on account of such cancellation or any further payment whatsoever. There shall be no payment for work not started and/or not completed.

The Department or the Engineer may take possession of the incomplete work and all materials, associated special tools and appliances for any reason which he/she deems to be in the public interest and his/her decision shall be final.

## 4.2 CONTRACT TRANSITION

It is the obligation of the Contractor to make every effort to provide a seamless transition from the prior ASMC to this Contract. The Contractor shall assure the Department that at 12:01 a.m. on April 1, 2008 the transfer is complete and transparent to the public, that the systems remain continuously operational, monitored and maintained.

It shall be recognized that the transfer and transition from one contract to the next will not be instantaneous with regard to all aspects of all systems. Certain work may remain incomplete at the time of transition, requiring coordination and system access to allow work completion after contract transfer. The Contractor shall cooperate fully to facilitate this transition period work.

All necessary equipment and/or services required for the transitions shall be incidental to the contract routine maintenance unless otherwise noted herein as non-routine work.

## 4.3 CONTRACTOR PERFORMANCE

### 4.3.1 PRIORITY OF WORK

For the Contractor's forces employed on this contract, the work on this contract shall take precedence over work performed for others, including other government agencies, except as expressly permitted by the Engineer or specified herein. This requirement applies to work activities on a daily basis. The Engineer reserves the authority to re-direct the Contractor's work priorities in response to emergency situations, potential hazards, contract coordination and incomplete or deficient work and the Contractor will be allowed no additional compensation for priorities so redirected.

### 4.3.2 UNSATISFACTORY SERVICE

Failure to perform all functions in the manner specified and within any time limit specified may seriously jeopardize the welfare of the general motoring public. Should the Contractor refuse or fail to perform the work or any separable part thereof promptly and in the manner specified in this Contract with such diligence as will insure its satisfactory completion, the Engineer will advise the Contractor via a written transmittal regarding the nature of unsatisfactory service. The Contractor shall take necessary action in the most practical manner possible to correct the items listed. The Contractor shall respond back to the Engineer within five (5) working days from the time of receipt of the report, explaining the reasons for the improper service or delay in work completion, and the remedial action being taken to resolve the problem.

If after two (2) written warnings that a work item is not in contract compliance or work has not been completed per the agreed time frame, the Engineer will take additional remedial action such as withholding of all or a portion of the monthly payment due to the Contractor or assessing liquidated damages.

### 4.3.3 LIQUIDATED DAMAGES

Liquidated damages may be assessed for any work that is not performed satisfactorily to contract requirements, not completed for the month, or response time was not met, unless the Contractor can demonstrate, to the satisfaction of the engineer, that his efforts were deterred by the Department, or by other contractors employed by the Department or by unforeseeable causes beyond his control and without the fault or negligence of the Contractor. The Contractor expressly agrees to have the Department deduct the sum of Five Hundred Dollars ($500.00), per week, for each item of such unsatisfactory work, or work item remaining incomplete beyond the established completion date, or per incident. Such monies shall be deducted as liquidated damages to cover losses and expenses to the Department, and not as a penalty. The Contractor shall be liable to the Department for any costs incurred in excess of the liquidated damages collected by the Department.

The Department shall recover said liquidated damages by deducting the amount thereof from any monies due or that may become due to the Contractor. If said monies are insufficient to cover said damages, then the Contractor or the Surety shall pay such amount due.

## 4.4 SUBCONTRACTING OF WORK

### 4.4.1 GENERAL REQUIREMENTS

Except as modified herein, subcontracting of the contract work shall be in conformance with the requirements of the Standard Specifications and Supplements. The Contractor shall obtain approval of the Engineer for all subcontractors to be employed in the contract work, prior to commencement of work.

Functions that require a dispersed workforce and rapid response (immediate corrective action) shall not be subcontracted without specific written approval by the Engineer. Wholesale subcontracting of a system's maintenance will not be allowed.

The Contractor shall submit a Request for Approval of Subcontractor, Form BC260A for each subcontractor to:

Diane O'Keefe, P.E., Region I Engineer
Illinois Department of Transportation
Attn: Martin E. Anderson, P.E.
Bureau Chief of Electrical Operations
201 W. Center Court
Schaumburg IL 60196-1096

All requests for subcontractor approvals shall be accompanied by a written subcontract agreement which sets forth the scope of services to be subcontracted, the lump sum or unit price for such services and the signatures of the subcontracting parties. In addition, a certification from the Contractor will be required, stating that the required Federal and State provisions will be inserted in the final contract with the subcontractor. Initial submittals will be due at the Pre-Construction meeting.

### 4.4.2 SUBCONTRACTOR REPRESENTATIVES

Except for arrangements made in advance for subcontractors regularly engaged on a continuous basis in the contract work or as otherwise specifically agreed between the Engineer and the Contractor for special circumstances, the Contractor shall have a representative included in all interaction between his/her subcontractors and the Engineer.

Subcontractors assigned to regular, continuous work for the Contract shall have a single designated representative authorized to represent the subcontractor in dealings with the Contractor and the Engineer with respect to contract matters. This individual shall have a thorough knowledge of contract requirements and shall have the authority to commit resources for contract work.

### 4.4.3 SUBCONTRACTOR BILLING

For non-routine agreed price work (not pay items) performed by an approved subcontractor, as named on the authorization for work and on the contractor invoice, in accordance with Article 109.04 (b) (7) of the Standard Specifications for Road and Bridge Construction, when work is performed by an approved subcontractor, the Contractor shall be allowed administrative costs of an amount equal to five percent of the total approved costs on an individual authorization, with the minimum being $100.00.

Specialty service work as authorized and originated by the Department (non-routine vendor authorizations for expenses incurred by the Department) shall be considered as work by the Contractor, and not subcontracted work for purposes of billing.

## 4.5 CONTRACT ADMINISTRATION AND CORRESPONDENCE

### 4.5.1 DAILY CONTRACT ADMINISTRATION

The ASMC will be administered by the IDOT District 1 Bureau of Electrical Operations and most activities related to the contract shall be handled through the Bureau of Electrical Operations

personnel located in the Electrical Operations Field Office in Schaumburg. Contractor Supervisors and administrative personnel shall communicate daily with the IDOT System Engineers and Technicians.

The Resident Engineer, Mr. Rao Vaitla, Electrical Operations Section Chief, will be responsible for the control of the work. The Contractor Project Manager shall communicate with the IDOT Resident Engineer on all formal contract matters, with written or email correspondence copied to the Contract Administrator, Mr. Martin Anderson, Bureau Chief of Electrical Operations.

The Contractor shall address all matters of Contract interpretation or dispute at the lowest possible level. Issues which are not addressed to the Contractor's satisfaction at the Engineer/Technician level may be raised to the IDOT Resident Engineer level. If not addressed at that level, the issue may next be addressed with the Contract Administrator.

### 4.5.2 WORK STATUS MEETINGS

Work status meetings may be requested by the Engineer or the Contractor. These meetings shall normally be held once per month, but may be held weekly if necessary. The Contractor Project Manager or other personnel, as requested by the Engineer, shall attend work status meetings, when requested by the Engineer.

### 4.5.3 FORMAL CORRESPONDENCE

All formal correspondence to IDOT regarding contractual matters shall only be submitted by the Principal or Project Manager and shall be addressed as follows:

Diane O'Keefe, P.E., District 1/Region 1 Engineer
Illinois Department of Transportation, District 1/Region 1
Attn: Martin E. Anderson, P.E.
Bureau Chief of Electrical Operations
201 W. Center Court
Schaumburg, Illinois 60196-1096

cc: H. Rao Vaitla, P.E. Resident Engineer

### 4.5.4 INFORMAL CORRESPONDENCE

Informal correspondence, related to day-to-day maintenance matters, shall be made by means of email, and may be made directly to the parties involved. All Contractor personnel who are assigned work on the ASMC shall have an email address. The email service shall not be a service that attaches advertising to email.

### 4.5.5 WIRELESS FIELD COMMUNICATIONS SYSTEMS

The Contractor shall provide and maintain adequate, reliable, continuous project-wide communications among the Contractor's forces and between the Contractor and the Department's designated representatives. To assure a consistent and reliable transmit and receive coverage throughout the geographic area of District 1, the Contractor shall have a multiple-location-infrastructure based, digital wireless communications system (trunked radio system with integral cellular telephone capability) as offered by Nextel™ or an equivalent provider.

The Contractor shall provide and maintain functioning units for all Contractor supervisor or management personnel, patrol personnel, and key ASMC positions as directed by the Engineer. All Contractor and Sub-contractor personnel utilized to perform any regular day-to-day work, especially damage and trouble-call response activities shall be provided units.

The Contractor shall submit catalog cuts of the proposed units and the proposed system at the Pre-Construction Meeting. Units shall have digital radio one-to-one and telephone communications service allowing the capability to initiate and receive calls in a direct connection from party to party, have telephone service, have an assigned two or three digit number assigned by the local exchange carrier, a name and number called display, a missed call indicator, a last number quick call, caller-id, choice of ring or vibrate call notifications, have the capability of storing at least ninety-nine (99) preset numbers, cigarette lighter charger/adapters, AC recharging units in the form of cords or desktop units, largest Lithium-Ion battery available, audible alert for radio or telephone messages, separate carry case or protector, and belt carry attachment for each unit. The system shall provide voice-messaging capability to store at least ten (10) messages. PC compatible software shall be furnished for the programming of numbers, name changes, and other programmable functions. To facilitate the Department's inspection of contract work, the Contractor shall furnish and maintain, during the Contract term, a maximum of four (4) units and compatible wireless hands free receivers equal to or better than Motorola H800 headset, for IDOT management and inspector personnel.

Any security access code associated with each Nextel™ or equivalent unit shall be kept secure by delivery direct from the equipment/service provider to the Engineer or his designee. Copies of telephone billing charges resulting from state inspector use of equipment shall be provided, upon request.

### 4.5.6 EMCMS – ELECTRICAL MAINTENANCE CALL-OUT AND MANAGEMENT SYSTEM

**General Requirements**

The emergency call-out data base, and a timely, accurate flow of information regarding contract work and billing are very much instrumental to the successful performance of the Advanced Systems Maintenance Contract. The Electrical Maintenance Call-Out and Management System (EMCMS) consists of hardware, software, and an information database to support the Contract needs. The existing established IDOT EMCMS shall continue into this Contract to assure operational continuity. Bidders may obtain a list of required hardware from the current maintainer of the EMCMS, Xsys Inc., 653 Steele Drive, Valparaiso, IN. 46385, Telephone 219-477-4816.

Multiple maintenance contracts are managed through the current EMCMS. Due to security concerns, the Contractor is encouraged to use the current maintainer of EMCMS. However, should the Contractor intend to choose another maintainer, he shall submit the qualifications and references of the company for Department's review and approval to assure security and integrity of the system. Only Department approved maintainers may perform any changes on the EMCMS.

The Contractor is required to have a minimum of two workstations with Windows XP or 2000 OS and internet explorer, (one of which must be located in the Contractor's Dispatch facility), with sufficient speed and memory to run EMCMS software, and necessary T-1 phone lines, routers, etc, in place for inspection by the Engineer, by April 1, 2008. The connections and the set-up of the EMCMS servers for the new workstations shall be performed by the maintainer of the EMCMS. Specifications for this equipment shall be provided at the Pre-bid meeting.

In case of disruption of service, all Contractor EMCMS equipment, (all hardware, and communications lines between the IDOT headquarters computer and all remote terminals) shall be restored within eighteen (18) hours, except as otherwise permitted by the Engineer. The Contractor shall have sufficient staff or have a sub-contractor in place to maintain the EMCMS workstations and communications links.

The Contractor is responsible to have the approved maintainer of EMCMS to perform necessary programming corrections due to Contractor database entry errors or printing errors or other malfunctions during the course of his work. If the Contractor finds a need to modify or add tables, screens and reports in the EMCMS to aid him in contract management or to improve the productivity of his personnel, he may do so upon approval of the Engineer, but only through the approved maintainer.

In addition, the Contractor's maintainer of the EMCMS shall provide modifications to the existing administrative screens and reports, including the budget report, for contract accounting and contract administrative personnel changes. It is expected that this work will take approximately 150 hours of time. This work shall be completed by December 31, 2008.

Refer to Article 6.0 Work Documentation requirements for EMCMS data entry requirements. No other method of billing or work documentation shall be allowed. All costs for installation of EMCMS workstations, printers, their operation and maintenance, including revisions as described above, shall be borne by the Contractor and shall be included in the routine maintenance.

**Site Inspection**

As part of the site inspection visits offered by the Department prior to bidding, a limited tour of the EMCMS equipment and operations at the Electrical Operations Field Office in Schaumburg, IL, and the District 1 Headquarters in Schaumburg will be offered to familiarize bidders with the procedures.

## 4.6 FACILITIES

### 4.6.1 GENERAL REQUIREMENTS

The Contractor shall have and maintain adequate facilities at all times for timely completion of work under this contract. At the time of bidding, the Contractor shall have an established business presence in the District 1, preferably a headquarters, to assure the timeliness of the assumption of the contract work.

A minimum of one (1) Contractor facility, shall be a permanent building, strategically located geographically within the Region, to support the Contractor's work force, and shall meet all applicable building codes, and shall be equipped with adequate electric service, heat, air conditioning, telephone service, computer equipment for email communications, EMCMS equipment, a central-station security alarm system or equivalent, and restroom facilities. It is expected that the Contractor's dispatch center would be located at this facility. The Contractor may, however, implement other facility location(s) for the contract work and/or dispatching of personnel, subject to the approval of the Engineer. Contractor storage facilities for spare parts and State Stock are discussed in Article 5.0.

The Engineer shall be allowed immediate access to all Contractor's facilities, or applicable portions thereof, at all reasonable times, for purposes of inspection of state-owned property or for monitoring of activities required under the contract.

All Contractor's facilities shall be complete and ready for operation no later than March 15, 2008, including all communications links, etc., ready for a demonstration inspection by the Engineer.

### 4.6.2 CONTRACTOR DISPATCH CENTER

The Contractor shall provide a dispatch center, staffed 24-hours/seven days per week. The dispatch center shall be located at a permanent facility owned or leased by the Contractor. It may be part of the contractor's headquarters operation, or another facility which meets the requirements of Article 4.6.1. Under no circumstances shall the Contractor have a separately

contracted dispatch or answering service, or voice mail service. Contractor employed individuals shall dispatch personnel and perform all EMCMS entry requirements in the Dispatch Center. It will not be acceptable for the State to have to make more than one call to notify the Contractor and obtain response to maintenance or incident needs.

The dispatch center shall be equipped with EMCMS equipment to document, on a continuous real time basis, each call received, the personnel dispatched for response, time of arrival, action taken in response to the call, follow-up work, if necessary, etc. Refer also to Ticket requirements in Article 6.0.

The dispatch center shall be equipped with a computer with internet access to allow monitoring of the GCM Gateway Network. (Review Article 6.1.1, A-6 Other Systems Routine Maintenance)

## 4.7 CONTRACT PERSONNEL

### 4.7.1 GENERAL RESPONSIBILITIES

The Contractor shall, at all times, provide a force of qualified personnel, as approved by the Engineer, sufficient in number to simultaneously perform the routine maintenance work, non-routine work and any specialized work operations required and described herein, including emergency operations at all times of the day and night.

Except as otherwise restricted, the workforce employed on this contract need not be exclusive to this contract. However, it is the intent of this contract that Department of Transportation work shall take precedence over other work performed by the Contractor.

The Engineer may grant the Contractor authorization to postpone IDOT work to address emergency situations of others. but the shortage of workforce personnel, including subcontractor personnel, shall otherwise be insufficient grounds for the Contractor's failure to perform routine or non-routine work within the prescribed time constraints.

The Contractor shall remain responsible for any and all union agreements applicable to his/her workforce on the Contract. Union jurisdictions and other union contract requirements shall not become grounds for failure to perform the contract work.

In order for the Contract to function effectively, specific personnel functions are required to provide quality maintenance service to the public. Required expertise must be available to the performance of the contract at all times.

The Contractor shall provide individual photo card identification for all personnel working on the Advanced Systems Maintenance Contract.

### 4.7.2 ORGANIZATIONAL DOCUMENTATION

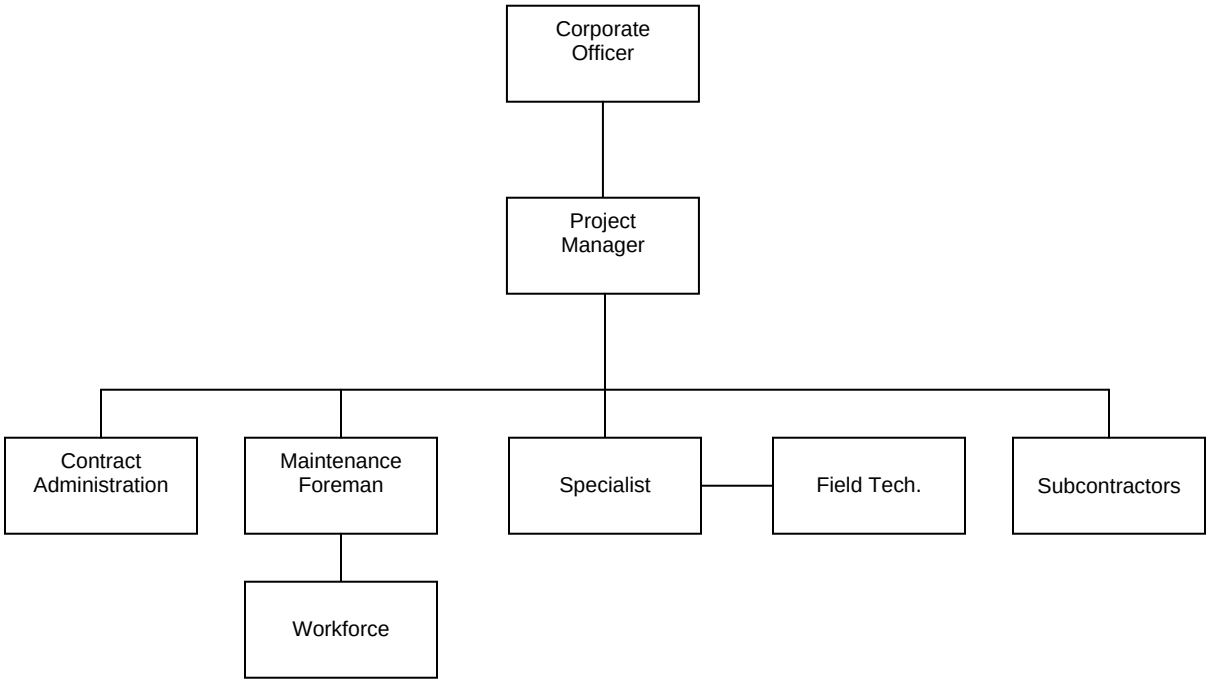
The Contractor shall produce an organization chart to document the chain of command and to demonstrate compliance with the requirements defined by the contract, including reporting relationships of field personnel.

At the Pre-Construction meeting the Contractor shall submit, for review by the Engineer, the organization chart, naming the Project Manager, Dedicated Specialist or Specialist and Dedicated Field Technician, Maintenance Foreman and all electricians. Both emergency and non-emergency phone numbers, resumes and photo identification shall be supplied, sufficient to demonstrate compliance with contract requirements.

The Engineer retains the right to reject the Contractor's structure for management of the contract if the specific requirements defined herein are not addressed or if the proposed structure or staffing is such that the effective execution of contract performance is compromised. The Engineer may also reject the assignment of specific personnel to certain functions if the Contractor fails to demonstrate the qualifications matching personnel to defined responsibilities.

The submittal shall clearly define areas of responsibility and, in the case of supervisory personnel, the level of authority vested in each position. The Contractor may propose adjustments in the assignment of responsibilities as outlined herein, but staffing levels and overall accountabilities shall remain intact.

A typical Contractor's organizational structure is illustrated below:




### 4.7.3 CORPORATE OFFICER

The name and title of the ASMC Project Manager's direct supervisor shall be provided. If at any time the Engineer determines that a Project Manager has insufficient authority and flexibility to effectively manage the work under this Contract, the Engineer retains the right to demand a Corporate Officer be in charge of the Contract, with the appropriate attendance at Pay Meetings, status meetings, etc.

### 4.7.4 ASMC PROJECT MANAGER

The Contractor shall appoint one person a ASMC Project Manager who shall have full daily responsibility for all maintenance and modification work of the ASMC Project under this contract.

This individual shall have a minimum of five (5) years of management experience in electrical construction and maintenance, and have an acceptable knowledge of the operations of the

systems covered by this Contract, and the integration of multi-technology subsystems. The Project Manager shall have the full authority to speak definitively for the Corporate Officer relative to this Contract. This individual must meet the approval of the Engineer.

The ASMC Project Manager shall review all Tickets daily and correct, if necessary, to assure correct repair terminology, status of repair work, etc., prior to the Contractor Administrator sending the Ticket Summary Report to Department personnel. This individual shall be responsible for the scheduling of all ASMC work. Refer to Article 6.0 for Ticket and Daily Agenda requirements.

### 4.7.5 ASMC SPECIALIST

The Contractor shall appoint an ASMC Specialist who shall have a minimum of five (5) years experience in basic electronics and electronic components, such as relays, switches, etc. This individual shall be certified to trouble-shoot Allen Bradley programmable logic controllers, PLC 5, and RS Logics 5000 controllers. A minimum two (2) years work experience with CCTV systems and fiber optic transceivers is also required. Electrical construction and maintenance experience would also be desirable. This individual must meet the approval of the Engineer. This individual may also serve as the ASMC Project Manager, with Engineer approval. The Contractor shall designate the Systems Specialist as dedicated to Contract work or shall have the Field Technician (who would report to the Systems Specialist) as an employee dedicated to ASMC work.

### 4.7.6 ASMC FIELD TECHNICIAN

The Contractor shall appoint an ASMC Field Technician who shall have a minimum of five (5) years work experience in electrical construction and maintenance, ability to operate a bucket truck to access cameras, ability to operate a variety of test equipment for installing, servicing and testing electronic equipment, knowledge and ability to calibrate equipment to meet manufacturer and/or IDOT specifications, perform shop and field tests, and have advanced computer skills to troubleshoot network devices. This individual must meet the approval of the Engineer.

### 4.7.7 ASMC MAINTENANCE FOREMAN

The Contractor shall appoint an ASMC Maintenance Foreman who shall have a minimum of ten (10) years work experience in electrical construction and maintenance, and a minimum of five (5) years supervisory experience. This individual must meet the approval of the Engineer. This individual may also serve as the ASMC Project Manager, with Engineer approval.

The Maintenance Foreman shall supervise the Contractor-employed core of electricians, and any maintenance or material sub-contractors responsible for maintenance and modifications on the ASMC systems.

### 4.7.8 GENERAL WORKFORCE

The Contractor shall employ sufficient trained personnel to perform all routine and non-routine maintenance and construction work concurrently, including inspections, equipment malfunction trouble-shooting, follow-up repairs, testing, and modification/replacement work. Skilled personnel shall be available 24/7 for immediate corrective response.

The Contractor's workforce shall possess the skills and knowledge necessary to perform all work in the proper manner. The workforce shall include personnel having certain special expertise, including, but not limited to the following:

- Materials Management
- General Electrical Power
- Building Wiring (Indoor Electrician)
- Motor Controls and Control Systems
- Various Types of Mechanical Work, particularly related to the gates and barriers
- Low Voltage Power Distribution Systems
- Roadway Electrical (Outdoor Lineman)
- Telemetry/Telecommunications
- Fiber Optic Cable Installation and Repairs
- Hardware/Software Trouble-Shooting
- Changeable Message Sign Technology
- PLC Repairs, Maintenance and Operation (Allen Bradley PLC systems)
- Ladder logic circuit troubleshooting
- Programmable logic controllers
- Communication equipment
- Office Administration
- Microwave Radio
- CCTV Systems

### 4.7.9 ASMC ADMINISTRATIVE SUPERVISOR

The Contractor shall appoint an ASMC Administrative Supervisor, who shall oversee all administrative functions of the Contract, including sending the daily work agenda, assembling the monthly routine maintenance work documentation book, providing EMCMS work quotes and invoices, preparing MCHD repair statements, and providing timely payment documentation for specialty vendors. This individual should have a minimum of five (5) years experience with Windows and Excel spreadsheet software. This individual may also function as the Dispatch Center Supervisor.

### 4.7.10 ASMC DISPATCH PERSONNEL

The Contractor shall provide trained, courteous dispatchers, with the ability to speak in English, clearly and distinctly, to staff the 24-hour/seven days per week operations of the ASMC Dispatch Center. The dispatch personnel shall be trained on the EMCMS and shall be made familiar with the ASMC locations. Soon after the start of the Contract, prior to May 1, 2008, (or at the applicable employee's hire date), the Contractor, with the Department's assistance, shall conduct a field tour of ASMC equipment for dispatch personnel. Training shall include watching a gate transition from the field observation area and a tour of the IDOT ComCenter.

Dispatch personnel respond to calls from Contractor personnel, Department and ComCenter personnel, and various police and municipal agencies. Duties, other than normal dispatching, include real-time ticket entry, morning distribution of ticket summary reports, documentation of MCHD repairs, creation of MCHD statements, 3rd party damage reports, and other work as assigned. Since the success of ASMC operations hinges on the dispatcher performance, the Engineer reserves the right to periodically review the dispatcher performance for approval.

## 4.8 VEHICLE REQUIREMENTS

### 4.8.1 GENERAL REQUIREMENTS

The Contractor shall provide at all times sufficient vehicles and construction equipment to perform the routine and non-routine work and specialized operations required and described herein. The Contractor is expected to be familiar with the extent of systems to be maintained under this

contract and the equipment necessary to provide the specified work response. Failure to have adequate equipment to perform the work shall not be sufficient grounds for the delay of routine or other authorized work.

The Contractor's equipment shall be in good working condition suitable for providing timely response on systems' maintenance. All vehicles used by the Contractor shall conform to all applicable laws and the Department safety Code and shall carry such lights and safety appurtenances as may be prescribed by the Department.

### 4.8.2 CONTRACTOR VEHICLES

The Contractor shall either own or lease sufficient vehicles to service the ASMC systems within the specified response times. The fleet vehicles shall have no more than 60,000 certified odometer miles at the beginning of the Contract, April 1, 2008. If this Contract is renewed for a second year, the fleet vehicles shall have no more than 110,000 certified odometer miles as of April 1, 2009. Each person assigned to response activities shall have an assigned vehicle so that the response is not impeded due to lack of vehicle access. The ASMC Specialist and ASMC Maintenance Foreman and Field Technician may be assigned SUV type vehicles or other suitable means of transportation, with no more than 60,000 miles at the beginning of the Contract, April 1, 2008.

As a minimum, the Contractor shall have in his possession, at the start of the Contract, three (3) trucks with permanent mounted lifts of 30 to 70 feet, for the monthly preventive maintenance programs to service pole mounted cameras and rotating drum signs and REVLAC barriers.

### 4.8.3 EQUIPMENT VERIFICATION

Evidence of vehicle ownership or lease shall be provided to the Engineer at the Pre-Construction Meeting. Prior to the start of the contract period, the Contractor shall have all vehicles and equipment staged and available for inspection by the Engineer. The Contractor shall provide not less than five (5) calendar days advance notice to the Engineer of the desired inspection date.

### 4.8.4 IDENTIFICATION

All Contractor and Sub-Contractor service vehicles and equipment, including those items listed herein, shall be clearly identified with the Contractor's name, location, and telephone number. Each category of identification; name, location, and telephone number, shall have a decal, a minimum of 3 inches in height, readily visible on the exterior sides and rear of each vehicle. Removable magnetic signs or similar non-permanent identification is not permitted at any time.

### 4.8.5 ACCESSORIES

ASMC Vehicles for use on the highway such as pickup trucks, aerial trucks, truck cranes and special trucks shall be equipped with as minimum roof-mounted amber flashing warning lights. Automobiles for similar use shall be equipped with roof-mounted or interior amber warning flashers. Note that red flashers are not permitted under any circumstances.

### 4.8.6 SUBCONTRACTOR VEHICLES

Equipment utilized by subcontractors employed in day-to-day operations of this contract, either routine work or non-routine work, shall conform to the requirements noted herein for the general contractor and shall be available for inspection, complete with specified certifications, upon request by the Engineer.

## 4.9 VEHICLE AND TEST EQUIPMENT

### 4.9.1 VEHICLE EQUIPMENT

The Contractor shall own and maintain equipment for use on the ASMC systems by Contractor's work crews and for the Engineer's use in inspecting the Contractor's work. As a minimum each truck shall be equipped with a multi-meter, assorted tools including a socket set, SAE and metric, wire strippers, weather-proof tie wraps, and various fluids for cleaning and greasing.

### 4.9.2 SPECIAL TEST EQUIPMENT

The ASMC Specialist shall have use of a volt meter, fiber optic light meter and light source, (OTDR optional), digital micro-wave frequency counter, power meter and power head for 6 and 11 GHz and coaxial cable tester, Ideal Model #62-204 or equal. The Contractor shall provide the above equipment to IDOT when requested by the Engineer.

### 4.9.3 MAINTENANCE OF EQUIPMENT

The Contractor is expected to maintain all test equipment, in accordance with the manufacturer's specifications at all times, including certified calibration by a responsible test lab on not less than an annual basis. The equipment shall have the test lab's most recent calibration ticket attached.

## 4.10 TRAFFIC CONTROL AND SAFETY PROGRAMS

### 4.10.1 TRAFFIC CONTROL AND SAFETY

The traffic control shall be in accordance with the applicable sections of the Standard Specifications, the Supplemental Specification, the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways", any special details and Highway Standards contained in the plan, and the IDOT District 1 Traffic Control Plan for the Electrical Maintenance Contract (EMC). The Contractor shall give special attention to Articles 107 and section 700 of the Standard Specifications.

The governing factor in the execution and staging of work is to provide the motoring public with the safest possible travel conditions on the expressway through the work zone. The Contractor shall arrange his operations to keep the closing of lanes and/or ramps to a minimum.

### 4.10.2 KEEPING THE EXPRESSWAY OPEN TO TRAFFIC

Whenever work is in progress on or adjacent to an expressway, the Contractor shall provide the necessary traffic control devices to warn the public and to delineate the work zone as required in these Special Provisions, the Standard Specifications, the State Standards and the Region Freeway Lane Closure Standards and details. All Contractor's personnel shall be limited to these barricaded work zones and shall not cross the expressway.

The Contractor shall request and gain approval from the Illinois Department of Transportation's Expressway Traffic Operations Engineer (847-705-4155) twenty-four (24) hours in advance of all daily lane, partial ramp and shoulder closures and seventy-two (72) hours in advance of all permanent and weekend closures on all Freeways and/or Expressways in District 1.

Shoulder closures will not be permitted on weekdays (Monday through Friday) from 5:00 a.m. to 9:00 a.m. and from 3:00 p.m. to 7:00 p.m. Lane closure hours, if needed, will be determined by the IDOT Expressway Traffic Operations Engineer.

The approval for emergency closures or emergency moving operations during the normal workday shall also be requested from the Expressway Traffic Operations Engineer (847-705-4155). After office hours request for approval shall be made to the IDOT ComCenter, (847-705-4612) as soon as the need is determined, prior to the Contractor's arrival on the expressway.

All daily lane closures shall be removed during adverse weather conditions such as rain, snow, and/or fog and as determined by the Engineer.

Additional lane closure hour restrictions may have to be imposed to facilitate the flow of traffic to and from major sporting events and/or other events.

Private vehicles shall not be parked in the work zone. Contractor's equipment and/or vehicles shall not be parked on the shoulders or in the median during non-working hours. The parking of equipment and/or vehicles on State right-of-way will only be permitted at the locations approved by the Engineer.

### 4.10.3 PAYMENT FOR TRAFFIC CONTROL

Traffic Control and protection will not be paid separately but shall be considered as incidental to the work of the contract, and the cost for traffic control and protection shall be included as part of the various unit bid prices for the routine maintenance pay items. These contract unit prices for routine maintenance shall be payment in full for all labor, materials, transportation, handling and incidentals necessary to furnish, install, maintain, replace, relocate and remove all traffic control devices indicated in these specifications.

Where non-routine work requires the use of pay items which specifically allow additional payment for non-routine traffic control and protection, payment will be made in accordance with the applicable unit bid prices of the non-routine traffic control pay items included in the Contract. Otherwise, the traffic control plan costs shall be incidental to the non-routine items.

The Engineer may require additional traffic control and protection for certain authorized non-routine work requiring major lane or ramp closures for equipment modifications/construction. (Shoulder closures are excluded.) Additional payment will be made for this work in accordance with the applicable unit bid prices of the non-routine traffic control pay items included in the Contract.

### 4.10.4 DEFICIENCIES AND LIQUIDATED DAMAGES

Upon notification from the Engineer or Department Expressway/Traffic Operations personnel the Contractor shall dispatch qualified personnel immediately to make needed corrections of traffic control deficiencies that constitute an immediate safety hazard and/or the blocking of traffic lanes or ramps.

Should the Contractor fail to completely open and keep open all the traffic lanes to traffic or fail to restore the required traffic control and protection, in accordance with the limitations specified under the Special Provisions for “Keeping the Expressway Open to Traffic”, the Engineer will impose daily monetary liquidated damages for each 15 minute interval (or portion thereof) that the deficiency exists. This time period will begin with the time of notification to the Contractor and end with the Resident Engineer's acceptance of the corrections.

| | |
|---|---|
| $1000.00 | Improper Use of Traffic Control (per instance) |
| $2000.00* | Blocking Lane or Ramp to Traffic |
| $5000.00* | Blocking Two Lanes to Traffic |

*per each and every 15 minute interval or portion thereof that a lane is blocked outside the allowable time limitations

## 4.11 SAFETY PROGRAM

### 4.11.1 GENERAL REQUIREMENTS

The Contractor shall establish a formal Safety Program to assure overall safety of ASMC personnel, operations and the electrical systems maintained as they affect the safety of the motoring public and the public at large. The Contractor shall furnish an overall description of this program at the Pre-Construction Meeting.

As part of the Safety Program, the Contractor shall initiate a procedure that states: "When a circuit is de-energized, the Contractor shall meter the downstream circuits with an instrument to assure that they are de-energized and safe for working conditions." The Contractor shall be fully responsible for compliance with all OSHA requirements. Particular attention is directed to the lock-out/tag-out requirements to assure that systems undergoing maintenance work cannot be inadvertently energized, causing harm to maintenance personnel.

The Contractor shall assure that all personnel be trained in, and have knowledge of, approved equipment grounding and bonding methods for all work under this contract. The Contractor shall be fully responsible for compliance with all NEC requirements.

The Contractor shall keep all systems free of hazards to the work force and the public, all in conformance with Article 107 of the Standard Specifications. Special care shall be taken to assure that electrical systems are not left in an exposed or otherwise hazardous condition. All electrical boxes, cabinets, pole handholes, etc., which contain wiring, either energized or non-energized, shall be closed or shall have their covers in place and shall be locked when configured for locking, except when work is being done at the location at the moment. If the worksite is left, enclosures shall be closed and no potentially hazardous electrical situation shall be left unattended.

### 4.11.2 YEARLY SAFETY PRESENTATION

The Contractor shall hold a yearly safety presentation for all personnel and sub-contractor personnel working on the ASMC systems. The outline shall be approved by the Engineer.

## 5.0 MATERIAL REQUIREMENTS

## 5.1 MATERIAL SUBMITTALS FOR DEPARTMENT APPROVAL

Submittal information shall be complete and in sufficient detail to demonstrate compliance with all requirements of the contract documents. The submittals for each individual pay item shall be complete in every respect.

The Contractor shall submit a listing of all manufacturers to be used by the ASMC at the Pre-Construction Meeting. In general, due to the highly specialized nature of this system, certain equipment used on this contract must be manufactured by the original equipment manufacturer, unless written approval is given by the Engineer. Within 60 days after contract execution, the Contractor shall submit, for approval, complete, approvable manufacturer's product data (for standard products and components) and detailed shop drawings (for fabricated equipment) to the Bureau of Electrical Operations.

The Engineer may waive the requirements for shop drawings for certain original-manufactured fabricated equipment as long as original shop drawings on file remain valid for the equipment. It is the Contractor's responsibility to coordinate accordingly.

The Contractor may request, in writing, permission to make a partial submittal or to defer a particular submittal. The Engineer will evaluate the circumstances of the request and may agree to review such a partial submittal; however, no additional compensation or extension of time will be allowed for extra costs or delays incurred due to partial or late submittals.

Prior to submittal to IDOT, the Contractor shall review the submittal material and shall affix a stamp of approval to each appropriate submittal item, with comments as applicable, and signature of a responsible representative. In the case of subcontractors' submittals, both the subcontractor and the general Contractor shall review and stamp the submittal.

The receipt of submittal information from the Contractor will be construed as the Contractor's assurance that he has reviewed the submittal information and attests to the submittal's accuracy and conformance to the requirements of the contract documents. Unless otherwise indicated, manufacturer's guarantees shall be included with the submittal information.

### 5.1.1 FORMS

The Department will furnish the multi-part IDOT submittal record and transmittal form that is required with each submittal. The form shall be signed by the Contractor and any subcontractor as applicable. Submittals made without this form, or with an incomplete form, will be returned without review.

### 5.1.2 CERTIFICATION REQUIREMENTS

Where certifications are specified, the information submitted for approval shall incorporate certification information. When a certification is available prior to equipment manufacture, the certification shall be included with the submittal information. When a certification is available only after equipment manufacture, the submittal shall include a statement of intent to furnish the certification after equipment approval and manufacture. Certifications involving inspections and/or tests of equipment shall be complete with all test data, dates and times.

### 5.1.3 SAMPLES

The Engineer may request from the Contractor a sample of a specific item of a submittal for review and evaluation. The sample shall remain property of the Contractor and shall be returned after the review and evaluation with comments as applicable.

### 5.1.4 NOTIFICATION OF CHANGE OF SUPPLIER

If the Contractor changes the supplier of any materials for the contract, a new submittal for that item must be made for review and approval by the Engineer. The submittal shall be made as described elsewhere herein. Under no circumstances shall unapproved materials be utilized.

### 5.1.5 NEW MATERIALS INSPECTION REQUIREMENTS

The Contractor shall comply with the applicable requirements of Section 106 and 1000 of the Standard Specifications for Road and Bridge Construction. When underground materials are furnished, the Contractor shall notify the Department's Bureau of Materials personnel to provide proper inspection for the approval of the materials, prior to installation.

### 5.1.6 ADDITIONS TO STANDARD SPECIFICATIONS

### ARTICLE 108.05 (a) SUBMITTALS

**Exceptions, Deviations and Substitutions**

In general, exceptions to and deviations from the requirements of the Contract Documents will not be allowed. It is the Contractor's responsibility to note any deviations from Contract

requirements at the time of submittal and to make any requests for deviations in writing to the Engineer. In general, substitutions will not be acceptable. Requests for substitutions must demonstrate that the proposed substitution equal or superior to the material or equipment required by the Contract Documents. No exceptions, deviations or substitutions will be permitted without the approval of the Engineer.

**Resubmittals**
All submitted items reviewed and marked 'APPROVED AS NOTED', or 'DISAPPROVED' are to be resubmitted in their entirety to verify contract compliance unless otherwise indicated within the submittal comments.

## 5.2 USE OF APPROVED MATERIALS

The Contractor (including all supervising personnel) is expected to familiarize himself with all requirements with respect to proper materials, methods and procedures and failure to do so will not be justifiable grounds for lack of compliance with the contract requirements nor will such failure relieve the Contractor for the consequences arising from unsatisfactory service, including applicable liquidated damages

Materials or equipment installed without the prior approval of the Engineer is subject to removal at the Contractor's expense.

## 5.3 STATE STOCK INVENTORY

### 5.3.1 GENERAL REQUIREMENTS

The Contractor is responsible, under routine maintenance, for the storage and inventory reporting of the Department's stock of parts, materials, and equipment. This will be hereafter referred to as State Stock Inventory.

The Contractor shall use State Stock (new or used parts) only when directed and approved by the Engineer. The Contractor may not use any State Stock inventory for any work outside the scope of this contract. Note the State Stock inventory is not sufficient to supply the Contractor with all materials necessary to carry out Contract provisions.

If the Engineer allows the Contractor to use State Stock parts and equipment which should be furnished by the Contractor through routine maintenance, the Contractor shall then replace the items used, and the costs and freight shall be incidental to routine maintenance. The Contractor shall provide invoices for all materials purchased to replace items taken from the State Stock inventory and the invoice shall show the entire cost of each item including separate freight charges.

The Contractor shall comply with the instructions given by the Engineer relating to the care, storage, and marking of State Stock inventory for identification purposes. All State Stock inventory is to be clearly identified and kept in a defined, separate area from the Contractors owned stock of materials, parts, and equipment. All storage areas shall be secure with screened, locked access. The Contractor shall provide sufficient storage boxes, cases, lockers, and shelving, incidental to routine maintenance, to house the different types of materials and equipment. In addition, the Engineer may require inside, locked, protected storage of specified equipment. The area designated for State Stock inventory shall be approved by the Engineer, prior to the receipt and placement of materials and/or equipment into storage. The Engineer may inspect the Contractor's designated sites or the official State Stock warehouse at any time.

The Contractor shall provide insurance coverage for all State Stock inventory in his possession, for losses due to fire, theft or vandalism.

At the Pre-Bid Meeting, the Department shall furnish all bidders with a list of equipment currently in State Stock.

### 5.3.2 STATE STOCK WAREHOUSE

To facilitate security, inventory control, physical separation of state materials from contractor materials, and to allow the potential for reduced costs of material transfer when there is a change of Contractor, certain select state materials may be kept at a commercial bonded warehouse provided for under a separate contract. Only materials in good working order and/or condition are placed in the State Stock warehouse; Combined Warehouse Co., 5000 South Central, Chicago, Illinois.

During the duration of this contract the location of the storage facility may change. If it is moved, the new location will be within the boundaries of Devon Avenue on the north, 87th Street on the south, Lake Shore Drive on the east, and the Tri-State Tollway on the west. All costs associated with a storage facility location change will NOT be the responsibility of this contract. The Contractor shall coordinate State Stock transfers with the current state Electrical Maintenance Contractor representative, as directed by the Engineer.

### 5.3.3 DISBURSEMENT FROM STATE STOCK WAREHOUSE

If the Contractor wishes to use State Stock from the warehouse facility, he shall complete and fax the 'Warehouse State Stock Disbursement Request' to the Engineer, noting whether the equipment to be removed is for a routine or non-routine work project or motorist caused damages. Upon receiving an approved Warehouse State Stock Disbursement Request from the Engineer, the Contractor may then set an appointment with the state's electrical maintenance contractor to withdraw the materials or equipment. The Contractor shall not withdraw any State stock, until approved in writing by the Engineer. The Contractor is responsible for timely, safe transportation and handling of stock received from the State Stock warehouse. Copies of all warehouse disbursement requests for the month shall be included in the monthly documentation book. A copy of the Warehouse State Stock Disbursement Request will be available at the Pre-Construction meeting.

### 5.3.4 DISBURSEMENT FROM CONTRACTOR OWNED OR LEASED FACILITIES

The Contractor shall keep an accurate accounting of all his disbursements, on a monthly basis, of State Stock used from Contractor owned facilities. Copies of all Contractor Disbursement Records shall be submitted in the monthly documentation book.

### 5.3.5 RECEIPT REPORTING

All parts, materials and equipment furnished to the Contractor for State Stock shall be transported by the Contractor at his expense, to the State Stock warehouse, shops, or sites, where such materials and equipment are to be stored, repaired, or used. The Engineer may also require the Contractor to deliver State Stock materials to State owned property in District 1, rather than to his own storage sites, or to transport items removed from a location to other state owned property within District 1, and all such transport shall be made in a timely manner at no additional cost to the contract.

Removed equipment deemed salvageable by the Engineer shall be stored in the Contractor's warehouse or yard and designated as State Stock, property of the State of Illinois, or shall be sent to the State Stock Warehouse, if approved by the Engineer. These parts, materials, and

other equipment shall be noted on a Contractor ASMC Receipt when placed in State Stock storage. The Contractor shall keep an accounting of all Contractor Receipts, on a monthly basis, and they shall be submitted in the monthly documentation book.

### 5.3.6 MATERIAL PURCHASES BY THE CONTRACTOR FOR STATE STOCK

The Engineer may direct the Contractor to procure materials for the Department State Stock inventory. Where the Contractor performs the service to obtain price quotation and assure the contract compliance of the materials, the Contractor will be eligible for the 15% material mark-up as described in Article 109.04 of the Standard Specifications.

### 5.3.7 INVENTORY DOCUMENTATION AND REPORTING

The Contractor shall maintain an Excel spreadsheet, a perpetual inventory of parts and equipment used in the maintenance of the system furnished him by the Department. This report shall be submitted in the monthly work documentation book. The report format will be given to all prospective bidders at the Pre-Bid Meeting, however, it will summarize material reservations, receipts, and disbursements and shall include information as to size, type, manufacturer, location (including all materials at the warehouse facility, shop facilities, etc.) and state of repair of all parts and equipment, as well as a record of where the prior months' stock was utilized, by staging area and/or Contract number. This report shall include copies of routine and non-routine work receipts and disbursements.

Each monthly inventory report prepared by the Contractor shall be signed by the person directly accountable for the accuracy of same and Project Manager with a statement attesting to the accuracy of the report and proper use of the inventory and submitted to the Engineer. The Contractor is required to retain all inventory records for a period of 5-years following the completion of the Contract. The Contractor’s ASMC inventory shall be reconciled with the warehouse storage report by a Department inspector. If any discrepancies are found the Contractor shall immediately research the problem to reconcile all documentation.

### 5.3.8 DISPOSAL OF SCRAP

The Engineer will make the sole determination as to whether material (equipment) is re-usable. Except as otherwise indicated herein, all removed items shall remain property of the State. The Contractor may not dispose (scrap) any materials without receiving prior approval from the Engineer in writing. For approval of items to be scrapped, the Contractor shall complete a State Scrap Transfer form and send it to the Engineer for approval. The state scrap transfer log must state the item name/model/type, condition, and location where item was located. If after inspection the materials are determined to be scrap, the Engineer will sign the state scrap transfer log, and convey ownership of the scrap materials to the Contractor. Only upon receiving the transfer of ownership, the Contractor shall be responsible, at his expense, for the proper, legal disposal of all scrap items; materials, parts, equipment, etc. The estimated salvage value of scrap materials shall be reflected in the bid unit prices for routine maintenance items. The Contractor shall keep an accounting of all State Scrap Transfers, on a monthly basis, and shall submit them in the monthly work documentation book.

All lamps removed as part of re-lamping operations, outage repairs or other authorized work shall become property of the Contractor and shall be disposed of in full compliance with Environmental Protection Agency (EPA) regulations. The EPA Rule 40 CFR, part 273, finalized in May 1995 established a guideline for the recycling of lamps and the mercury from scrapped lamps. Fluorescent, high-intensity, low pressure sodium, and other lamps bearing mercury may be classified as a potential hazardous waste. The Contractor shall recycle removed lamps to the maximum extent possible and shall submit to the Engineer, for approval, the name and

background of a qualified lamp recycling specialty service which shall be used for lamp recycling under this Contract. Over the course of the Contract, the Contractor shall provide documentation of all lamp recycling activity to the satisfaction of the Engineer.

### 5.3.9 END OF YEAR STATE STOCK INSPECTION

At the end of the one-year term for response coverage, a physical accounting of all ASMC State Stock material shall be made via inspection with a Contractor's representative and the Engineer, with sign off of final quantities by both parties. The Contractor shall be responsible for all materials in his charge and shall provide replacement of any missing or damaged State Stock items.

### 5.3.10 TRANSFER OF STATE STOCK

Upon the request of the Engineer, in March 2010 (or March 2009 if this contract is not renewed) the Contractor shall provide, under routine maintenance, a list of all State Stock, (with details of quantities, model number, capacity, size, etc.) and make arrangements for its transport and safe delivery to a contractor or locations designated by the Engineer.

## 5.4 CONTRACTOR OWNED SPARE PARTS INVENTORY

The Contractor shall be responsible, under routine maintenance, for providing spare equipment to meet specified maintenance requirements as stated herein. Unless approved in writing by the Engineer, all Contractor storage facilities for the spare parts inventory shall be indoor heated areas. The Contractor shall submit a list of his current inventory on April 1, 2008.

Per the Engineer's directive and/or following an inventory related failure to meet the routine maintenance performance requirements of the Contract, the Engineer may direct the Contractor to maintain a minimum quantity of specific items on hand. The additional cost of maintaining the required inventory shall be borne solely by the Contractor.

A shortage of parts or equipment causing delays in the implementation of replacements or repairs shall be sufficient cause to assess liquidated damages. The Contractor shall submit anticipated schedules(s) for ordered replacement items when requested by the Engineer. The Contractor's spare parts inventory may be inspected by the Engineer at any time as deemed necessary.

# 6.0 ROUTINE MAINTENANCE WORK

## 6.1 SCOPE OF WORK

The routine maintenance locations are found in Article 3.0 and the work requirements are discussed herein Article 6.0. This work shall be paid at the contract unit bid price per month for:

**ROUTINE MAINTENANCE OF REVERSIBLE LANE ACCESS CONTROL SYSTEM (A-1)**
**ROUTINE MAINTENANCE OF ROOSEVELT RAMP ACCESS CONTROL SYSTEM (A-2)**
**ROUTINE MAINTENANCE OF CLOSED CIRCUIT TV SYSTEMS (A-3)**
**ROUTINE MAINTENANCE OF DISTRICT OPERATIONS NETWORK (A-4)**
**ROUTINE MAINTENANCE OF AUTOMATIC VEHICLE LOCATOR SYSTEM/ETOS (A-5)**
**ROUTINE MAINTENANCE OF OTHER SYSTEMS (A-6)**

which price shall be payment in full for the work as specified herein and as directed by the Engineer.

### 6.1.1 GENERAL REQUIREMENTS

The Contractor is automatically authorized and required to perform routine maintenance work for all ASMC systems. Unless certain work is specifically described herein to be non-routine work, or

as notified in writing by the Engineer to be non-routine work, all work required by the Contract, including immediate response, scheduled and preventive work, all maintenance activities, equipment repairs, removals, re-installs and/or replacements, and all associated work to keep the ASMC system equipment operating at peak performance, shall be incidental to the requirements of routine maintenance, and the costs of such work shall be included in the routine maintenance pay items. (Contractor shall review additional specifications in Articles 6.1.8 and 6.1.9 herein.) In addition, all work documentation as required herein, or at the request of the Engineer, shall be incidental to routine maintenance. General requirements of routine maintenance are included in, but not limited to, this article, and shall be valid across the various defined systems, as applicable.

The Contractor is responsible to perform maintenance under this Contract which prevents operational problems, minimizes trouble calls, safeguards electrical safety and promotes operational safety and which prolongs the operations life of installed systems. Some of these maintenance activities will be initiated by the Engineer, some will be jointly developed between the Contractor and the Engineer, and some are expected routine maintenance obligations of the Contractor.

Scheduled maintenance completion dates as specified or agreed shall be met. Repair work as performed on system equipment shall meet all electrical codes and IDOT requirements. The Contractor is obligated to document to the Engineer that the various items of equipment at all locations perform properly, as originally installed or subsequently modified.

Malfunctioning equipment shall be repaired or replaced as part of routine maintenance unless stated otherwise herein. When materials or equipment are to be provided through routine maintenance, the Contractor is required keep sufficient quantities on hand for immediate replacement. The Contractor shall, however, submit a Contractor Advisory, per Article 6.6.6, for items which due to age have become prone to imminent failure and/or are a safety risk, and may receive non-routine payment for the material portion of the repair.

All equipment shall be maintained in accordance with manufacturer specifications and recommendations. Routine maintenance equipment service schedules and work shall be executed in accordance with equipment operations and maintenance (O & M) manuals unless otherwise stated herein.

Failure to perform proper response, meet routine maintenance requirements, or submit required documentation shall all be viewed as unsatisfactory service and shall be grounds for assessing liquidated damages and/or withholding of the monthly routine maintenance payment as prescribed herein.

Damaged equipment parts and materials shall be replaced with new equipment, previously approved by the Engineer, in equal quantities, which shall be identical to the original elements except as otherwise specified herein, or permitted by the Engineer. Materials used shall be suitable for the intended use.

If a permanent repair delay is due to parts on order, the Contractor shall furnish the corresponding material requisition and purchase order documentation for those parts or components of the system required to complete the repair. Parts on order shall be noted as a controlling item on the open EMCMS Ticket.

The Contractor shall, as specified herein:

1. Provide labor and materials, equipment, communications, and facilities to maintain the systems

2. Provide continuous maintenance and repair service, including Saturdays, Sundays, and Holidays to correct any malfunction of equipment, to affect any temporary emergency repairs to missing, stolen, defective, damaged, or displaced equipment resulting from any cause whatsoever to minimize the duration of, and negative impact upon, traffic and IDOT operations

3. Clean, repair, perform preventive maintenance, overhaul specified equipment at stated intervals of time, and perform work to modify the system as directed by the Engineer

4. Provide the necessary transportation for workers

5. Patrol and inspect the respective systems and perform all activities required herein

6. Provide supervisory monitoring and administration to assure compliance with contract requirements and provide timely and accurate documentation

**Quality Control**

The Contractor shall establish a program to initiate and conduct quality control preventive maintenance inspections (PM programs) to guard against and prevent equipment failures due to mechanical or electrical defects and to assure that the requirements of this Contract are known and implemented by the Contractor's workforce. The quality control inspections/PM programs established by the Contractor shall be in addition to the PM programs already specified herein, but may be conducted in addition to regularly scheduled patrol inspections and/or scheduled work. Every month, the Contractor shall submit the next month's quality control/PM program schedule in the monthly routine maintenance work documentation book.

**Restoration of Site**

The Contractor shall also be responsible for the restoration of the affected work area, under routine maintenance, for any and all work activities. Within 24 hours following the completion of work, the Contractor shall remove all debris, and restore the site to its former or better condition. Work sites shall always be left in a safe condition. If it is not possible to continue permanent restoration work due to circumstances beyond his control, the Contractor shall immediately notify the Engineer for review and approval.

**System Specific Routine Maintenance**

- **REVLAC System (A-1) and RACS (A-2)**

  The Contractor shall keep the REVLAC system and RACS operational on a 24/7 basis in automatic mode, or manual mode (when repairs are required). Response shall be per Articles 6.2.2 and 6.2.3 herein. For critical equipment, a one hour response (24/7) to notifications of problems from the ComCenter personnel and the performance of immediate equipment repairs is required. Routine maintenance also includes the response and troubleshooting of malfunctions of operations cameras for REVLAC and RACS, and the installation required for any new equipment as necessary, from State Stock.

  All labor, miscellaneous parts under $500, items listed in Article 6.1.6 herein, and the response to clear the site for safety, for damage or malfunctions of REVLAC and RACS equipment are paid through routine maintenance bid items. The gates are furnished through State Stock.

  If necessary to keep the systems operational, the Contractor shall provide personnel, equipment and materials to assist IDOT personnel in the operation of the system such as manually cranking signs into position, manually cranking swing gates, manning a control building if bypassing the PLC control, manually covering prescribed malfunctioning signs,

placing barrels or barricades for failed closure devices, staging contractor owned vehicles in place of the barrier net and all such similar work as needed to produce essentially normal functionality of the ASMC systems to the Department and the motoring public.

If a failure to provide a response, a delayed response, or a delayed temporary repair results in the delayed traffic change of the reversibles (REVLAC), the Contractor shall be assessed liquidated damages as specified in Failure to Open Traffic Lanes to Traffic as contained elsewhere herein.

**Daytime Patrol:**
The Contractor shall conduct, at minimum, one daytime patrol inspection of the REVLAC and RACS system locations (all equipment, process cameras, monitors, fiber optics, and buildings) per month, on the same week of the month for the duration of the Contract. Specific Items to be checked include, but are not limited to, the following:

- Allen Bradley PLC processors and all input and output cards; check for alarms
- Building rodent infiltration; seal any openings found
- Building site maintenance; empty trash cans
- Building HVAC operations and temperature control
- Camera focus and image
- Electrical service
- Check operation of generator
- Check generator diesel fuel level. If fuel level is less than one half of full level, a ticket shall be created to schedule the refill of the tank
- Check generator air filter, change if necessary
- Indicator lamps; replace as required
- Modem communications
- Phone lines

**Monthly Night-time Patrol:**
On approximately the same day per month, for each month of the Contract, during the daytime reversible change (approximately 11:30 a.m.) and for the night-time reversible change (approximately 11:30 p.m.), a Contractor representative shall follow an IDOT ETP (Emergency Traffic Patrol) foreman through the complete operation at each REVLAC location in both for inbound and outbound directions, to check equipment for proper operations.

Any deficiencies found on daytime or nighttime patrols, even those repaired at the time of the inspections, shall be relayed to the Contractor dispatch center, and a ticket created. Repairs shall be conducted as required, per immediate correction action (Article 6.2.2) or normal corrective action (Articles 6.2.3).

- **Message Sign Monitoring**
  Under the first year of Routine Maintenance, the contractor shall implement the addition of CCTV images of changeable message signs into the viewed sequence and the recorded record of ramp transitions. In accomplishing this, although it is most desirable to have individual camera views and steps throughout the sequence, however, in order to minimize or eliminate system programming changes it will be permissible to develop a scheme that combines up to three of the signs closest to the ramp entry (one ramp has 4 signs) in a quad view with one of the existing camera views (probably the end inside gates), as long as the final viewed and recorded image is a full view. Some re-positioning of existing cameras may be necessary to provide full-size inclusion of gates that are included in the quad view. The revisions shall be developed with and approved

by the Engineer prior to implementation, and the revisions shall have an appropriate testing plan. Cameras, their supports and connection to the respective control buildings will be performed under non-routine work authorizations. All other work to accommodate the revision shall be considered routine maintenance.

- **CCTV System (A-3)**
  Routine work of the system includes field response to trouble calls, the investigation of the failures of cameras, monitors, encoders, switches, transceivers, or other CCTV system equipment, and replacement of the failed equipment with new equipment from State Stock. Removals and reinstallations or Engineer directed alternate equipment reinstallations are incidental to routine maintenance. In some cases failed equipment under warranty will need to be shipped back to the manufacturer. It is emphasized that the ComCenter and the Department's personnel increasingly rely on the CCTV system for incident and traffic management and for real-time reporting of traffic conditions on the GCM website. The Contractor must meet the requirements of Normal Corrective Action (Article 6.2.3), unless approved otherwise in writing by the Engineer. Lack of personnel or lack of equipment shall not be grounds for request for extensions.

  The Contractor shall verify that all cameras are labeled correctly, per system numbers as furnished by the Engineer. The Contractor shall furnish and install decals where missing, or for new installs, similar to those for lighting units as specified in Article 1069.06 of the Standard Specifications.

  The domes of the cameras, mounted 25' or lower, shall be cleaned periodically, and when the images are not clear, or when requested by the ComCenter or ETP staff, under normal corrective action.

  The Contractor shall check the GCM website daily and troubleshoot any problems found.

- **District Operations Network (A-4)**
  The Contractor shall keep the Sonet system and other distribution systems, (at the District 1 Headquarters Schaumburg, REVLAC Building E and the Gig-E equipment to be added under construction contracts) operational. Repairs, as necessary, shall be conducted per response requirements of Articles 6.2.2 and 6.2.3 herein.

- **Automatic Vehicle Location (AVL) (A-5)**
  The Contractor shall respond to trouble calls regarding the AVL equipment from the IDOT ComCenter and Department personnel, per Article 6.2.3. This may require travel to the vehicle in question for the equipment repair, or travel to the ComCenter for supervisory control repairs. The Contractor shall contact the IDOT ETP Manager to obtain time which the vehicle would be available for repair. Materials for AVL repairs shall be available in State Stock.

- **Emergency Transportation Operation System (ETOS) (A-5:**
  The Emergency Transportation Operation System (ETOS) is a system which will be accepted by IDOT at some time in the duration of the Contract. The ETOS operates via the AVL system, and uses outputs of the AVL system to exchange data with the GCM system (which is maintained separately). Maintenance requirements under this Contract encompass isolation of problems to the AVL or GCM systems, with corrective action to be forwarded to the proper maintainer/contractor.

- **Other Systems (A-6)**

  Expressway Ramp Gates:
  The Contractor shall keep the Expressway Ramp Gates operating as designed, and repairs, as necessary, shall be conducted per response requirements of Articles 6.2.2 and 6.2.3 herein.

  All labor, miscellaneous parts under $500, items listed in Article 6.1.7 herein, and the response to clear the site for safety, for damage or malfunctions of ramp gate equipment are paid through routine maintenance bid items. The gates are furnished through State Stock.

  Within the first three months of the Contract, the Contractor shall furnish and install vertical ramp gate decals similar to lighting units specified in Article 1069.06 of the Standard Specifications.

  In order to assist the Contractor personnel in the proper response, the Contractor shall develop an inventory spreadsheet report for the EMCMS, with the following minimum information, per ramp gate, for each expressway:
  - Ramp expressway location
  - Ramp identification number
  - Ramp specifications
  - Lock and key number
  - Detailed explanation of any unique configurations, of this location or equipment

  GCM Gateway Network:
  The Contractor is required maintain the GCM Gateway Network, its electrical power, and its connections to the fiber backbone. Response requirements shall be met per Article 6.2.3 herein. The Contractor is required to maintain the various gig-E switches as listed herein. The Contractor may be required to check equipment, 24/7, at the UIC location.

  The ASMC Dispatch Center personnel will check the GCM Gateway Network website hourly, in a prescribed method (form furnished at Pre-bid meeting), during hours of 8:00pm through 7:00am and report any apparent site outage to the District 1 ComCenter. (The ComCenter will handle IDOT notifications of the reported outages and communicate this information to the Gateway contracting team.) If the Gateway contracting team, not ASMC Contractor, is unable to resolve the outage remotely, they will notify the IDOT ComCenter so that the Contractor may be dispatched to the Traffic Systems Center to assess the Gateway system status.)

  As directed by the ComCenter, the Contractor shall create a ticket and immediately respond to the Traffic Systems Center to assess the Gateway System status in accordance with a checklist established with IDOT and the Gateway maintainer (University of Illinois, Chicago) which entails on-site analysis, troubleshooting, and a reset of power circuits to Gateway equipment. When so prescribed by the checklist, the Contractor will perform a re-boot of the system or shall initiate the posting of a pre-prepared outage message to the website and will report same on the ticket and notify the ComCenter. (The Gateway contracting team, not the ASMC Contractor, will be responsible for communicating with the ComCenter to keep abreast of current progress with the attempted corrective action.) Any additional work applied to the Gateway System will be performed via Non-Routine work authorizations.

CCTV Connectivity:
If/when CCTV connectivity is made to the IDOT Central Office and State Emergency Operations Center (SEOC), the Contractor shall maintain through routine maintenance.

### 6.1.2 NIGHT-TIME LIGHTING INSPECTION

The Contractor shall provide for a night-time patrol inspection of the lighting of the ASMC systems once per month, to be scheduled the same week of each month. It is expected that only one (1) or two (2) nights of driving per month will be required.

Lighting at the following locations and other facilities with lighted ASMC equipment as transferred to state maintenance:

- RACS Buildings at Hillside and Roosevelt ramp
- REVLAC Auxiliary signs
- REVLAC Buildings A, C, D and E
- REVLAC Chevron signs
- Tower obstruction lights (red) at Schaumburg HQ, Foster on Edens, and Nordic on I-290
- Video and Communication Huts at Schaumburg HQ; Foster on Edens; Nordic at I-290; Parnell on I-57, I-57 @ I-80, and Hillside Hub on Roosevelt Road.

Any operational deficiency and/or outages shall be immediately relayed to the Contractor dispatch center to create a ticket. The Engineer also shall be immediately notified of any tower obstruction (red) light outages. Normal outage repairs shall be completed within 48 hours.

### 6.1.3 SPECIALTY SERVICES

**Software Maintenance Support**

For the duration of this Contract, the Contractor shall secure a commitment for software maintenance support specialty services with the original software developer, Engineered Software Products of Lawrenceville, GA (or an approved alternate) for the ASMC systems for emergency trouble shooting expertise and for the modification of the existing system as may be necessary.

The principal for Engineered Software Products is Mr. D. Grib Murphy, 770-682-8259. A letter of intent to provide these services is required from Engineered Software Products (or an approved alternate) to comply with Article 2.7, Item 10, of the Bidder's Special Qualifications. These services shall be incidental to routine maintenance.

The following chart indicates software which shall be maintained and licenses renewed under this Contract , as incidental to routine maintenance.

| Rockwell Part Number | Serial Number | Software Description | Version | Expiration Date | IDOT Use |
|---|---|---|---|---|---|
| 9357DNETL3D | 1235020855 | RSNetworx for DeviceNet | 4.01.00 | 31-Mar-08 | RACS |
| 9357DNETL3D | 1235020856 | RSNetworx for DeviceNet | 4.01.00 | 31-Mar-08 | RACS |
| 9357DNETL3D | 1235020866 | RSNetworx for DeviceNet | 4.01.00 | 31-Mar-08 | RACS |
| 9357DNETL3D | 1235020854 | RSNetworx for DeviceNet | 4.01.00 | 31-Mar-08 | RACS |
| 9357CNETL3D | 1163019247 | RSNetworx for ControlNet | 4.01.00 | 31-Mar-08 | RACS |
| 9357CNETL3D | 1163019248 | RSNetworx for ControlNet | 4.01.00 | 31-Mar-08 | RACS |
| 9357CNETL3D | 1163019258 | RSNetworx for ControlNet | 4.01.00 | 31-Mar-08 | RACS |
| 9357CNETL3D | 1163019246 | RSNetworx for ControlNet | 4.01.00 | 31-Mar-08 | RACS |
| 9324RLD300ENED | 1203023898 | ControlLogix & RSLOGIX 5000 | 11.11.00 | 31-Mar-08 | RACS |
| 9324RLD300ENED | 1203023899 | ControlLogix & RSLOGIX 5000 | 11.11.00 | 31-Mar-08 | RACS |
| 9324RLD300ENED | 1203023897 | ControlLogix & RSLOGIX 5000 | 11.11.00 | 31-Mar-08 | RACS |
| 9324RLD300ENED | 1203023909 | ControlLogix & RSLOGIX 5000 | 11.11.00 | 31-Mar-08 | RACS |
| 9324RLD300ENED | 1203023859 | ControlLogix & RSLOGIX 5000 | 11.11.00 | 31-Mar-08 | RACS |
| 9701VWSCWAENE | 2524000143 | RSView SE Client | 2.10.00 | 31-Mar-08 | RACS |
| 9701VWSCWAENE | 2524000142 | RSView SE Client | 2.10.00 | 31-Mar-08 | RACS |
| 9701VWSCWAENE | 2524000106 | RSView SE Client | 2.10.00 | 31-Mar-08 | RACS |
| 9701VWSCWAENE | 2524000107 | RSView SE Client | 2.10.00 | 31-Mar-08 | RACS |
| 9701VWSCWAENE | 2524000108 | RSView SE Client | 2.10.00 | 31-Mar-08 | RACS |
| 9701VWSS100AENE | 2527000100 | RSView SE Server 100 Display | 2.10.00 | 31-Mar-08 | RACS |
| 9701VWSS100AENE | 2527000101 | RSView SE Server 100 Display | 2.10.00 | 31-Mar-08 | RACS |
| 9701VWSTENE | 2529000103 | RSView Studio for RSView Enterprise | 2.10.00 | 31-Mar-08 | RACS |
| 9355WABGWENS | 1006010204 | RSLinx Gateway Software | 2.40.01 | 31-Mar-08 | RACS |
| 9324RL5300ENE | 1112063372 | RSLogix 5 | 5.20.10 | 31-Mar-08 | REVLAC |
| 9324RL5300ENE | 1112063372 | RSLogix 5 upgrade Ver. 6.0 | 6 | 31-Mar-08 | RACS |
| 9357CNETL3 | 1163019246 | RSNetWorx Update | 4.11.00 | 31-Mar-08 | RACS |
| 9357CNETL3 | 1163019247 | RSNetWorx Update | 4.11.00 | 31-Mar-08 | RACS |
| 9357CNETL3 | 1163019248 | RSNetWorx Update | 4.11.00 | 31-Mar-08 | RACS |
| 9357CNETL3 | 1163019258 | RSNetWorx Update | 4.11.00 | 31-Mar-08 | RACS |
| 9701VWSCWAENE | 2524000142 | RSView SE Client 3.00.01 | 3.00.01 | 31-Mar-08 | RACS |
| 9701VWSCWAENE | 2524000143 | RSView SE Client | 3.00.01 | 31-Mar-08 | RACS |
| 9701VWSS100AENE | 2527000100 | RSView SE Server 100 display | 3.00.01 | 31-Mar-08 | RACS |
| 9701VWSS100AENE | 2527000101 | RSView SE Server 100 display | 3.00.01 | 31-Mar-08 | RACS |
| 9701VWSTENE | 2529000103 | RSV Studio for RSV Enterprise | 3.00.01 | 31-Mar-08 | RACS |
| 930125E3353 | 1476004195 | RSView32 Runtime 5k | | | REVLAC(S) |
| 9355WABENE | 1008079409 | RSLinx Professional | 2.41.00-ENE | | REVLAC(S) |
| 930125E3353 | 1476004196 | RSView32 Runtime 5k | | | REVLAC(C) |
| 9355WABENE | 1008079415 | RSLinx Professional | 2.41.00-ENE | | REVLAC(C) |
| 930125E3353 | 1476003669 | RSView32 Runtime 5k | | | REVLAC(A) |
| 9355WABENE | 1008084954 | RSLinx Professional | 2.41.00-ENE | | REVLAC(A) |
| 930125E3353 | 1476004198 | RSView32 Runtime 5k | | | REVLAC(D) |
| 9355WABENE | 1008079417 | RSLinx Professional | 2.41.00-ENE | | REVLAC(D) |
| 930125E3353 | 1476004197 | RSView32 Runtime 5k | | | REVLAC(E) |
| 9355WABENE | 1008079416 | RSLinx Professional | 2.41.00-ENE | | REVLAC(E) |

Key: S = District 1 ComCenter in Schaumburg
A = REVLAC Control Building A
C = REVLAC Control Building C
D = REVLAC Control Building D
E = REVLAC Control Building E

**Extended Warranty and Maintenance Support**

The Contractor shall obtain the extended warranty and maintenance agreements for the duration of this Contract, or as specified below, for the following equipment and software:

1. AB Rockwell Software support and updates for REVLAC and RACS systems. Contact Revere Electric or Englewood Electric Supply for annual support agreements for the above listed Rockwell software.
2. Maintenance Agreements for Uninterruptible Power Supplies PS at Hillside Hub, Nordic Tower, and at REVLAC Buildings A, C, D and E with next business day field response.
3. Software Extended Support Maintenance Agreement for CISCO Equipment (SmartNET), for SONET and GigE switches. Contact SBC, Attn: Ken Barnum, 217 527 2037, or any other Cisco authorized service vendor.
4. Maintenance Agreement for Storm Warning and Records Management System (SWARMS) with field response during business hours and 24/7 software support. Contact Time Business Systems, John Naatz, 630 827-1800, or other Time Business Systems authorized vendor.
5. Two year extended warranty for the Department's microwave equipment, Harris MegaStar, at Hillside, Nordic, D1 HQ, Building E, and equipment at the ISP/CMS facility in DesPlaines. Contact Harris Corp, Microwave Communications Division, 637 Davis Drive, Morrisville, NC, 27650, Attn.: John Kingsley, 630 762 3730, jkings01@harris.com or other Harris authorized vendor.
6. Extended Software and Hardware Support Maintenance Agreement for AVL base stations, server, and AVL Radio Modems in use in District 1. Contact IP Mobile Net, Attn: David Birarda, 604 937 5984, or any other IP Mobile Net authorized service vendor.

## 6.1.4 LOCKS AND KEYS

The Contractor shall furnish and install up to fifty locks for facilities and equipment, for security purposes, as specified by the Engineer. The padlock shall meet the specifications of the weather resistant padlock currently utilized for the District 1 pump stations, and the key number shall be approved by the Engineer prior to the purchase/install. If additional locks are required, they shall be furnished through State Stock and installed under non-routine maintenance.

The Contractor shall keep current a list of the names and cell telephone numbers of all personnel who carry keys for system equipment or facilities. Non-contract personnel are not to be given keys to IDOT system equipment or facilities.

The Engineer will coordinate the turnover of system keys from the outgoing contractor and provide the incoming Contractor with the keys to System equipment and any alarm keys so as to assure that at 12:01 A.M. on April 1, 2008, the maintenance transfer is complete and transparent to the public.

At the end of the Contract term(s), the Contractor shall make arrangements to return the keys of the facilities and equipment to the Engineer. All existing, replacement and/or new locks and keys added to the electrical systems during the Contract, shall be become the property of the Department.

## 6.1.5 SYSTEMS SITE AND FACILITIES MAINTENANCE

The Contractor shall submit a spreadsheet, noting the location, type of site maintenance, and date work was completed, in the monthly routine maintenance work documentation book.

- **Exterior Maintenance**
  The Contractor shall provide general site exterior maintenance at ASMC locations, through routine maintenance, to provide safe access to buildings and to maintain the site in an aesthetically acceptable condition to the public.

Monthly Inspections
The Contractor shall perform a monthly inspection of the exteriors of buildings and huts:

- Check roof
- Check heaters
- Check door operation
- Check duct seal or sealing bushing

Tickets shall be created for all deficiencies found. Repair work shall be paid through routine maintenance per requirements herein per Articles 6.1.1, 6.1.7, and 6.1.8.

Spring/Summer/Fall Maintenance
Grass cutting, weed control, tree/branch removal, and debris disposal work shall be performed for all sidewalks, paths, and driveways, and around the outdoor electrical and communication equipment, a minimum of twice per month in the months, April through October, and as needed for the remaining months, within fenced areas at the following locations:

- Buildings A, B, C, D, and E
- Hillside, Foster, Nordic, and Schaumburg Tower buildings
- Hillside RACS Ramp Building
- Hillside Media hut, and any future media huts as accepted for maintenance by the Department, during the Contract

Winter Maintenance
General snowfall maintenance shall begin within 48 hours following a 1 inch snowfall or more. The Contractor shall provide reasonable access to Buildings A, B, C, D, E, and the Hillside, Foster, Nordic and Schaumburg Tower Buildings, and the Hillside RACS Ramp Building, by shoveling and plowing as necessary, and salting, all sidewalks, paths, driveways and parking areas.

- **Monthly Interior Maintenance:**
  The Contractor shall provide monthly general interior site maintenance for ASMC equipment in ASMC building locations, hut locations, the ComCenter (equipment room and ASMC/EMCMS terminals and keyboards), the TSC (equipment area), and the ISP/CMS facility (IDOT/ISP equipment) in Des Plaines, through routine maintenance, to keep the equipment free of dust build up to reduce heat build up and prolong the life of the systems. Following manufacturers recommendations, compressed air or soft cloths shall be used to remove the dust build up. The work can be performed in conjunction with other patrols and inspections (and may be performed at night where feasible), but should be scheduled for the same week of the month for the duration of the Contract. The Contractor daily agenda shall note the time of the expected maintenance of each location.

  During the first six months of the Contract the current ComCenter equipment room carpet tiles shall be replaced, (approximately 610 square feet), of which 153 square feet is concrete, with proper computer flooring equal or better to Access Floor Systems, Concore (concrete core) 1500, ESD (electric static discharge), ANSI/NEMA Publication LD3-1991 requirements, light grey in color (to be approved by the Engineer), under routine maintenance, to aid in the dust reduction and equipment maintenance.

  A plan for the conversion complete with methods to address the uninterrupted operation of equipment in the equipment room shall be submitted to the Engineer for approval prior to beginning installation.

### 6.1.6 FIRE EXTINGUISHERS

During the first three months of the Contract, the Contractor shall furnish and install fire extinguishers, suitable for the size and type facility, at the locations listed in Article 6.1.5.

During April of 2009, if this Contract is renewed, the Contractor shall have all fire extinguishers checked for proper service and re-filled as necessary, through a fire inspection service as approved by the Engineer. It will be necessary for the Contractor to travel with the fire inspection service personnel to unlock facilities. The Engineer shall be provided a schedule of the yearly testing, prior to the start of the work.

### 6.1.7 CONTRACTOR FURNISHED MATERIALS, EQUIPMENT AND LABOR

The following materials and the equipment/labor necessary for the removal/install are covered under routine maintenance. These materials shall not be drawn from State Stock.

- Building lighting and lamps, inside and outside
- Cattron batteries
- Circuit breakers less than 50A
- Contactors less than 50A
- Cleaning materials and solution, power washing equipment
- Decals, including those for gate numbering, cameras, poles, aux signs, and chevrons
- Fuses and switches
- Fire extinguishers
- Gate tips and reflective tapes
- Indicator lights and lamps
- Miscellaneous items $500 or less each in value
- Mounting plates (aluminum) for number/name decals on system equipment
- Padlocks and keys
- Photo cells
- Phone modems
- Relays
- Shear pins and bushings
- Snow removal supplies, salt
- Wire terminations

### 6.1.8 DEPARTMENT FURNISHED MATERIALS

The following items shall be furnished by the Department. The labor and equipment necessary for removal, installation or re-installation is covered under routine maintenance.

- Allen Bradley cards for chassis
- Allen Bradley PLC components
- Auxiliary signs
- AVL units
- Barrier crash detector
- Barrier tape cartridges
- Cameras
- Chevron signs
- Changeable Message Sign Contactors
- Decoders and Encoders for Video
- Gate arm capstan and mounting brackets
- Gate arm heater

- Gate controller
- Gate drivetrain assembly
- Gig-E switches
- LED sign replacement
- Limit switches for changeable message signs
- Materials over $ 500.00 in value
  (as shown on Contractor provided invoice from manufacturer)
- Monitors
- Motors for Changeable Message Signs
- PLC components
- Proximity Switch
- Ramp Gates
- SONET box
- Swing Gates
- Timing delay relays
- Transmissions with Motors
- Turret Head Position Switches

Refer also to Article 7.0 Non-Routine Maintenance herein for a list of repairs and services as furnished by the Department.

## 6.2 RESPONSE MAINTENANCE DUTIES

### 6.2.1 GENERAL REQUIREMENTS

When equipment failures occur, damages disrupt the normal operation of the system, or when malfunctions or other conditions require contractor action to support timely operations and system continuity, a response activity is required.

The requirements that only authorized, contract-compliant work be billable under the contract shall not be construed to relieve the Contractor, in any way, from the performance of safe, timely and proper maintenance response activities, especially in emergency situations, as such performance shall be considered as a requirement under routine maintenance.

All damaged equipment, determined by the Contractor not to be re-usable, shall be removed from the state highway right-of-way within twenty-four (24) hours from the time of the notification of the incident.

Documentation of response times and all corrective actions is required via an EMCMS Contractor created Ticket. (Refer to Ticket documentation requirements in Article 6.8.4).

### 6.2.2 IMMEDIATE CORRECTIVE ACTION

For terms of this Contract, Immediate Correction Action is defined as dispatched contractor personnel, supplied with proper repair equipment, arriving at the relevant system location within 60 minutes of notification of the incident, to make the system safe for traffic, and/or initiate activity to restore operation of the affected system. Immediate Correction Action is required seven days per week, twenty-four hours per day.

The following incidents require Immediate Corrective Response. The Engineer retains the right to add incidents to this list.

- Damage to equipment or locations identified as “critical”, as stated herein
- Damage caused by motorists

- Damage to swing gates or other REVLAC or RACS equipment, except gate heaters
- Malfunctions which suspend or halt the normal operations of ASMC equipment
- Malfunction of REVLAC or RACS changeable message signs
- Malfunction of REVLAC or RACS operations process cameras
- Failures of fiber, telephone, & microwave
- Failures of AVL base station server(s)
- Failures of all CCTV Distribution equipment resulting in loss of multiple (3 or over) images
- Failures of DON or GCM Gateway Network
- Events which pose a threat to safe, timely operations
- Live exposed electric cables
- Intrusion alarms
- Power outages

### 6.2.3 NORMAL CORRECTIVE ACTION

Incidents not listed in Article 6.2.2 or not specified by the Engineer as requiring Immediate Corrective Response shall be handled through normal corrective action.

The following incidents, and other events requiring response maintenance, which do not require Immediate Corrective Action, require Normal Corrective Action. The Contractor shall investigate these incidents within 24 hours of notification and correct the defective operation or equipment within 48 hours of the investigation, unless approval is given by the Engineer for the repair delay.

- Non-critical alarms (except for motorist caused damage)
- Swing gate heater malfunctions
- ComCenter console malfunctions
- CCTV and camera malfunctions
- GCM travel web page cameras
- REVLAC network malfunctions (fiber, telephone & microwave)
- Cattrons
- AVL Equipment including the mobile units and modems

## 6.3 SPECIAL RESPONSE/REPAIR SITUATIONS

### 6.3.1 UNAUTHORIZED ACCESS OR TAMPERING OF IDOT PROPERTY

If the Contractor sees an unauthorized individual at a site he shall immediately radio the dispatch center to call for police assistance before confronting an individual. The dispatch center shall also notify the ComCenter when police assistance is requested.

### 6.3.2 INTRUSION OR THEFT AT FACILITIES/BUILDINGS

If an entry alarm is received, the Contractor dispatch center shall call for a police escort for the individual dispatched to the scene. If a break-in is confirmed, the Contractor shall notify the dispatch center to create a Ticket and shall forward all relevant information. The Contractor's representative shall wait for police and an IDOT representative to arrive on the scene and make thorough inspection of the facility to ascertain if anything is missing or damaged, before the Contractor files an official police theft report. The Contractor is responsible to obtain a copy of the official police report and fax a copy to the Engineer as soon as possible.

When, in judgment of the Engineer, damage or loss of system equipment is the result of extensive, specific theft activity affecting continuity of service, the Engineer may authorize non-

routine maintenance payment of all or a portion of the permanent repair work, using contract pay items wherever applicable. The potential for the permanent work authorization, however, shall in no way relieve the Contractor from the responsibility to promptly respond and perform repairs.

### 6.3.3 VANDALISM AND GRAFFITI

If the Contractor arrives on the scene of major vandalism to IDOT property, the Engineer shall be notified to determine if a police report is necessary. Photos of major damage shall be taken by the Contractor and forwarded to the Engineer within 24 hours. (Also review ticket documentation requirements herein.) All graffiti shall be properly removed from IDOT property within 48 hours of notification. Following incidents of tampering, vandalism, or theft, the Contractor shall notify the local police agency so they may more frequently monitor the area.

### 6.3.4 DAMAGE CAUSED BY DEPARTMENT PERSONNEL

The Contractor shall abide by requirements of Articles 6.1.1, and 6.2.2 or 6.2.3 herein, however, when damage to system equipment has been caused by Department personnel, in the performance of their assigned duties, any repair work necessary will be authorized under non-routine maintenance for the applicable system. The Engineer shall be immediately notified at the time of knowledge of the damage and a mutually agreed date established for a field inspection to ascertain the materials and/or parts necessary for the repair.

The Department reserves the right to furnish any or all of the materials or parts for any non-routine work, so no charge for items so furnished shall be made by the Contractor. Materials or parts furnished by the Department may be from the Department's state stock inventory or from other sources available to the Department.

### 6.3.5 CONSTRUCTION DAMAGE (3RD PARTY DAMAGE)

The Contractor shall abide by requirements of Article 6.1.1, 6.1.7, 6.1.8, and response requirements of Articles 6.2.2 or 6.2.3 herein, however, when damage to system equipment (Contractor maintained) has been caused by construction activity, the Contractor may invoice the offending third party for damage repairs, including incident clearing costs, if prior written approval has been received by the Engineer.

Examples of third parties include contractors working under contract with IDOT, contractors working on a construction project under permit issued by the Region's Traffic Permits Section or the Region's Design Utility Section, or municipal and county agency workers and their contractors. A date stamped, digital photo shall be taken at the damage scene when repair costs are estimated to be in excess of $5000.00.

A General Billing ticket (GB) shall be created at the time of the notification of damage. Review additional 3rd Party Damage Documentation requirements herein.

### 6.3.6 MOTORIST CAUSED DAMAGE

Where there is an incident of motorist caused damage reported to the ComCenter, or found by state or Contractor personnel, the Contractor shall immediately respond per routine maintenance to clear the site for safety as necessary, and perform repair work per Articles 6.1.1 and 6.2.2. Labor and equipment for performing those repairs shall be covered under routine maintenance. The materials used in such repairs, up to $500.00 in value shall also be covered under routine maintenance, and shall not be drawn from state stock. Materials which are over $500.00 in aggregate cost, shall be furnished by the Department through state stock when possible, or shall be furnished by the Contractor and paid by the Department through a non-routine maintenance authorization.

A motorist caused damage ticket (MC) shall be created at the time of the notification of damage. Review additional Motorist Caused Highway Damage Documentation requirements herein. The Contractor shall submit a monthly summary report, by ticket number, of all motorist caused damage repairs. The ticket documentation shall include:

- Contractor costs: labor, equipment, and quantity of materials (under $500.00 in value)
- Department furnished materials from state stock
- Contractor reimbursable costs: quantity of materials (items not in state stock and over $500.00 in value) and a supplier invoice showing the contractor purchase price

## 6.4 PREVENTIVE MAINTENANCE (PM) PROGRAMS

The Contractor is required to perform certain preventive maintenance (PM) work within certain regular intervals or within certain time limits. The following articles and PM forms in the Appendix provide as a basic guide for PM work, but shall not be construed as all inclusive. Preventive maintenance required by the manufacturers shall be performed in addition to these inspections. All PM work shall be in compliance with manufacturers' specifications.

Schedules for start and completion of PM program work are important for the effectiveness of the overall system reliability. Every month, the Contractor shall submit the PM program for the following month in the monthly routine maintenance work documentation book. All PM work shall be completed within 30 days after starting, unless extensions are approved by the Engineer. All completed PM forms shall be submitted in the monthly routine maintenance submittal book.

Forms for this work will be distributed at the Pre-Bid Meeting.

### 6.4.1 RESTRAINING BARRIER PM

PM shall be conducted, as needed, or at least once per year (except as noted), in April.

- Inspect all control cabinets, equipment access covers and hinged opening for proper closure (bolted or padlocked)
- Open control cabinets and clean out debris or corrosion
- Pressure wash control cabinets and reflective strips with biodegradable detergent and water
- Check for fluid leaks in the cabinet and correct, if any
- Lubricate pillow block and idler sprocket bearings with multi-purpose lithium grease, NLGI No. 2, or equivalent.
- Check oil level in the drive reducer and fill with SAE No. 20 motor oil, if necessary.
- Lubricate drive chains semiannually using an aerosol chain lubricant spray (WD-40 or similar compounds are not acceptable).
- Clean tower via gas powered pressure washer
- Check net condition and positioning and check for damage or vandalism
- Check wire condition and terminations
- Open tower cover doors and hinged openings, clean, check drive chain and sprocket alignment and wear, counterweight cable attachment and general condition and check for oil leaks
- Check tower cover weather seal for wear or damage
- Check limit switches and actuators; adjustments, clearances, and secure mounting
- Check barrier net cables conditions, for tautness/tension and proper height
- Check stabilizer foot pads (replace worn or missing pads)
- Check inside of tower and cross ramp structure for accumulation of debris, dirt, dust, corrosion, animal nests, and excess grease
- Lubricate per maintenance manual section 4-5

The restraining barrier should run smoothly, without excess vibration or noise, stop quickly at its raised or lowered positions, and, when in remote operation, ensure prescribed status and warning light indications are working.

### 6.4.2 SWING GATES PM (FOR REVLAC AND RACS)

Swing gate PM shall be performed twice a year, unless noted otherwise, in April and October. Lubrication shall be performed once per year as a minimum.

- Open control cabinet and clean out debris or corrosion
- Check for fluid leaks in the cabinets and correct, if any
- Check oil level in the drive train and top off as required by the manufacturer's requirements
- Pressure wash control cabinets, gates and gate tips with biodegradable detergent and water
- Replace gate tip if more than 20% of the tip is damaged, or when directed by the Engineer
- Check proximity limit switch alignment and bracket conditions
- Check electrical connectors and wiring condition
- Check drive and control components
- Lubricate components with lubricants as listed in maintenance manual page 6-1
- Lube flange bearings only if seal failure is noticed
- Lube chain and sprocket with high grade aerosol chain lube
- Repair or replace speed reducer if it leaks oil
- Check that panel doors are closed and padlocked
- Operate the gate automatically to check for shear pin damage
- Operate the gate using the hand crank to check for operation

The swing gates should extend and retract smoothly, without excess vibration or noise, stop quickly at extended or retracted positions, and, when in remote operation, provide prescribed status indicator and warning light indications.

During the second inspection, in October, check that all heater panels are on and heaters are working when the preset temperatures are reached.

### 6.4.3 ROTATING DRUM SIGNS PM

All rotating drum signs shall be cleaned twice a year, unless noted otherwise, in the April and October.

- Open control cabinet and clean out debris
- Check for fluid leaks in the cabinet and correct, if any
- Check oil level in the drive train and top off as required by manufacturer's specifications
- Lubricate all bearing surfaces as needed, at least once per year
- Lubricate grease fittings and oil reservoir on motors
- Oil chains
- Observe coupling operation, tighten all bolts and set screws
- Clean sign housing
- Hand clean control cabinets with biodegradable detergent and water

### 6.4.4 REVLAC AND RACS LED AND FIBEROPTIC SIGN PM

All REVLAC and RACS auxiliary signs, dynamic message signs, Chevron signs, and fiber optic signs shall be inspected at least twice a year, in April and October:

- Open access covers and clean out any accumulation of bird and insect nests, dirt and dust, or corrosion
- Clean and inspect interior and exterior sign housing
- Check and adjust voltage to LED power supply
- Pressure wash all associated control cabinets and squeegee sign face with biodegradable detergent and water
- Clean LED signs with a cloth and biodegradable detergent and water
- Relamp fiber optic sign with halogen lamps and clean housing, once per year, at the time of April inspection
- Inspect lamp housings for corrosion and damage and replace, if necessary

All fiber optic signs shall be cleaned and relamped in April of each year.

### 6.4.5 CONTROL BUILDINGS, COMMUNICATION BUILDINGS, AND SYSTEMS PM

A preventive maintenance program shall be conducted once per year, in April, for the REVLAC Buildings A, B, C, D and E, RACS Roosevelt Ramp building, all video and communication huts, IDOT Headquarters, and ISP/CMS facility in DesPlaines. The building layouts and PLC forms, where applicable, will be issued at the Pre-Bid Meeting.

**Check refrigeration:**

- Clean or replace air filter
- Inspect and clean indoor coil, drain pan, and condensation drain line
- Inspect and clean blower motor and wheel
- Check electrical connections for tightness
- Check controls for proper orientation
- Inspect refrigerant tubing connections

**Fans:**

- Inspect and tighten bolts and set screws
- Inspect belt wear and alignment
- Clean exterior surfaces
- Clean or replace filters
- Inspect and lubricate bearings if needed
- Check for proper control/line voltage and operation on supply/exhaust fan starters

**Switchboards:**

- Manually open and close breakers
- Check for torque values in secondary section of bus splices and connections
- Check for proper ammeter/voltmeter values

**Panelboards:**

- Inspect for moisture damage
- Replace any deteriorated insulation material
- Clean any accumulation of dust or dirt
- Inspect all connections for heat or other damage of loose connections
- Operate mechanical components
- Clean and dress copper electrical contacts
- Operate circuit breakers
- Replace burned out indicating lights

**Transformers:**

- Clean excessive dirt on windings & insulators

**Automatic Transfer Switches:**

- Inspect wiring and connections for tracking, overheating, and deterioration
- Tighten control circuit wiring terminals
- Check for free movement and contact continuity in manual switches
- Adjust time delay settings as necessary
- Clean or replace main, arcing, and auxiliary contacts
- Tighten lug connections and mounting insulation bolts
- Perform transfer operation
- Calibrate phase and voltage sensitive relays
- Clean and remove accumulated dust and dirt
- Check for proper operation or door closure, locking bars, and mechanism

**Batteries:**

- Check and record AC and DC voltages of each cell
- Tighten nuts/bolts
- Clean surfaces
- Check AC/DC power converter charger (if applicable)

**Ethernet Network**:

- Check Cisco mux
- Check fiber media converters and switches
- Clean and remove accumulated dust and dirt
- Clean filter

**6 GHz Microwave System:**

- Clean outside and front panel of case
- Tighten cable connections
- Measure and record operating parameters
- Measure and record transmitter RF frequency
- Measure and record receiver IF frequency
- Measure and record receiver AGC voltage
- Check dehydrator

**23 GHz Microwave System: (not applicable for ISP/CMS facility**

- Measure and record AGC voltage level
- Measure and record transmitter output power and frequency
- Tighten loose fasteners and replace missing hardware
- Check and replace indicator lamps
- Inspect cable for wear or fraying
- Clean painted surfaces and repair as necessary
- Check mounting hardware and guy wires of antennas, masts, or towers
- Measure and record transmitter gun current

**Modems Microwave System:**

- Remove dust from internal components with soft brush and low pressure air/vac

**Antennas Microwave:**

- Check tightness of hardware on mount, shroud, radome, and feed
- Inspect antenna and repair when necessary

**Remote Contol (Cattron) System: (not applicable for ISP/CMS facility**

- Check fuse resistance and replace when necessary
- Check fuse holders for corrosion and clean when necessary
- Check primary power source for proper readings
- Check control transmitter, receiver/decoder, relay output rack for loose bolts/screws/clamps
- Check fuses, holders, resistors, and transformers for over heating
- Visually check antenna, mounting devices, cables and connectors
- Conform receiver and transmitter in the system are aligned on the same frequency

**Gate Arm Heating System: (not applicable for ISP/CMS facility**

- Check for proper settings, operation, and LED indication

**CCTV: (not applicable for ISP/CMS facility**

Patrolmen shall inspect all equipment for cleanliness and proper operation, and check various levels and settings.

**Controller for Tower Lights**:

- Check and clean

**PLC Server: (ramp buildings and Hillside Hub)**

- Check operations

**DMS Signs**: (ramp buildings and Hillside Hub)

- Check media converter
- Check fiber transceiver

**Enclosures**:

- Blow dirt out of programmable controllers, I/O modules & power supplies with compressed air
- Blow dirt out of T-60 with compressed air
- Brush dust & construction debris off of the I/O racks, wire troughs, & horizontal surfaces
- Brush dust and construction debris off of the T-60 and other horizontal surfaces
- Vacuum dust and construction debris out of cabinets
- Wipe dirt off of edges of doors and door frames
- Check ground bus connections and bonding wires and lugs for tightness and integrity
- Check screws on AB 1771-I/O swing-arms for tightness
- Check screws on terminal boards for tightness
- Test Random Access Memory (RAM) function
- Verify alarms are updating properly
- Verify hard drive is functioning normally
- Verify screen brightness is within normal parameters
- Verify PLC-5 program backup is current and password protected
- Clean and inspect air filter
- Check bonding wires and lugs for tightness and integrity
- Check communication cable integrity
- Check alarm LED indicator lamp on AB I/O chassis

**General Items:**

- Replace or repair corroded conduit, junction boxes and connectors
- Replace or repair damaged weather stripping and/or minor leaks

- Replace batteries in the surge arresters, building clocks, and other equipment, per manufacturers' specifications
- PLC batteries to be replaced in April of each year
- Wet mop floors with water and biodegradable cleaner, in Buildings A, C, D and E

### 6.4.6 REVLAC CATTRON PM

The Contractor shall conduct a PM program twice per year, in April and October, for all Cattron remote controllers and their chargers at the Emergency Traffic Patrol (ETP) building. Since the units are needed daily by ETP for REVLAC operations, the PM shall be performed on a maximum of six units at any one time and with maximum turn-around time of one business day, returning the units the same evening. The units shall be tested for battery voltage; transmitting and receiving ability; power; modulation; and RX sensibility. The batteries shall be replaced, as needed.

If any unit is found to be defective, the unit shall be replaced with a spare unit until the repairs are completed. Tickets shall be issued for all defective units.

### 6.4.7 MICROWAVE PM

The Contractor shall perform a microwave preventive maintenance inspection at REVLAC buildings A, D, and E, ISP/CMS facility, and Hillside, Nordic Schaumburg buildings once per year, on a date as approved by the Engineer. The Contractor shall address any outstanding alarms and perform repairs as needed. The PM shall include the measurement and check, as applicable, of the following parameters by factory authorized and trained personnel:

- TX Crystal Frequency
- RX Crystal Frequency
- TX Output Power
- Gunn Current
- Input Voltage
- Video Input
- Audio Input
- AGC Level
- Receiver Frequency
- RX Carrier

### 6.4.8 GENERATOR PM

The Contractor shall perform generator preventive maintenance once per year, in October.

- Check control panel and transfer switch operation
- Check engine oil and coolant levels
- Check that block heater is working
- Check battery charging system
- Check for holes or leaks and loose connections in the air cleaner
- Check fuel level and fuel transfer pump operation
- Check for exhaust system leaks or restrictions
- Drain the condensation trap
- Check all meters, gauges, and indicator lamps
- Check generator fuel and note level
- Check for fluid/fuel leaks
- Check oil reservoir and battery acid level and maintain proper operating levels
- Check air filter and change if necessary
- Exercise generator at full load for one (1) hour
- Diesel fuel shall be filled to the proper level after testing

### 6.4.9 CCTV CAMERA PM

All CCTV cameras shall be inspected at least twice per year, unless noted otherwise, in April and October. No form is required, however, a summary of the camera trouble tickets shall be included in the monthly routine maintenance book.

- Clean camera lens and domes.
- Refill camera washers, if equipped
- Clean camera number labels, replace if damaged or missing
- Verify camera operation and correct for picture and control functions

### 6.4.10 RAMP GATE PM

All ramp gates shall be exercised and pressure washed with biodegradable detergent, once per year, in April. No form is required; however, a summary of any tickets shall be included in the monthly routine maintenance book.

### 6.4.11 AVL EQUIPMENT PM

Preventive maintenance on AVL equipment in each vehicle and covered under this contract is required to be done at least once per calendar year. A monthly report shall note dates of specific equipment that preventive maintenance (PM) was performed with all respective notes of performance results. An annual report shall be required reporting on all AVL equipment used in vehicles to summarize the monthly reports and to verify spare equipment inventory. Preventive maintenance shall at least include: reading RF power out, reading SWR and impendence of both receive and transmit antennas, check for and repair any breaks/shorts and other damage of all cables, check condition of all fuses and fuse holders, check and clean all connections (at antennas, at radio modem, at power connection, at GPS receiver, etc.), check data connectivity with respect to the system, check reception of GPS antenna and receiver, and clean any user interface appurtenances.

## 6.5 SYSTEM ACCESS

### 6.5.1 LOCATING CABLE OR OTHER COMPONENTS OF IDOT SYSTEMS

The Contractor shall be responsible for responding to all calls requesting a locate of ASMC equipment at all locations, and shall complete a locate form on the EMCMS, or Excel spreadsheet as approved by the Engineer. The Contractor shall locate and mark, as approved by the Engineer, underground cables or any other components of the ASMC systems to prevent damage and facilitate work by others. Such markings shall be given with a horizontal tolerance of at least one foot to either side. The marking shall be made to prevent damage and facilitate work by others, The Contractor shall promptly respond to locate calls within 24 hours, or immediately in emergency situations at the request of the Engineer. The Contractor is required to perform a locate of state underground cables or any other components, one time for each system location, per project or contract, as requested by the general contractor of the construction project. The cost for all locate services shall be included under routine maintenance.

### 6.5.2 PROVIDING SYSTEM SERVICES

Upon request of the Engineer, the Contractor is required to provide trained personnel for the following miscellaneous routine maintenance work:

- Provide system access to utility workers or inspectors approved by the Department
- Provide system access, open facilities, or provide tours for other contractors, consultants, or special State visitors, as approved by the Engineer
- Conduct an immediate System or component inspection upon notice of the Engineer

- Provide labor, transportation, and equipment, to assist IDOT inspectors in their inspection of any portion of a System(s)
- Provide additional special patrols, inspections, and tests to confirm proper system equipment operation
- Collect information to define the nature of repetitious or intermittent system malfunctions
- Provide occasional staff for monitoring (stand-by time) of hazardous or emergency situations

### 6.5.3 COORDINATION WITH ELECTRIC UTILITY COMPANIES, CONTRACTORS, AND OTHERS

The Contractor shall ensure the availability incoming power service and telephone service wiring and equipment, for all systems and facilities in proper condition at all times. The Contractor shall maintain contacts with the respective utilities and shall fully coordinate systems or facility access as required for utility company modification work as applicable, repair work as necessary, and other matters as necessary to assure continuity of service. The Engineer shall be promptly notified by email for cases such as the planned disruption of service power to system equipment.

## 6.6 WORK DOCUMENTATION

### 6.6.1 DAILY WORK AGENDA

The scheduling of daily work shall be a responsibility of the Contractor, but governed by established schedules and/or authorized work completion dates. The Contractor shall email the Engineer and each IDOT System Engineer/Inspector, a daily agenda which shall account for all scheduled repair work, both routine and non-routine work. The daily agenda shall be received by 8:30 a.m. on the specified workday or by 2:30 p.m. on Fridays when weekend work is scheduled by the Contractor. The Department will provide the Contractor the format for the daily agenda at the Pre-Construction Meeting. The daily agenda shall account for all personnel working that day or evening, listing their name, call number, description of work assignments, category of routine or non-routine work, and ticket number or authorization number if applicable.

If the Contractor's work/testing, as specified herein, requires the presence of an IDOT Engineer/Inspector, the Contractor shall give a minimum 24 hour notice to the appropriate Engineer/Inspector when that work is to be scheduled on the daily agenda. If the Contractor proceeds with the work without this pre-notification, the Contractor shall, by the decision of the Engineer, be required to either re-perform the work/test or shall be assessed liquidated damages.

When a special project and/or system modification warrants, the Engineer may direct the Contractor to create a separate special project agenda. The same issuance requirements apply for the special project agenda as for the daily agenda.

### 6.6.2 DISPATCH CENTER/STAFF ON-CALL SCHEDULE

On Friday of each week the Contractor shall provide the Engineer and each IDOT System Engineer/Inspector an email of the Contractor staff on-call weekend schedule and the dispatch center personnel work schedule for the weekend and following week. Names, call numbers, hours to be worked, and on-call supervisor cell and/or home telephone numbers shall be noted on this schedule.

### 6.6.3 PERSONNEL WORK DOCUMENTATION

The Contractor shall submit to the Engineer, weekly, via email an Excel spreadsheet report and monthly in the routine maintenance work documentation book:

1. Identification of employee, i.e., name and employee call (NEXTEL) number
2. Total weekly hours worked by the employee for the company
3. Total weekly hours worked on the ASMC, listing hours worked per system and category (routine and non-routine)

The Contractor shall maintain a current list of all personnel (including sub-contracting personnel) assigned work on the ASMC, applicable radio call numbers, cell and office telephone numbers. This list shall initially be furnished to the Engineer at the Pre-Construction meeting and the Contractor shall submit an updated list in the monthly routine maintenance work submittal book, with changes in personnel highlighted on each revised list.

### 6.6.4 ASMC TICKETS

All work related to the system equipment shall be documented by tickets in the EMCMS.

The Contractor shall immediately create a ticket on the EMCMS:

- When Contractor personnel finds malfunctions or damage to system equipment
- When IDOT personnel or any 3rd party reports malfunctions or damage to system equipment
- When any work in progress on equipment installation(s) is found not properly grounded and may endanger the public at large or other property of the State of Illinois
- When other incidents occur as noted herein

The Contractor shall, within 1 hour of receipt of information, record the following ticket information in the EMCMS:

- Name of informant and call-back number
- Time of dispatch of Contractor personnel
- Time of arrival at scene of Contractor personnel
- Problem found (including unit number of effected equipment)
- Time incident is cleared
- Description of work completed at scene
- Follow-up work, if necessary
- Police accident information (obtain from ComCenter or informant)
- Clearing information from the ComCenter

If the IDOT ComCenter contacts the ASMC dispatch center with an incident of system damage or malfunction, the Contractor shall immediately create an EMCMS ticket, noting the IDOT ComCenter incident number and name of the ComCenter Dispatcher. The Contractor is required to telephone the IDOT ComCenter once the incident has been cleared, and make a second call for notification of permanent repairs, if requested by ComCenter staff. Details of repair work shall be kept on the tickets for viewing by all IDOT personnel.

The EMCMS shall be the source and control of ticket number assignments for selected work activities of all systems. A single series of numbers will be sequentially assigned from the EMCMS database and will be used for all work activities related to the original work assignment. A separate numbering system for tickets will not be allowed.

Here is the ticket history of the ASMC in the last five years. Note increase in camera incidents due to new installations starting in 2004.

| Ticket Type | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|
| Barrier | 5 | 7 | 5 | 1 | 6 |
| CCTV | 74 | 57 | 101 | 84 | 206 |
| Equipment Problems | 113 | 103 | 68 | 92 | 131 |
| Fiber Optic Problems | 9 | 7 | 5 | 2 | 7 |
| Motorist Damage | 15 | 26 | 39 | 34 | 21 |
| Swing Gate Damage | 52 | 38 | 12 | 13 | 30 |
| **TOTAL** | **268** | **238** | **230** | **226** | **401** |

The Contractor shall provide the special paper as necessary, (tractor feed 17 7/8 inch x 11 inch 20lb bond) and transmit the EMCMS ticket summary to the Engineer and IDOT Schaumburg Headquarters, by 8:30 A.M., Monday through Friday workdays. This report shall account for all tickets created from 7 a.m. the prior day to 7 a.m. the current day. The Monday daily ticket summary shall account for the time period from Friday 7 a.m. through Monday at 7 a.m.

### 6.6.5 THIRD PARTY DAMAGE (CONSTRUCTION AREAS) REPAIR DOCUMENTATION

The Contractor is eligible to recover actual repair and/or construction costs for each incident of construction damage to system equipment from each respective third party, with Engineer approval, after following these procedures:

1. For Third Party Damage the Contractor shall create an EMCMS GB (general billing) ticket with name of Contractor at the scene, address, contract or permit number and contact name.

2. The applicable party shall be sent a written estimate of repair (or construction) costs.

3. The Contractor shall notify the IDOT Engineer/Inspector when the work is complete and ready for inspection by submitting to the Engineer, in the monthly routine maintenance work documentation book, a file on each 3rd party damage (or work) incident where permanent repairs have been completed. The file shall contain copies of the completed ticket, daily general billing log(s), all correspondence, and Contractor prepared original invoice. (Note: The 3rd party invoice number shall be the same as the ticket number.)

4. After the work has been inspected, and the Engineer has signed an approval on the original invoice, the Contractor may submit to the third party. If the work is inspected but not approved the unsigned invoice shall be returned with a corrective work list. Contractor shall not submit an invoice to a third party for damage to IDOT property without an IDOT approval signature.

### 6.6.6 CONTRACTOR ADVISORY

If the Contractor identifies system elements, which, due to age or normal wear and tear have become prone to recurring or imminent failure, or which otherwise pose a significant liability or a safety risk, the Contractor will recommend replacement or repair by submitting an advisory inspection report in the monthly routine work documentation book.

The Engineer may respond to the Contractor in regards to the advisory inspection, and reserves the right to determine a course of action to rectify any identified condition. When the Engineer concurs with the Contractor's basic recommendations, a non-routine authorization will be issued for the material portion of the repair and this will reduce the Contractor's routine maintenance obligation to the labor necessary to replace the deteriorated system element. Should the Engineer determine, however, that a deteriorated condition is due to neglectful maintenance on the part of this Contractor, all remedial work shall be performed as routine maintenance.

In the absence of an advisory inspection report received and acknowledged by the Engineer, if system elements fail or are observed by the Engineer to be causing recurring failures or imminent safety hazards, then the Contractor is obligated for the full cost of replacement or repair under routine maintenance. Such obligation is not limited only to individual components but may extend to the multiples of components at a location(s).

### 6.6.7 MONTHLY ROUTINE WORK DOCUMENTATION BOOK

On the third day business day of each month, (May through April of each year) the Contractor shall submit to the Engineer a three ring binder, which contains the required documentation of the various items of routine maintenance work as required herein, for the prior month. These submittals include, but are not limited to:

Warehouse State Stock Disbursement Report - Refer to Article 5.3.3

ASMC State Stock Disbursement Reports - Refer to Article 5.3.4

Contractor State Stock Receipt Report - Refer to Article 5.3.5

State Stock Inventory Report Summary - Refer to Article 5.3.7

State Scrap Report - Refer to Article 5.3.8

Site Maintenance Work Summary - Refer to Article 6.1.5

Contractor Completed PM Forms – Refer to Article 6.4

Contractor PM Schedule for Next Month - Refer to Article 6.4

Personnel Work Documentation - Refer to Article 6.6.3

Third Party Invoices for Construction Damage Billing - Original Invoice ready to be signed by the Engineer (refer to Article 6.6.5)

Motorist Caused Highway Damage Statements (for MC tickets) - Refer to Article 6.7.2

Contractor Advisory Reports - Refer to Article 6.6.6

Vendor Payment Summary - Refer to Article 7.6.5

## 6.7 ROUTINE MAINTENANCE BILLING

### 6.7.1 DETERMINATION OF ROUTINE MAINTENANCE MONTHLY PAYMENT

The Contractor shall be sent via email, in advance of the Pay Meeting, the Department routine maintenance authorization for payment. This authorization for payment includes the total dollar amount of the monthly routine maintenance pay items, and any credits, debits, withholding, MCHD deductions, and applicable routine or non-routine work liquidated damages.

Incomplete routine work may cause the application of liquidated damages or retainage of the routine maintenance payment due the Contractor. In the final month of the Contract the Engineer retains the right to retain up to 75% of the final month's routine maintenance payment until all authorized routine and non-routine maintenance work is complete, but may progressively release portions of the retainage as the incomplete work is reduced. Key items for completion of work under a term include:

- All routine work complete, approved, with all submittal documentation
- All workforce analysis reports submitted and accepted
- All DBE/EEO submittals complete and accepted/approved

### 6.7.2 MOTORIST CAUSED HIGHWAY DAMAGE CLAIMS

The IDOT Claims Department, under the office of the Chief Counsel, processes incidents of motorist caused damage in order to obtain payment from the Motorist Caused Highway Damage Fund. The Department shall provide the Contractor with an IDOT Claim number for each ticket, where the equipment damage has been traced to a responsible party and matched to a police accident report, so a MCHD statement for the IDOT Claims Department may be created.

The Contractor shall prepare formal MCHD statements monthly, on company letterhead, which document repair work and equipment replacement costs for each MC ticket, including the date of incident, date of repair, type or model of equipment replaced or repaired, labor time, and vehicle use. Each statement shall be signed, verifying completion of work to contract standards. The Contractor supplied original MCHD statements and six (6) copies, 10 inch by 13 inch manila envelopes for each, with two Brother address label/tapes, size as approved by the Engineer, shall be submitted within seven (7) days of the request of the Engineer. The Contractor shall also supply the windowed envelopes as needed for police accident reports (as specified by the Engineer).

The total dollar amount of the processed statements will be deducted from the Contractor's regular monthly routine maintenance payment and approximately forty five (45) days later payment shall be scheduled to the Contractor from the State of Illinois Motorist Caused Highway Damage Fund.

### 6.7.3 ROUTINE MAINTENANCE PAY MEETING

A routine maintenance Pay Meeting shall be held on the second Wednesday of each month (beginning May, 2008), at the IDOT Materials Lab conference room in Schaumburg, Illinois, or other location as determined by the Engineer. The ASMC Project Manager any other additional ASMC Personnel, as appropriate, shall meet with the Engineer, to review the maintenance work progress of the prior month. Work completed in the prior month, and work planned for the current month shall be presented by the Contractor and reviewed at the Pay Meeting. In addition, the Engineer will identify any major work issues requiring Contractor attention and the Contractor shall present any problems noted with the systems which require a new work initiative.

The Contractor shall bring monthly routine invoice to the Pay Meeting and the payment shall match the Department authorization as previously sent via email. The Contractor invoice shall carry the same invoice number as the monthly authorization.

If the monthly routine maintenance work was not completed as agreed by the Engineer, or any documentation is received late, the Pay Meeting and monthly payment may be accordingly delayed. If the monthly invoice is incorrectly prepared it shall be returned to the Contractor and scheduling of the monthly payment delayed until such time as the corrected invoice is received.

The monthly routine maintenance payment to the Contractor is scheduled for payment in the District 1 Headquarters, and the invoice sent to IDOT Springfield for payment. Payment is normally made to the Contractor within sixty (60) days, but delays have been known to occur.

## 7.0 NON-ROUTINE MAINTENANCE WORK

### 7.1 GENERAL REQUIREMENTS

Non-routine work under this Contract is specifically authorized work, not covered under the requirements of routine maintenance, for materials and work on the systems that tends to be irregular, event driven, or otherwise based on the selective direction of the Engineer in response to system needs. Non-routine work shall include unit-priced (PAY ITEM) work, agreed price work, force-account work, and specialty service work.

The Department is under no obligation to authorize any non-routine work. The Department shall authorize unit price work in addition to agreed price or force account work for the same job/location, to meet system needs as they arise.

The Department reserves the right to furnish any or all of the materials or parts for non-routine work, in which case no charge for items so furnished, shall be made by the Contractor. Materials or parts furnished by the Department may be from the state stock inventory or from other sources available to the Department.

All non-routine work shall be authorized and invoiced on the EMCMS. An EMCMS authorization letter shall be received by the Contractor prior to the start of all non-routine work. Any non-routine maintenance work undertaken by the Contractor prior to receiving an approved authorization is done at the Contractor's own risk. The Department is under no obligation to pay for unauthorized work or work which is not in compliance with this contract. Contract provisions or practices employed under other contracts shall have no bearing on these constraints under this contract.

As requested by the Engineer, the Contractor shall perform non-routine work at State facilities, in connection with the systems being maintained under the Contract, or for equipment not yet maintained by the Department, and therefore not listed herein.

### 7.2 SPECIAL PAYMENT SITUATIONS

In the cases of lightning and power outages of significant duration, the Contractor must respond per routine maintenance requirements herein, however, any damage repairs as necessary may be paid to the Contractor through non-routine maintenance. The Contractor must provide reasonable evidence that the occurrence was caused by acts beyond the Contractor’s control and not due to the Contractor’s negligence or substandard maintenance. The Engineer shall be notified immediately, for a joint equipment inspection, if the Contractor suspects lightning damage or power outage event damages.

Certain work that involves operational District systems maintained under this Contract, such as CCTV additions to accomplish a Homeland Security commitment of the department, may be assigned as non-routine work, increasing work under the Contract, and such authorizations will use contract pay items to the extent possible and practical, and although such work may have payments tracked and processed separately due to the task-specific nature of the applicable funds, it will be applicable to and governed by the Contract.

### 7.3 WORK COMPLETION REQUIREMENTS

The normal completion time for non-routine work shall be 90 calendar days from the IDOT transmittal date of the authorization letter. The Contractor may contact the Engineer to request a later date, or the Engineer may request an earlier date from the Contractor. If the Contractor fails to seek a change in completion date, the work completion time will remain as initiated by the Engineer.

The Department retains the right to cancel any non-routine work authorization upon which work has not started and/or access liquidated damages for work not completed on time.

## 7.4 DEPARTMENT APPROVAL OF WORK

Unless prior approval is given by the Engineer, the Contractor shall notify the Engineer one day, (24 hours), prior to the Contractor's completion of the authorized work project in order that a joint EMC/IDOT inspection of the work may be held. In addition, the Contractor shall submit record drawings of any changes to the system(s) prior to the completion of the work.

The Engineer may waive the physical field inspection of any work if he believes the completion to be reasonably demonstrated by performance of the system, electronic monitoring, or other means. In such cases, the Engineer reserves the right to follow-up and/or selective spot inspections, and if evidence of prior incomplete or incorrect work is found, the Contractor shall remain responsible for corrective action and open to liquidated damages and/or payment withholding as provided elsewhere herein.

## 7.5 DESCRIPTION OF NON-ROUTINE WORK

### 7.5.1 UNIT PRICE AUTHORIZATIONS

Unit-priced (PAY ITEM), non-routine work shall consist of work which has been authorized based upon the unit prices (PAY ITEMS) bid on this contract for the various non-routine work items.

Quantities included for bidding are only estimates and actual quantities may vary. The pace of construction activities within District 1 as well as a number of other unpredictable factors will cause variances from indicated quantities. The Contractor's unit prices are expected to be realistic and no additional compensation will be allowed due to a variance in quantities; however, the Engineer retains the right to seek a revised unit price where quantities exceed estimated quantities to the extent that additional economies of scale would be normal. The Engineer also retains the right to use force account procedures or use other procurement means available to the Department where unit prices reflect pricing significantly higher than Department projected norms. The Contractor is cautioned against unbalanced bidding and is directed to Article 102.01 of the Standard Specifications.

### 7.5.2 AGREED-PRICE AUTHORIZATIONS

Agreed-price, non-routine work shall consist of work for which bid unit prices are not applicable. The Contractor shall prepare, in accordance with Article 109.04 (a) of the Standard Specifications, and as directed by the Engineer, a quote for an agreed price.

The Contractor shall submit an estimated quote for agreed price work, prior to the beginning of a job, when quantities are estimated. If specifically requested by the Engineer, however, the Contractor shall submit a fixed, agreed price quote for the necessary work.

Once the Department issues an agreed-price authorization from a Contractor supplied quote, there will be no revision to the per hour labor costs effective on that date.

The Contractor may be requested to provide an agreed price quote for Department specialty service work as necessary. If the Contractor is furnishing an invoice for materials for specialty service work, the quote may include the appropriate mark-up per Article 109.04(b)(3) of the Standard Specifications for Road and Bridge Construction, however, specialty service work, in its entirely, shall not be considered "materials" when a quote for this work is submitted to the Department, nor shall Article 109.05 of the Standard Specifications for Road and Bridge Construction be applicable.

In accordance with Article 109.04 (b)(7) of the Standard Specifications for Road and Bridge Construction, as hereby modified, when work is performed by an approved subcontractor, the Contractor shall be paid administrative costs of an amount equal to five (5) percent of the first $10,000, and the Department shall allow an additional one (1) percent of any amount over $10,000 of the total approved costs, on a individual work authorization.

### 7.5.3 FORCE ACCOUNT AUTHORIZATIONS

Force Account Work shall consist of work for which an agreed price cannot be established between the Engineer and the Contractor. The Engineer may direct the Contractor to perform any non-routine work as force account work which shall be measured and paid as described in Article 109.04(b) of the Standard Specifications for Road and Bridge Construction. A signed daily time/work accounting shall be kept on the daily general billing log, which shall be submitted to the Engineer within seven (7) working days following the completion of work. A general foreman's time will not be billable on force account work unless there are more than five (5) additional crew workers employed at any one time, place and job and then only with the prior approval of the Engineer. A mark-up of fifteen (15) percent is allowed for material costs, which shall include any shipping and handling fees. The Contractor shall not be allowed overtime and/or prime time billing unless prior approval is received from the Engineer.

### 7.5.4 EXPENSES INCURRED BY THE DEPARTMENT

In accordance with Article 109.05 of the Standard Specifications for Road and Bridge Construction, upon written request of the Engineer, the Contractor shall pay the bills for specialty service work and/or expenses incurred by the Department. The Contractor shall be paid administrative costs of an amount equal to five (5) percent of the first $10,000, with a minimum of $ 100.00, and the Department shall allow an additional one (1) percent of any amount over $10,000 of the total approved costs, for an individual work authorization.

## 7.6 EMCMS NON-ROUTINE WORK PROCESSING

### 7.6.1 ESTIMATED AUTHORIZATIONS

EMCMS estimated quantity authorizations are issued by the Engineer and transmitted to the Contractor, prior to the beginning of a job, when quantities are estimated.

Within five (5) working days of an Engineer request, the Contractor shall enter price quotes for agreed price or force account non-routine work in the EMCMS and email or fax copies to the Engineer for review. One quote shall be necessary for each non-routine authorization letter. If additional explanation is necessary the Engineer may request submittal of additional paperwork to explain details or provide justification of the work or price, before issuing the estimated agreed price or force account authorization letter.

It is the Contractor's responsibility to review daily, on the EMCMS, the list of new authorizations which have been transmitted to the Contractor, and subsequently view and print the non-routine work authorization letters. The Contractor shall communicate with the Engineer regarding any questions about the work assignment. Any non-routine authorization letters which have been transmitted, but not entered as received by the Contractor on the EMCMS within seven (7) working days shall be subject to the assessment of liquidated damages.

### 7.6.2 FINAL AUTHORIZATIONS

When the work is complete the Contractor shall enter the work completion date in the EMCMS authorization letter, print an EMCMS copy of the authorization letter, note any quantity changes, (revise agreed price quote if necessary) and fax to the Engineer.

Following the field inspection of the work, if the proper documentation of work has been received, i.e., daily general billing logs (with field supervisor's acceptance/approval of completed work and proper documentation of time and materials used, or other required billing documents as specified herein), the Engineer shall enter an approval in the EMCMS, issue the final authorization letter, and re-transmit to the Contractor. After these procedures are completed, the Contractor may create an EMCMS invoice for payment of the work.

### 7.6.3 CORRECTIVE WORK LIST

In cases where deficiencies are found at the IDOT inspection of the Contractor's work, the Engineer will issue a corrective work list (CWL) on the EMCMS. The Contractor shall view the EMCMS corrective work list summary report on a regular basis and promptly address any work deficiencies. When the Contractor has completed the work deficiencies, the Contractor shall notify the Engineer that the work is ready to re-inspect.

### 7.6.4 NON-ROUTINE INVOICE PAYMENT

The Contractor shall prepare an EMCMS invoice for each Final Authorization letter. Each EMCMS invoice shall carry the same number as the authorization letter and shall be signed by a Principal of the Company, attesting that the work, as invoiced, has been completed and inspected in accordance with the provisions of the Contract and all applicable specifications. The invoice shall also show a notarized certification by an officer of the Company. The invoice paper and header style must conform to the specifications required for printing on the EMCMS.

All work billed for payment shall be complete, no billing for partially-completed work will be allowed. All invoices shall be submitted to the Department no later than 30 days following work completion approval by the Engineer.

For proper payment of completed work, the Contractor shall submit to the Engineer an original signed invoice with two copies, and an original signed final authorization letter with two copies. (If an estimated authorization letter, rather than the final authorization letter is attached to the invoice it will be promptly returned to the Contractor.) The Engineer will sign the invoice and authorization and will forward to the Region's Financial Services office personnel for scheduling of payment. Normal processing time for non-routine work payment to the Contractor is 6 to 8 weeks.

### 7.6.5 VENDOR OR SPECIALTY SERVICE PAYMENT

The Contractor shall pay the expense incurred by the Department within seven (7) calendar days of the Engineer scheduling the Contractor's invoice for payment in the EMCMS. A fax or email confirmation of the payment, with check number, shall be sent to the Engineer.

## 8.0 NON-ROUTINE PAY ITEMS

### ACB1 MULTICONDUCTOR POWER CABLE, INSTALL ONLY

**DESCRIPTION**

This work shall consist of transporting from state stock storage facility and installing a multiconductor power cable in accordance with Section 817 of the Standard Specifications.

**METHOD OF MEASUREMENT:**

Electric cable in conduit, pulled and installed, shall be counted, per foot.

**BASIS OF PAYMENT**

This work will be paid for at the contract unit price for **MULTICONDUCTOR POWER CABLE, INSTALL ONLY** per foot, which price shall be payment in full for installing the electric cable complete. If two or more cables in a conduit are to be removed and reinstalled, each cable will be measured for payment separately.

## ACB2 MULTICONDUCTOR CONTROL CABLE, INSTALL ONLY

**DESCRIPTION**

This work shall consist of transporting from state stock storage facility and installing a multiconductor control cable in accordance with Section 817 of the Standard Specifications.

**METHOD OF MEASUREMENT:**

Electric cable in conduit, pulled and installed, shall be counted, per foot.

**BASIS OF PAYMENT**

This work will be paid for at the contract unit price for **MULTICONDUCTOR CONTROL CABLE, INSTALL ONLY** per foot, which price shall be payment in full for installing the electric cable complete. If two or more cables in a conduit are to be removed and reinstalled, each cable will be measured for payment separately.

## ACB3 EXISTING CABLE FROM CONDUIT, REMOVE ONLY

**DESCRIPTION**

This work shall consist of removing existing cable in accordance with the Standard Specifications.

**METHOD OF MEASUREMENT:**

Electric cable removed, shall be counted, per foot.

**BASIS OF PAYMENT**

This work will be paid for at the contract unit price for **EXISTING CABLE FROM CONDUIT, REMOVE ONLY** per foot**,** which price shall be payment in full for the work described herein. If two or more cables in a conduit are to be removed, each cable will be measured for payment separately.

## ACC1 CCTV CAMERA FOR CONSTRUCTION AREAS, FURNISH AND INSTALL

**DESCRIPTION**

This item shall consist of furnishing and installing a complete roadside CCTV package, as specified herein, at a site designated by the Engineer. Acquisition and installation of the associated telephone lines and 120 VAC power drop shall be coordinated with the State's Electrical Maintenance Contractor.

The material and equipment to be supplied shall be compatible with the existing system in the District 1 ComCenter and identical to other sites already installed. The package shall include: 1) a 50 foot wooden pole, 2) a Philips Envirodome Camera bi-phase or RS232 control, 2) Axis communications, 24IS or approved equal, 4) lightning and surge protection, and 5) all other wiring and appurtenances necessary for a full video service operational installation.

The installation of the wooden pole shall include an in ground pole depth of no less than 10 feet with the remaining work in accordance with Article 830.03 of the current version of the Standard Specifications for Road and Bridge Construction. Also included shall be: 1) mounting and interconnecting all material and equipment on the pole in complete accordance with manufacturers recommendations, 2) all connections to associated telephone lines and 120 VAC power, and 3) site and ComCenter software configuration to seamlessly integrate the new location into the existing video system.

**TRANSPORTATION, STORAGE AND HANDLING**

All necessary transportation, storage and handling shall be in accordance with manufacturer's recommendations and these Special Provisions.

**INSPECTION AND ACCEPTANCE**

The Contractor and manufacturer personnel shall test and inspect the installation and performance of the system in the presence of the Engineer. No additional monies shall be allowed for any subsequent changes necessary to provide seamless integration and operation of the Construction Area CCTV package into the existing system.

**BASIS AND PAYMENT**
This item shall be paid at the contract unit price each for **CCTV CAMERA FOR CONSTRUCTION AREAS, FURNISH AND INSTALL** which shall be payment in full for the work described herein.

## ACC2 CCTV CAMERA FOR CONSTRUCTION AREAS, REMOVAL, SALVAGE

**DESCRIPTION**
This item shall consist of the removal, transportation to State Stock, and unloading as salvage, a CCTV camera assembly for construction areas.

**TRANSPORTATION**
The Contractor shall transport, handle and store (as applicable) the CCTV cameras in complete conformance with the manufacturer's recommendations.

The Contractor shall use extreme care in handling the cameras. Any damage to the cameras will be corrected at no additional cost to the State.

**REMOVAL**
The CCTV dome camera shall be removed in accordance with the camera manufacturer's instructions, except as noted herein.

**BASIS OF PAYMENT**
This item shall be paid at the contract unit price each for **CCTV CAMERA FOR CONSTRUCTION AREAS, REMOVAL, SALVAGE,** which shall be payment in full for the work as described herein.

## ACC3 CCTV DOME CAMERA ASSEMBLY, COLOR, PTZ CONTROL, FURNISH ONLY

**DESCRIPTION**
This item shall consist of furnishing and delivering to State stock a Color CCTV dome camera assembly complete with an outdoor environmentally rated housing as manufactured by Bosch, Inc. Series 500i with external transformer or approved equal suitable for integration into the existing system. The assembly shall include a high performance color camera with 26X optical zoom or better, and 12X digital zoom. The assembly shall also include the pan, tilt and zoom mechanisms. An alternate camera manufacturer may be used provided that it is directly compatible with the existing CCTV camera system without the use of external PTZ protocol conversion devices and with the approval of the Engineer.

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each for **CCTV DOME CAMERA ASSEMBLY, COLOR, PTZ CONTROL, FURNISH ONLY,** which price shall be payment in full for furnishing and delivering the materials to State stock as specified herein and as directed by the Engineer.

## ACC4 CCTV DOME CAMERA ASSEMBLY, COLOR, PTZ CONTROL, INSTALL ONLY

**DESCRIPTION**
This item shall consist of the retrieval from State Stock, loading, transporting and installing of a CCTV dome camera assembly, color, PTZ position.

**TRANSPORTATION**
The Contractor shall transport, handle and store (as applicable) the CCTV dome cameras in complete conformance with the manufacturer's recommendations.

The Contractor shall be aware that the clear domes of these cameras are highly susceptible to scratching and scuffing. The Contractor shall use extreme care in handling the domes. Any damage to the dome will be corrected at no additional cost to the State including complete replacement on the clear dome.

**INSTALLATION**
The CCTV dome camera assembly installation shall be installed in accordance with the CCTV dome camera manufacturer's installation instructions except as noted herein.

**BASIS OF PAYMENT**
This item shall be paid at the contract unit price each for **CCTV DOME CAMERA ASSEMBLY, COLOR, PTZ CONTROL, INSTALL ONLY**, which shall be payment in full for the work as described herein.

## ACC5 CCTV CAMERA, FURNISH AND INSTALL

**DESCRIPTION**
This item shall consist of furnishing and installing a CCTV Camera. The camera may be a fixed position camera or a barrel type camera with PTZ. Dome cameras are furnished under item ACC3.

**TRANSPORTATION**
The Contractor shall transport and handle the CCTV cameras in complete conformance with the manufacturer's recommendations.

**INSTALLATION**
The CCTV camera shall be installed in accordance with the CCTV camera manufacturer's installation instructions except as noted herein.

**BASIS OF PAYMENT**
This item shall be paid at the contract unit price each for **CCTV CAMERA, FURNISH AND INSTALL**, which shall be payment in full for the work as described herein.

## ACC6 CCTV CAMERA ASSEMBLY, COLOR, FIXED CONTROL, FURNISH AND INSTALL

**DESCRIPTION**
This item shall consist of furnishing, and installing, a color CCTV camera assembly complete with housing and mounting adaptor, as manufactured by Bosch, assembly no. LTC 0620/61 camera, with LTC 3274/40 lens, LTC 9488/61 housing with sun shield and AH2000 mounting adaptor or as approved by the Engineer, compatible with the fixed position CCTV camera system in use. The item shall also consist of furnishing, and installing one pair of multimode fiber transceivers, GE Model 700VT-EST transmitter and Model 700VR-RST receiver, and one junction box (8”x8”x6”, NEMA 4, Stainless Steel) to house the new transmitter, or as approved by the Engineer, compatible with the existing CCTV camera system in use. Modifications to the existing wiring, multimode fiber and raceways and removal of the old camera and transceivers shall be incidental to this pay item.

**INSTALLATION**
The color CCTV camera shall be installed in accordance with the camera manufacturer's installation instructions except as noted herein.

**REMOVAL**
The old camera and its fiber transceivers shall be removed and salvaged, as directed by the Engineer.

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each for **CCTV CAMERA ASSEMBLY, COLOR, FIXED CONTROL, FURNISH AND INSTALL,** which price shall be payment in full for furnishing and installing the camera and salvaging the old camera and associated equipment, as directed by the Engineer.

## ACC7 CCTV CAMERA, REMOVAL AND SALVAGE

**DESCRIPTION**

This item shall consist of the removal, transportation to State Stock, and unloading as salvage, a CCTV camera and or camera assembly, and its appurtenances. The camera may be a fixed position camera, a camera with PTZ mechanism, or a dome camera, but not a camera from a construction area. CCTV camera for construction areas, removal and salvage is covered under Pay Item ACC2.

**TRANSPORTATION**

The Contractor shall transport, handle and store (if applicable) the CCTV cameras in complete conformance with the manufacturer's recommendations.

**REMOVAL**

The CCTV camera shall be removed in accordance with the CCTV camera manufacturer's instructions.

**BASIS OF PAYMENT**

This item shall be paid at the contract unit price each for **CCTV CAMERA, REMOVAL AND SALVAGE,** which shall be payment in full for the work as described herein.

## ACM1 CCTV COLOR MONITOR, QUAD, 4", FURNISH ONLY

**DESCRIPTION**

This item shall consist of furnishing and delivering to State Stock four, 4" inch, active matrix, color monitors, Marshall Electronics V-R44P or approved equal, with the following characteristics.

| | |
|---|---|
| Power Source | 120 V AC, 60 Hz |
| Power Consumption | 3 W (Approx.) |
| Input/Output | Video (Input:1 with active loop through) |
| TV System | NTSC |
| Resolution | 480 x 234 pixels, 112,300 total |
| Dot Pitch | .171 mm X .264 mm pixel |
| Viewing Radius | $130^0$ Horizontal and vertical |
| Brightness (in $cd/m^2$) | 300 |
| Contrast Ratio | 500:1 |
| Actual Display Size (Approx.) | 3.23" X 2.43" (4" diagonal) |
| Overall Size (Approx.) | 19.125"W X 3.43"H X 1.9"D |
| 19-type Rack-Mount | Yes, 2U High |
| Ambient Operating Temperature | -10°C to +50°C (+14°F to +122°F) |
| Ambient Operating Humidity | Less than 90% |
| Backlight Life | 5 year /50,000 hours |
| Weight | 3.5 lbs. |

**BASIS OF PAYMENT**

This work shall be paid at the contract unit price each for **CCTV COLOR MONITOR, QUAD, 4", FURNISH ONLY,** which price shall be payment in full for furnishing and delivering the materials to State stock as specified herein and as directed by the Engineer.

## ACM2 CCTV COLOR MONITOR, 8.4", FURNISH ONLY

**DESCRIPTION**

This item shall consist of furnishing and delivering to State Stock one, 8.4 inch, active matrix, CCTV Color monitor, Marshall Electronics V-R84P-SDI or approved equal, with the following characteristics. Note a REVLAC panel installation shall include custom mounting bracket.

| | |
|---|---|
| Power Source | 120 V AC, 60 Hz |
| Power Consumption | 4 W (Approx.) |
| Input/Output | 1 composite video, S-Video and SDI inputs with active loop through |
| TV System | NTSC |
| Resolution | 800 x 600 dots with 1.44 million RGB pixels |
| Dot Pitch | .213 mm square pixel |
| Viewing Radius | $130^0$ Horizontal and vertical |
| Brightness (in $cd/m^2$) | 350 |
| Contrast Ratio | 500:1 |
| Actual Display Size (Approx.) | 6.7" X 5.03" (8.4" diagonal) |
| Overall Size (Approx.) | 8.74"W X 6.73"H X 2.65D |
| Stand Alone | Yes |
| Ambient Operating Temperature | -10°C to +50°C (+14°F to +122°F) |
| Ambient Operating Humidity | Less than 90% |
| Backlight Life | 5 year /50,000 hours |
| Weight | 3 lbs. |

**BASIS OF PAYMENT**

This work shall be paid at the contract unit price each for **CCTV COLOR MONITOR, 8.4", FURNISH ONLY,** which price shall be payment in full for furnishing and delivering the materials to State stock as specified herein and as directed by the Engineer.

## ACM3 CCTV COLOR MONITOR, DUAL, 8.4", FURNISH ONLY

**DESCRIPTION**

This item shall consist of furnishing and delivering to State Stock one dual screen, 8.4 inch Color TFT monitors, Marshall Electronics V-R82DP-2C or approved equal, with the following characteristics.

| | |
|---|---|
| Power Source | 120 V AC, 60 Hz |
| Power Consumption | 10 W (Approx.) |
| Input/Output | Video (Input: 2 / Output: 2, loop through) -- composite video |
| TV System | NTSC |
| Resolution | 800 x 600 dots with 1.44 million RGB pixels |
| Dot Pitch | .213 mm square pixel |
| Viewing Radius | $130^0$ Horizontal and vertical |
| Brightness (in $cd/m^2$) | 350 |
| Contrast Ratio | 500:1 |
| Actual Display Size (Approx.) | 17 cm X 12.8 cm (8.4" diagonal) |
| Overall Size (Approx.) | 25 cm (9-13/16") diagonal |
| 19-type Rack-Mount | Yes, 4U Height |
| Ambient Operating Temperature | -10°C to +50°C (+14°F to +122°F) |
| Ambient Operating Humidity | Less than 90% |
| Backlight Life | 5 year /50,000 hours |
| Dimensions (W x H x D) | 486 x 175 x 38 mm (19-1/8" x 6-7/8" x 1-1/8") |
| Weight | 2.4 kg (5.5 lbs.) |

**BASIS OF PAYMENT**

This work shall be paid at the contract unit price each for **CCTV COLOR MONITOR, DUAL, 8.4", FURNISH ONLY,** which price shall be payment in full for furnishing and delivering the materials to State stock as specified herein and as directed by the Engineer.

## ACM4 CCTV COLOR MONITOR, 12", FURNISH ONLY

**DESCRIPTION**

This item shall consist of furnishing and delivering to State Stock a 12.1", LCD, Color CCTV monitor, Marshall Electronics V-LCD12.1-SVGA or approved equal, with the following characteristics.

| | |
|---|---|
| Power Source | 120 V AC, 60 Hz |
| Power Consumption | 40 W (Approx.) |
| Input/Output | Composite Video and S-Video |
| TV System | NTSC |
| Resolution | 800 X 600 Pixels |
| Dot Pitch | 0.3075 mm square pixels |
| Brightness | 25 cd |
| Display | 12.1" diagonal (9.62" X 7.25") |
| Overall Size (Approx.) | 11.5" X 8.75" X 1.25" |

**BASIS OF PAYMENT**

This work shall be paid at the contract unit price each for **CCTV COLOR MONITOR, 12", FURNISH ONLY,** which price shall be payment in full for furnishing and delivering the materials to State stock as specified herein and as directed by the Engineer.

## ACM5 CCTV LCD MONITOR, FURNISH ONLY

**DESCRIPTION**

This item shall consist of furnishing a 42 inch Color CCTV flat screen LCD monitor with the following characteristics.

| | |
|---|---|
| Power Source | 120 V AC, 60 Hz |
| Video Standards Supported | NTSC, PAL, SECAM, 4.43NTSC, PAL-60,, M-PAL, N-PAL |
| Input | Video Input: S-video, Composite, 2 Component<br>Audio Input: 3 inputs L, R<br>Computer Inputs: 15 pin, DVI-D (HDCP) |
| Display Type | LCD TFT Active Matrix |
| Color Depth | 24-bit (16.7 million colors) |
| Resolution | 1366 x 768 |
| Screen Size | 42" diagonal |
| Brightness | 500 cd/m2 |
| Viewing Angle | 170 degrees Vertical and Horizontal |
| Pixel Pitch: | 0.68 mm |
| Pixel Response Time | 16 ms |
| Max V-Sync Rate | 85 Hz |
| Aspect Ratio | 16:9 |
| Displayable Colors | 16.7 million |
| Backlight Life | 60,000 hours |

| | |
|---|---|
| Ambient Operating Temperature | 32F to 104F degrees |
| Ambient Operating Humidity | Less than 90% |
| Speaker Output | 0.5 W |
| EMC Regulations | FCC part-15 Class B, ICES-003, Class B, AS/NZS3548 Class B |
| Safety Regulations | UL 1950, CSA22.2 No. 950 (C-UL) |

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each for **CCTV LCD MONITOR, FURNISH ONLY**, which price shall be payment in full for furnishing the monitor as specified herein and as directed by the Engineer.

## ACM6 CCTV LCD MONITOR, INSTALL ONLY

**DESCRIPTION**
This item shall consist of retrieving from State stock, transporting to the site and installing a 42 inch Color CCTV flat screen LCD monitor, as specified in Pay Item ACM5, at a location as directed by the Engineer.

**INSTALLATION**
The monitor shall be ceiling mounted as are the existing monitors. All hardware and mounting brackets shall be included in this item and not paid separately.

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each for **CCTV LCD MONITOR, INSTALL ONLY**, which price shall be payment in full for installing the monitor as specified herein and as directed by the Engineer.

## ACP1 CCTV CAMERA POLE, FURNISH ONLY

**DESCRIPTION**
This item shall consist of furnishing and delivering to State Stock, a CCTV camera pole, under 55 feet M.H., complete with CCTV camera mounting brackets as manufactured by Union Metal Inc., or as approved by the Engineer, identical to the existing CCTV camera poles in use.

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each for **CCTV CAMERA POLE, FURNISH ONLY,** which price shall be payment in full for furnishing and delivering the materials to State stock as specified herein and as directed by the Engineer.

## ACP2 CCTV CAMERA POLE, INSTALL ONLY

**DESCRIPTION**
This item shall consist retrieval from State Stock, loading, transporting and installing of a CCTV Camera Pole, under 55 feet M.H.

**TRANSPORTATION**
The Contractor shall transport and handle the CCTV camera poles in complete conformance with the manufacturer's recommendations.

**INSTALLATION**
The CCTV camera pole shall be installed in accordance with the CCTV camera pole manufacturer's installation instructions except as noted herein.

**BASIS OF PAYMENT**
This item shall be paid at the contract unit price each for **CCTV CAMERA POLE, INSTALL ONLY**, which shall be payment in full for the work as described herein.

## ACP3 CCTV CAMERA LOWERING SYSTEM, FURNISH ONLY

**DESCRIPTION**
This item shall consist of furnishing a CCTV camera lowering system as directed by the Engineer.

The camera lowering system shall be designed to support and lower a standard closed circuit television camera, lens, housing, PTZ mechanism, cabling, connectors and other supporting field components without damage or causing degradation of camera operations. The lowering system shall consist of a suspension contact unit, divided support arm, and a pole adapter for attachment to a pole top tenon, pole top junction box, and camera connection box. The divided support arm and receiver brackets shall be designed to self-align the contact unit with the pole center line during installation and insure the contact unit cannot twist under high wind conditions. Round support arms are not acceptable. The camera-lowering device shall withstand wind forces of 100mph with a 30 percent gust factor using a 1.65 safety factor. The lowering device manufacturer, upon request, shall furnish independent laboratory testing documents certifying adherence to the stated wind force criteria utilizing, as a minimum, effective projected area of the camera system to be attached.

The suspension contact unit shall have a load capacity 200 lbs. with a safety factor of 4 and with a locking mechanism between the fixed and moveable components of the lowering device. This latching mechanism shall securely hold the device and its mounted equipment and relieve their weight from the lowering cable. The fixed unit shall have a heavy duty cast tracking guide and means to allow latching in the same position each time. The contact unit housing shall be weatherproof with a gasket provided to seal the interior from dust and moisture.

The camera-lowering device shall be operated by use of a portable lowering tool. The tool shall consist of a lightweight metal frame and winch assembly with cable as described herein, a quick release cable connector, an adjustable safety clutch and a variable speed industrial duty electric drill motor. This tool shall be compatible with accessing the support cable through the hand hole of the pole. The lowering tool shall attach to the pole with one single bolt. The tool will support itself and the load assuring lowering operations and provide a means to prevent freewheeling when loaded.

All electrical and video coaxial connections between the fixed and lowerable portion of the contact block shall be protected from exposure to the weather by a waterproof seal to prevent degradation of the electrical contacts. The electrical connections between the fixed and movable lowering device components shall be designed to conduct high frequency data bits and one (1) volt peak-to-peak video signals as well as the power requirements for operation of dome environmental controls. All cables in all sections of the lowering device which are used for video signals shall be shielded coax.

The interface and locking components shall be made of stainless steel and or aluminum. All external components of the lowering device shall be made of corrosion resistant materials, powder coated, galvanized, or otherwise protected from the environment by industry-accepted coatings to withstand exposure to a corrosive environment.

The camera-lowering device shall be in production and in successful use for a highway application for a minimum of 3 years. The camera lowering device shall be the [MG]² Model CLDMG2-HYP-XXX or approved equal.

**BASIS OF PAYMENT**
This item shall be paid at the contract unit price each for a **CCTV CAMERA LOWERING SYSTEM**, **FURNISH ONLY**, which shall be payment in full for the work as described herein.

## ACP4 CCTV CAMERA LOWERING SYSTEM, INSTALL ONLY

**DESCRIPTION**

This item shall consist of retrieving from State stock, transporting, assembling and installing a CCTV camera lowering system, specified in Pay Item ACP3, for a completely operational system, as directed by the Engineer.

**BASIS OF PAYMENT**

This item shall be paid at the contract unit price each for a **CCTV CAMERA LOWERING SYSTEM**, **INSTALL ONLY**, which shall be payment in full for the work as described herein.

## ACP5 CCTV CAMERA MOUNT FOR LIGHT TOWER, RETROFIT

**DESCRIPTION**

This item shall consist of furnishing, retrofitting at necessary, and installing a CCTV camera mount on the tower ring, one fiber transmitter in an existing box at the base of the tower, one matching fiber receiver at a remote location, and all wiring from the camera to the fiber transmitter, as directed by the Engineer.

Modifications to the tower ring lowering assembly are not included in this item and shall be coordinated with the State's Electrical Maintenance Contractor.

The camera mount shall be designed to support and lower a standard closed circuit television camera, lens, housing, PTZ mechanism, cabling, connectors and other supporting field components without damage or causing degradation of camera operations.

**BASIS OF PAYMENT**

This item shall be paid at the contract unit price each for furnishing and installing a **CCTV CAMERA MOUNT FOR LIGHT TOWER, RETROFIT,** which shall be payment in full for the work as described herein.

## ACT1 CCTV CAMERA TRANSFORMER BASE, FURNISH ONLY

**DESCRIPTION**

This item shall consist of furnishing and delivering to State Stock a CCTV camera transformer base complete with all mounting as manufactured by Union Metal Inc., or as approved by the Engineer, identical to the existing CCTV camera transformer base in use.

**BASIS OF PAYMENT**

This item shall be paid at the contract unit price each for **CCTV CAMERA TRANSFORMER BASE, FURNISH ONLY**, which shall be payment in full for the work as described herein.

## ACT2 CCTV CAMERA TRANSFORMER BASE, INSTALL ONLY

**DESCRIPTION**

This item shall consist of the removal and salvage of the damaged/obsolete unit and the retrieval from State Stock, loading, transporting and installing of a CCTV Camera Transformer Base.

**TRANSPORTATION**

The Contractor shall transport and handle the CCTV camera transformer base in complete conformance with the manufacturer's recommendations.

**INSTALLATION**

The CCTV camera transformer base shall be installed in accordance with the CCTV camera transformer base manufacturer's installation instructions except as noted herein.

**BASIS OF PAYMENT**
This item shall be paid at the contract unit price each for **CCTV CAMERA TRANSFORMER BASE, INSTALL ONLY**, which shall be payment in full for the work as described herein.

## AGW1 GROUP WASHING OF SWING GATE ARMS AND AUXILIARY SIGNS

**DESCRIPTION**

This item shall consist of group washing the swing gate arms, chevrons, auxiliary and gore signs of each REVLAC and RACS ramps, including traffic control and protection, as specified herein and as directed by the Engineer. The gate number decals shall be cleaned and replaced, if damaged or missing. No additional payment will be made for traffic control and protection for the group washing.

**WASHING PROCEDURE**

Washing shall be performed with a pressure washer and process and cleaning solutions recommended by the reflective sheeting manufacturer. Washing shall not take place when the temperatures are expected to drop below freezing. Residual cleaning solution shall not be left on the pavement after the cleaning operation. Any cleaning solution shall be removed before traffic is allowed to travel on the pavement.

**BASIS OF PAYMENT**

This work shall be paid at the contract unit price per ramp for **GROUP WASHING OF SWING GATE ARMS AND AUXILIARY SIGNS** of the location specified, which price shall be payment in full for the work as specified herein and as directed by the Engineer.

## ALD1 LED CHEVRON SIGN, FURNISH ONLY

**DESCRIPTION**
This item shall consist of furnishing and delivering to State stock a LED chevron sign as manufactured by National Sign & Signal Company, reference National Sign Drawing No. B5450-592LED or as approved by the Engineer, compatible to the existing fiber optic chevron signs in use complete with heaters. The signs shall have built in thermostats as have the existing fiber optic chevrons.

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each for **LED CHEVRON SIGN, FURNISH ONLY,** which price shall be payment in full for furnishing and delivering the materials to State stock as specified herein and as directed by the Engineer.

## ALD2 LED AUXILIARY SIGN, FURNISH ONLY

**DESCRIPTION**
This item shall consist of furnishing and delivering to State stock a LED auxiliary sign as manufactured by National Sign & Signal Company compatible to the existing fiber optic auxiliary signs in use complete with heaters. The auxiliary sign shall be of the following type as directed by the Engineer:

| Type of Sign | National Sign Drawing No |
|---|---|
| "GATES CLOSING" | B5447-589LED |
| "STAY IN YOUR LANE" | B5448-590LED |
| red "X" | |

The LED auxiliary sign shall include thermostats to control the heaters.

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each for **LED AUXILIARY SIGN, FURNISH ONLY,** which price shall be payment in full for furnishing and delivering the materials to State stock as specified herein and as directed by the Engineer.

## ALD3 LED LANE USAGE SIGN, FURNISH ONLY

**DESCRIPTION**
This item shall consist of furnishing and delivering to State stock a LED Lane Usage sign compatible to the existing lane usage signs in use complete.

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each for **LED LANE USAGE SIGN, FURNISH ONLY,** which price shall be payment in full for furnishing and delivering the materials to State stock as specified herein and as directed by the Engineer.

## ALD4 LED OR FIBER OPTIC SIGN, INSTALL ONLY

**DESCRIPTION**
This item shall consist of the removal and salvage of the damaged/obsolete unit and the retrieval from State Stock, loading, transporting and installing a LED or fiber optic sign. This item does not apply to Pay Item ALD5 herein.

**TRANSPORTATION**
The Contractor shall transport and handle the fiber optic or LED signs in complete conformance with the manufacturer's recommendations.

**INSTALLATION**
The fiber optic or LED sign shall be installed in accordance with the sign manufacturer's installation instructions except as noted herein.

**BASIS OF PAYMENT**
This item shall be paid at the contract unit price each for **FIBER OPTIC OR LED SIGN, INSTALL ONLY,** which shall be payment in full for the work as described herein.

## ALD5 LED GORE SIGN, FURNISH ONLY

**DESCRIPTION**
This work shall consist of furnishing and delivering to storage a LED gore sign as described herein. The LED shall be fully operationally equivalent to the existing fiber optic gore sign.

**VENDORS**
The LED system (sign, controller, related appurtenances) shall be manufactured by or approved equal:

| | |
|---|---|
| Daktronics, Inc. | 800-843-5843 |
| Skyline Products: | 800-759-9046 |
| National Sign | 269-963-2865 |

**PAINT**
Paint for the sign front and mask shall be a fluoropolymer-based coating system containing KYNAR 500 resin or equivalent.

**DISPLAYS**

The display shall be provided, utilizing 26mm diameter pixels, each consisting of identical clusters of LED's as per the requirements stated herein.

The signs shall have sufficient borders on all four sides for display clarity and background contrast, and shall be legible from a distance of 300 feet, within a minimum 17 degree cone of vision on each side of the centerline perpendicular to the width of the sign.

The minimum sign luminance shall be 4300 cd/sq m over the range of 8.5 degrees right and left of the vertical geometric center of the sign and 8.5 degrees below the horizontal geometric center of the sign.

All LED's shall conform to the following minimum requirements:

LED's shall be un-tinted, non-diffused, high-output, solid state lamps utilizing aluminum indium gallium phosphide (AlInGaP) LED technology. These lamps shall be as produced by Hewlett-Packard or approved equal and shall be fully interchangeable.

The MTBF at an ambient temperature of +85 degrees Celsius shall be a minimum of 500,000 hours. LED's shall have an operating temperature range of -13 to +185 degrees Fahrenheit (-25 to +85 Celsius).

LED's shall be of the size T-1 3/4 (5 mm).

Normalized intensity of an LED at an angle of 10 degrees off the center axis shall be no less than 50% of the normalized intensity at an off-axis angle of 0 degrees.

**PIXELS**

LED's shall be mounted in 26mm diameter pixels, each one consisting of 4 LED's.

Pixels shall be mounted on a printed circuit board, and shall be arranged into a seven (7) pixel high by five (5) pixel wide matrix. Characters formed by the VMS displays shall have a minimum of seven (7) pixels in height. The number of pixels making up the character width shall vary by character and shall be in accordance with the characters described herein. The pixel pitch, or center-to-center spacing, shall produce a character 18. in height (+/- 0.5%).

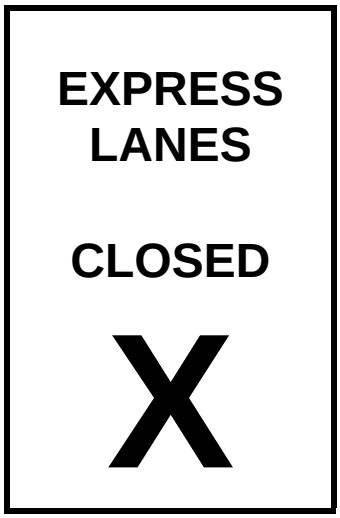
The LED printed circuit board shall be double-sided and shall be plated on both sides with a minimum of .002 inches of copper. The cathode pads shall be located on both the front and back sides of the board. Each cathode lead trace pad shall be a minimum of 0.40 square inches in size.

The LED printed circuit boards shall be coated on their front and back sides with a moisture-resistant acrylic conformal coating. The coating shall have a minimum cured thickness of 0.003 inches, except around the front of each LED pixel, where the coating shall be a minimum of 0.006 inches thick. Each pixel shall be protected from normal handling damage by a circular polycarbonate plastic ring that clips onto the printed circuit board and surrounds the LED's. The ring shall be 0.5 to 0.6 inches in height and have a minimum wall thickness of 0.050 inches.

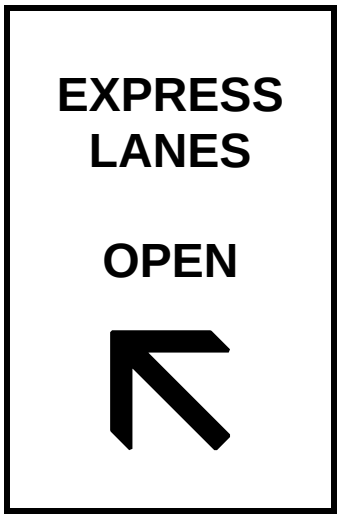
Each pixel printed circuit board shall attach mechanically to an aluminum module panel using standoffs and wing-nut fasteners. Each printed circuit board shall be removable from its module using simple hand tools or no hand tools. The front of the module panel shall be painted flat black.

Pixels shall have automatically variable brightness capabilities. Sign shall only operate at full brightness on cloudless days with full sunshine.

Pixels shall operate with no more that 20 mA of current at full intensity.




**Ramp Closed**




**Ramp Open**

| **Dimensions** | |
|---|---|
| Sign Height | 47” |
| Sign Width | 40” |
| Height of **X** | 30” |
| Character Height | 6” |
| *All dimensions are approximate* | |

| **LED Colors** | |
|---|---|
| Express Lanes | Amber |
| Closed | Red |
| X | Red |
| Open | Green |
| Arrow | Green |

**EXTERIOR HOUSING**

Sign housings shall be constructed of aluminum, alloy 3003-H14, and shall not be less than 1/8 inch thick. Seams shall be continuously welded except for the sign face. Framing structural shapes shall be constructed of aluminum, alloy 6061-T6. Non-corrosive materials shall be used where possible and corrosion protection shall be provided between dissimilar metals. Sign cases shall be cleaned and deoxidized after welding.

The enclosure shall be thoroughly cleaned and then neutralized for priming. The housing shall then be treated with a phosphate coating solution and sealed as per Military Specification MIL-C-5541. The surface shall be prepared for priming per the primer manufacturer's recommended pretreatment procedure. A zincchromate primer shall be applied, 34 mills thick, followed by a top coat of epoxy-mastic based flat matte black paint. The primer and paint shall be compatible products from the same manufacturer.

Sign face shall be designed and developed in a manner that reduces or eliminates reflections from headlights or sunlight. Signs shall have ICYNAR 500 or equivalent polycarbonate sign face coverings. Coverings shall be weather tight, ultraviolet protected, and non-diffusing, with a thickness of 1/4 inch. Polycarbonate sign face shall be covered with a 0.040 inch minimum thickness aluminum mask. Aluminum mask shall provide openings directly in front of each pixel. Pixel openings shall be of sufficient size so as to not interfere with LED light output. Sign face shall be designed to minimize bowing.

Sign housing, windows, framing and mounting members shall be designed to withstand a wind velocity of 90 mph with a gust factor of 30 percent in accordance with AASHTO's "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals" and certified by a registered Professional Structural Engineer.

Signs shall be constructed to present a clean, neat appearance; the equipment located therein shall be protected from moisture, dust, dirt and corrosion. Sign enclosures shall contain small weep holes for draining moisture accumulating in the signs from condensation. Weep holes shall be designed so as to protect against insect entrance.

Lifting eyes or other equivalent components shall be provided for moving and mounting signs. The sign housing shall be designed such that the sign can be shipped and temporarily stored without damage or undue stresses prior to installation. The sign shall be provided with a temporary storage support frame that will permit the storage of the sign in an above-ground vertical position without damage to the sign housing.

**POWER SUPPLIES**

Power supplies shall operate from 208 VAC power. The LED displays shall be operated at low internal DC voltage not exceeding 24 VDC. Power supplies shall be solid-state electronic switching regulated output. Two supplies shall be provided for each 1/3 of the display. Power supplies shall be wired in redundant parallel configuration for each section and shall provide equal amounts of current to each section. Power supplies shall be rated such that if one supply fails, the other can operate the entire LED section under full load conditions. Power supplies shall operate from -2 to +140 degrees F (-30 to +60 C).

Power supplies shall be short-circuit protected by DC power off and shall reset automatically after 5 seconds of AC power off. Power supplies shall also be short-circuit protected by a minimum overload allowance of 105% and have an efficiency rating of at least 75%. Power supply shall be UL listed.

Sign controller shall be capable of sensing the failure of each individual power supply. When one of the power supplies in a group has failed, the status of each supply shall be clearly displayed on the control computer screen.

**TERMINAL BLOCKS AND CONNECTORS**

Screw type terminal blocks and crimp-on spade terminals shall be used for all wire connections except plug connections. Telephone type knife connectors are not acceptable.

**LIGHTNING PROTECTION**

Surrestor SPA-300 or approved equal shall be provided on all external power lines.

**TESTING**

The Contractor shall deliver a sample of the character module to be used in the proposed sign. The module shall be capable of being turned fully on and fully off with all LEDs operating at full design brightness. A sample of the sign face material to be used, attached at the design distance from the character module, shall be included. If any deviations from these Special Provisions are discovered, the sample will be returned to the Contractor for modification, and resubmitted for testing.

**SIGN PERFORMANCE TESTING**

The signs being installed under this project shall be tested for operational completeness. Testing shall be performed in the presence of the Engineer and/or his/her designated representative and shall consist of a pre-test check-out and a systems Sixty-day (60) Performance Test.

The Contractor shall state, in writing, that the sign is complete and ready for local testing. Within five (5) days upon receiving his notification the Authority shall begin the Pre-test Check-out.

Pre-test Check-out:

The Engineer and/or his/her representative shall thoroughly exercise the system, All hardware, and performance functions, including the maintenance and trouble shooting, shall be individually checked for compliance with the specifications.

Any portion of the project which does not meet these specifications shall be corrected by the Contractor and rechecked by the Engineer. The Contractor shall demonstrate that the field equipment can meet the local performance requirements.

Sign Sixty-day (60) Performance Test:

Following successful completion of the Pre-test Check-out, and the correction, repair and/or replacement of identified deficiencies, the Contractor shall demonstrate that the system satisfies the specified operational requirements as an integrated unit by operating the system continuously for ten consecutive days without malfunction or failure.

The Contractor shall notify the Authority, in writing, that the Sign Sixty-day (60) Performance Test will begin on a date and time mutually acceptable to all parties.

During the Sign Sixty-day (60) Performance Test, the Engineer shall exercise the system and document the performance of all specified features and any other events which could be expected to occur in an operational Traffic Management System. During the system exercise, the Sign Sixty-day Performance test may be suspended or terminated by the Engineer or the Contractor. Suspension is defined as halting the test progress, the Contractor taking necessary corrective action, and the test being resumed from the point of suspension. Termination is defined as halting the test. In the event of termination, the Contractor shall take necessary corrective action, and the test shall be restarted from the beginning. Any corrective action shall be by mutual agreement between the Contractor and the Engineer.

The Sign Sixty-day (60) Performance Test may be suspended for the following reasons, including but not limited to:

Failure or interference due to conditions beyond the control of the Contractor, such as vandalism, traffic accidents, power failures and similar occurrences.

Failure of any support or diagnostic equipment necessary to successfully test the system.

The Sign Sixty-day (60) Performance Test may be terminated for the following reasons, including but not limited to:

Failure of any hardware or performance item to meet these Special Provisions.

Failure of any pixel.

Failure of more than 1% of the total number of LEDs in the sign at the end of the test.

Failure of any pixel to turn off or turn on.

The appearance of any problem which, in the opinion of the State, has a significant effect upon the reliability, safety or operation of the system.

**CERTIFICATION**
The Contractor shall furnish supplier documentation and certification for all individual components in the finished product, showing that the component manufacturer has established an MTBF rate and what the rate is. Payment will not be made for any sign installed without component certification.

The Contractor shall furnish the following submittal for approval before the delivery of any sign:

LED manufacturer's data sheet, stating the make and model of LED to be used, the luminance of the LED at a stated current, the maximum/minimum operating temperatures and other pertinent information.

Pixel Design - Include a detail drawing of the physical layout of the pixel, including the pixel size, number of LEDs, board detail, operating voltage and current, method of weather protection, orientation of the individual LEDs and the calculated luminance at the following points:

10° right and left of the vertical geometric center.

90° perpendicular to the pixel.

10° below the horizontal geometric center of the sign.

The module design, including mounting details.

The cabinet design and installation details of equipment in the cabinet.

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each for **LED GORE SIGN, FURNISH ONLY,** which price shall be payment in full for furnishing and delivering the materials to State stock as specified herein and as directed by the Engineer.

## ALD6 LED GORE SIGN, INSTALL ONLY

**DESCRIPTION**
This item shall consist of the removal and salvage of the damaged/obsolete unit and the retrieval from State Stock, loading, transporting and installing a LED Gore Sign.

**INSPECTION AND ACCEPTANCE**
The Contractor shall examine the sign in the presence of the Engineer and after accepting they shall be held responsible for preservation of the condition of each sign, as it was at the time of acceptance, until the Final Acceptance Inspection.

**TRANSPORTATION**
The Contractor shall transport and handle the signs in complete conformance with the manufacturer's recommendations.

**INSTALLATION**
The sign shall be installed in accordance with the sign manufacturer's installation instructions except as noted herein.

**BASIS OF PAYMENT**
This item shall be paid at the contract unit price each for, **LED GORE SIGN, INSTALL ONLY** which shall be payment in full for the work as described herein.

## ARG1-4 RAMP GATE ASSEMBLY, FURNISH ONLY

**DESCRIPTION**

This item shall consist of the design, fabrication, procurement, delivery and vendor installation support for a manual ramp gate assembly, and the design of its proper concrete foundation. The ramp gate assembly is used to alert drivers that the ramp is closed, or is being closed, and to physically deny access to the ramps. Each ramp gate assembly shall consist of a crash rated, fiberglass reflectorized vertical arm attached to a mechanical pivoting device, a steel support frame, a structural weldment to support the drive components and transfer the loads from the gate arm to the foundation, two steel arm receivers (bollards) structural components of the overall gate system to receive the arm in the closed position, and a weather resistant, heavy-duty padlock.

**DETAIL SPECIFICATIONS**:

1. GENERAL REQUIREMENTS:

1.1 The Contractor, Ramp Gate Vendor and Engineer shall meet to discuss the submittal content and the complete ramp gate assembly proposed prior to submittal. Complete submittal information, as required, shall be submitted for approval to the Engineer per contract requirements as stated herein. Revised resubmittal information shall be resubmitted with 14 days of receipt of Engineer comments.

1.2 The ramp gates shall be complete operational units with all specified features and construction, and shall be delivered in accordance with an established schedule, as specified by the Engineer. Unless otherwise indicated, all ramp gate assemblies shall be of uniform design and construction except for gate arm length. For each specific ramp gate assembly, the gate arm length, and orientation of the unit shall be as generally indicated by the Engineer.

1.3 The ramp gate assembly shall be designed to operate outdoors, in the climatic conditions of the City of Chicago, within a temperature range of -20°F to +110°F. Ramp gate operation shall be unaffected by other environmental conditions such as dirt, dust, wind, rain, snow, salt spray, ice, or sleet.

1.4 The ramp gate assembly shall be designed to overcome, and operate as described herein, with a wind load of 80 mph plus a 1.3 gust factor (approximately 22 psf) and a layer of ice .25 inches thick covering the entire gate arm and a cyclical gusting condition of 40 mph in both the deployed and stowed positions.

1.5 The barrier shall be designed to impede a 2000 lbs vehicle at 25 mph and hold the vehicle to within 10 feet of impact. A maximum deceleration of 10 Gs shall be experienced by the rear bumper of the vehicle on impact. The barrier shall be designed to increase this impact strength requirement with an additional field retrofit to achieve a barrier solution for a 4000lbs vehicle traveling 40mph. A maximum deceleration of 10 Gs shall be experienced by the rear bumper of the vehicle on impact. Manufacturer shall provide a complete technical description of the stopping media and its retrofit costs in the submittal documents.

1.6 Each ramp gate assembly shall be equipped with all features and elements recommended by the Vendor to achieve performance as specified or for proper operation of the unit under the specified conditions and indicated arrangement, whether not specifically called out or specified.

2. MATERIALS:
All materials and all components used in the ramp gate construction and appurtenances shall be new, of good workmanship and quality. Use of salvaged or short-dimension material, even though new, is unacceptable. The requirements of Section 106 of the Standard Specifications for Road and Bridge Construction shall also apply. Please note the requirements of domestically manufactured components as specified in the above-referenced specification.

3. VENDOR QUALIFICATIONS

3.1 The ramp gate assembly shall be the product of a Vendor who is an established and qualified original equipment manufacturer. The Vendor shall have supplied similar equipment which is still in use on no fewer than 10 installations with a minimum of 150 Ramp Gate Units in the United States of America. The units shall be an adaptation of a proven, standard design of the Ramp Gate Vendor, and shall be a generically similar model which has been in production and used on federally-funded highway projects for at least five years. The Vendor shall have been in the business of the design and fabrication of like equipment for not less than ten (10) years.

3.2 The Vendor shall certify that a stock of replacement parts will be maintained by the company for a period of at least ten years from date of purchase of the units.

3.3 The Vendor shall have permanent full-time, in-house engineering staff having experience in the design, manufacture, and operation of ramp gate equipment. The Vendor shall have established space, equipment, tooling, personnel, and resources already in place at the time of bid to produce and support the ramp gate equipment in the quantities indicated and within the specified delivery schedule.

3.4 The Contractor shall submit information to the Engineer to fully document the required qualifications noted above, together with general product data sufficient to demonstrate not only the qualifications of the Vendor, but also the general conformance of the Vendor's product to the specified equipment type and history. In addition, a reference list of the Vendor's project installation sites, agency responsible for the order and a contact name and telephone number shall be provided.

3.5 Concept Drawings of the Proposed Equipment shall be submitted to the Engineer, including future proposed mechanical and electrical diagrams, in sufficient detail as to fully convey the intent and function of the equipment to be provided and the general conformance with the specifications.

4. FOUNDATION:
Specific detailed information/coordination shall be provided to the Engineer as necessary for the support frame and receiver arm foundations to meet the required system loads as part of the complete assembly. The specific cast in place concrete foundation information (diameter, depth, reinforcing, anchor bolts, anchor bolt pattern, etc.) shall be provided in the submittal documents. All calculations shall be submitted with the documentation. The installation of the foundation is paid under pay item ARG5.

5. SUPPORT FRAME:

5.1 The frames shall be rigid structural weldments designed to withstand all operating loads imposed upon them by the ramp gates and shall transfer the loads into the proposed concrete foundation via the anchor bolts. The frames shall be stress relieved after welding and prior to final assembly. The support frame shall be designed to resist the loads described herein as part of the complete assembly.

5.2 The support frame for the ramp gate assembly shall be fabricated from ASTM A36 structural steel shapes and plates using standard structural shapes to the maximum extent possible. All steel used in frame fabrication, including the component mounting plates, shall be at least 0.375 inches thick.

5.3 The frames shall be drilled to match the anchor bolt patterns of the proposed foundation.

5.4 Ease all exposed edges to a minimum radius of 1/32 inch. Corners, seams, and joints shall be welded continuously and shall comply with requirements specified in the Fabrication/Welding Section. Welding flux shall be removed immediately and exposed welds and surfaces shall be ground smooth and blended so that no roughness shows after finishing. Joints that may be exposed to the weather shall be fabricated to prevent the accumulation of water, dirt, and ice.

5.5 The frames shall be complete with all mounting requirements for installation of the gate, crank arm, and future gate actuators. Mounting plates shall be accurately drilled to match the components mounted. Torch cut holes are not acceptable. The frames shall be hot dip galvanized after fabrication.

5.6 The lifting attachments shall be located for stable lifting, and shall be either stainless steel or galvanized.

5.7 The lifting lugs shall be removed after installation and salvaged to State Stock.

5.8 Removable stainless steel, watertight and gasketed plugs shall be provided with each unit for installation upon removal of the lifting attachments.

6. ARM:

6.1 Gate arms shall consist of an assembly of, standardized design, standard length, connectors, and brackets, with an engineered non-metallic fiber reinforced epoxy pultrusion.

6.2 The arm shall incorporate energy absorbing bands to minimize the negative effects of rapid deceleration of the vehicle.

6.3 The impact zone, centerline of gate, shall be between 16 and 24 inches. Exact height shall be coordinated with the Engineer.

6.4 Each assembled gate arm shall be designed to resist the loads described herein as part of the complete assembly.

6.5 Stainless steel nuts, bolts and washers shall be a minimum Type A304. One washer shall be placed under the bolt head, and a lock washer shall be placed under the nut. The nuts and bolts shall be hand tightened until snug, and then tightened with a hand wrench a minimum of ½ turn of the nut.

6.6 The gate arm in the upright (open) or deployed (closed) position shall be secured with a padlock.

7. ARM RECEIVER (BOLLARD):

The arm receiver shall be an integral part of the overall design of the barrier system. Detailed installation requirements, including foundation requirements as outlined for the support frame, shall be provided for the arm receiver. The arm receiver shall be designed to resist the loads as

described herein as part of the complete assembly. The arm receiver shall be comprised of similar materials and requirements as the support frame, and coordinated with the requirements of the gate. The arm receivers (bollards) shall allow for the ramp gate to be padlocked in the open or closed position.

8. REFLECTIVE MATERIAL FOR GATE ARMS:

8.1 Both sides of each gate arm shall be covered with retro reflective sheeting or similar markings as approved by the engineer. All sheeting requirements shall meet or exceed the standards as defined in AASHTO M 268 Retro reflective Sheeting for Traffic Control.

8.2 The sheeting shall be a minimum of Type III High Intensity with pre-coated pressure sensitive adhesive (Class 1) diagonal alternating red and silver white stripes, angling down at 45° from the left to the right. The sheeting shall be oriented to take advantage of the directional reflectivity of the material as defined by the supplier of the reflective sheeting.

8.3 The material for this application shall be “Scotchlite” Reflective Sheeting Diamond Grade Series 3970G as manufactured by 3M, or approved equal. The sheeting shall be pre-striped of appropriate size and width to match the application surface. The retro-reflective sheeting shall be installed strictly according to the manufacturer’s instructions. Special attention to surface preparation and mounting of sheeting for proper bonding and adhesion shall be rigidly followed.

9. FUTURE MANUAL CRANK ARM ASSEMBLY:

9.1 The crank arm assembly will not be included under this pay item, however, specific Vendor information, as indicated below, for the future retrofit of this device may be requested by the Engineer. It shall be designed such that barrier deployment time will not exceed a maximum of 30 seconds to close the road, and 30 seconds to open. No tools shall be required to move the gate.

9.2 The crank arm assembly shall be padlockable to prevent the unauthorized operation of the unit. The crank arm assembly shall be coordinated with the proposed future motor actuator to minimize the modification required for the future installation of the motor actuator. Submittal information shall include all requirements for the modification from a manual to electric actuated gate. If modified to electric actuation, the gate shall have the ability to be manually operated with minimal effort. The manual hand crank shall be coordinated with the requirements of the future motor actuator drive as indicated below.

10. FUTURE ACTUATOR DRIVE AND MOTOR INFORMATION:

11.1 The motor actuator drive will not be included under this pay item, however, specific Vendor information, as indicated below, for the future retrofit of this device may be requested by the Engineer, under this pay item.

11.2 The proposed actuator drive motor shall be produced by a manufacturer who regularly engages in the design, manufacture, assembly and production of motor operated actuators of the size and type required for not less than five years.

11.3 The electric ramp gate actuator shall include a motor, operator unit gearing, limit switch gearing, limit switches, torque switches, stem nut, de-clutch lever, and auxiliary hand wheel, reversing motor starter and space heaters, as a self-contained unit.

11.4 The ramp gate actuator motor and all electrical enclosures shall be NEMA 4 for the ramp gate.

The motor shall be 120 volts, single phase; 60 hertz specifically designed for actuator service and shall be of high starting torque, totally enclosed, non-ventilated construction. Motor leads shall be brought into the control compartment or limit switch compartment for external connections.

11.5 The motor shall be of sufficient size to open or close the ramp gate from any position and under any condition of operation the ramp gate may be subjected to. The motor duty rating shall be sufficient for one complete cycle (open-close-open, or reverse) without exceeding its temperature rating and shall not be less than 30 minutes continuous. The motor shall be prelubricated and all bearings shall be of the anti-friction type. The motor speed shall not exceed 188.5 radian per second (1,800 rpm).

11.6 Position limit switches and associated gearing shall be an integral part of the ramp gate actuator. Limit switch gearing shall be of the intermittent type, made of bronze or stainless steel, grease-lubricated, and enclosed in its own gear case to prevent dirt and foreign matter from entering the gear train. The limit switches shall be geared to the driving mechanism and in step at all times whether in motor or manual operation. The trip points of the switches shall be adjustable over the entire range of the ramp gate travel. They shall not be subject to breakage or slippage due to over-travel. Limit switches shall be of the heavy duty, open contact type with a rotary wiping action.

11.7 Each ramp gate actuator shall be equipped with a double torque switch which is responsive to loads encountered in both the opening and closing direction. Each side of the switch shall have a graduated dial and shall be adjustable. The torque switch shall operate during the complete ramp gate cycle without the use of auxiliary relays, linkages, latches, or other devices. The torque switch shall be designed to shut off the actuator motor in the event that abnormally high torque is realized in either direction of travel. The torque switch is utilized as a protective device in ramp gate applications requiring position seating.

11.8 A hand wheel shall be provided for manual operation with an arrow to indicate "open" rotation. The hand wheel shall not rotate during motor operation. A fused motor shall not prevent manual operation. When in manual operating position, the unit will remain in this position until the motor is energized. The actuator will automatically return to electric operation when the motor is energized. The actuator will remain in motor position until hand wheel operation is desired. Movement from motor operation to hand wheel operation is accomplished by a positive de-clutching lever which disengages the motor and related gearing mechanically but not electrically with no damages to clutch a gear mechanism. It shall not be possible for the unit to be simultaneously in manual and motor operation.

11.9 Heavy duty industrial type control station, with local-off-remote selector switch, open-close-stop pushbuttons and open-closed indicating lights shall be provided. Terminal blocks shall be provided for all external wiring connections. Each terminal shall be properly marked.

11.10 Space heaters shall be provided in the enclosure or limit switch enclosure. The heaters shall be 120V, 60 Hz, with sufficient capacity to prevent condensation in the enclosures.

11.11 The power input to the actuator shall be 120V, single phase, 60 Hertz. The ratings, characteristics, materials, and construction of electric motors shall be in accordance with the latest applicable standards of ANSI, IEEE, and NEMA. The manufacturer’s certification of the preceding shall be provided as a part of the submittal data.

11.12 Motor bearings shall be designed to withstand all axial thrust from the driven equipment.

11.13 Submittal data shall include complete manufacturer’s specifications and descriptive bulletins for all equipment, size, capacity, description and make of motor. Motor data shall include:

Manufacturer
Nameplate Rated Horsepower
Rated Voltage
Full Load RPM
Full Load Current
NEMA Design Letter
NEC Code Letter or Inrush Current
Insulation Class
Service Factor
Recommended Starting Restrictions, including Allowable Starts per Hour
Design Load Calculations

Submittal information shall include all necessary information including but not limited to the specific actuator to be utilized in the future, load requirements and calculations, specific mounting details, specific material and equipment required for the future installation retrofit, electrical wiring diagrams, and certification that the proposed actuator will properly work as intended.

12. HOT DIPPED GALVANIZING:
Contractor shall prepare structural component surfaces in accordance with SSPC-SP6 - Commercial Blast Cleaning. Zinc used for hot-dip galvanizing coating shall conform to the Standard Specifications for Slab Zinc (Spelter) ASTM Designation B6 and shall be at least equal to the grade designated as "Prime Western". Thickness of coatings shall conform to ASTM Specifications A123, A153, and A385, as applicable for items coated. Quality of galvanizing shall be rigidly controlled and it shall be understood that any defects as mentioned below shall be just grounds for rejection. Galvanized steel shall have no bare spots unless small and suitable for patching, pimples showing excessive contamination, flux, ash inclusions, or blisters. Where cutting existing galvanized metal work or attaching to existing galvanized metal work, such as by welding, the connection or bore edges shall be cold galvanized.

13. FABRICATION/WELDING:
Fabricate all members as outlined in AISC
Fabricating tolerances for finished parts shall comply with AISC Code of Standard of Practice
Fabricate items with joints tightly fitted and secured
Continuously seal joined members by continuous welds
Perform welding in accordance with AWS D1.1
Grind exposed joints flush and smooth with adjacent finish surface
Make exposed joints butt tight, flush, and hairline
Ease exposed edges to small uniform radius

All fabrication and welding of structural shapes and components shall comply with the methods and procedures defined in the AWS and as modified by the AASHTO Standard Specifications and Article 505 of the Standard Specifications for Road and Bridge Construction.

14. SHIPPING AND STORAGE REQUIREMENTS:

14.1 Each ramp gate assembly shall be shipped as a complete unit. The complete unit shall be crated to protect the unit from being scratched, marred, chipped, dented or damaged during shipment. Gate arms and the associated brackets, connectors, and hardware shall not be assembled to the ramp gate, but shall be packed, crated, and marked for shipment with the units being shipped. No other mechanical assembly shall be required to install each complete ramp gate.

14.2 Cost of delivery, receiving, handling and storing as necessary for each of the ramp gate unit to an individual location within District 1, as approved by the Engineer, shall be included in the bid price of the respective ramp gate unit and no additional compensation shall be allowed. If installation is delayed, extended storing of the units shall be in State Stock. The units shall be delivered and unloaded to State Stock, at the direction of the Engineer.

14.3 As part of the submittal information, identification of the recommended storage and handling requirements for the units shall be provided. Any specific or additional items which are required for proper storage and handling of the units shall be identified and submitted to the Engineer for approval.

14.2 The Contractor shall be fully responsible for and maintain an accurate inventory of all ramp gate units from the time of the Contractor's and Engineer's acceptance of delivery through the final acceptance of the ramp gate.

15. RAMP GATE VENDOR'S TECHNICAL FIELD SERVICES:

15.1 The Ramp Gate Vendor shall provide the services of competent, technical field service personnel, acceptable to the Engineer, to provide on-site advisory support on site for the first gate installation, and if necessary for subsequent installations. Certification of installations of additional gates will be required as they are put into service, and may be done in coordinated groups, as approved by the Engineer.

15.2 Field personnel shall be technicians from the Ramp Gate Vendor's plant and shall be thoroughly familiar with the design, fabrication, and operation of the ramp gate equipment. All costs associated with the provision of these Vendor services shall be included in the bid price of the respective ramp gate unit and will not be paid for separately.

15.3 Recommended Vendor installation and field operational testing requirements shall be submitted to the Engineer for review and approval, prior to the start of the testing.

15.4 The Vendor shall provide or perform field modifications to the ramp gates as necessary to correct deficiencies that were undetected or uncorrected fabrication to achieve proper operation as specified.

15.5 The first production unit installed shall be field operational tested through its intended full operation in the presence of the Ramp Gate Vendor's representative and the Engineer, and with the Engineer's approval, shall be designated as the benchmark unit and the proper installation and operation of all subsequent units shall be judged based on this unit.

15.6 The Ramp Gate Vendor shall furnish the proper lubrication (including oil, grease, hydraulic fluid, etc.) required for testing, trouble shooting, and start-up. If lubrication must be drained for shipping or storage, the Ramp Gate Vendor shall furnish a fresh supply of lubrication for field installation.

15.7 All equipment adjustments, modifications, and/or installation revisions required, as a result of factors under the Ramp Gate Vendor's control, shall be recorded as a part of the field operational testing reports.

15.8 The field operational test reports shall be submitted to the Engineer after completion of the testing, on a ramp by ramp basis. Reports shall include certification, with signature of the Vendor field representative, that all ramp gates have been installed, tested, and modified as necessary, in accordance with the Ramp Gate Vendor's recommendations. A list shall be provided of the found and/or corrected deficiencies.

16. OPERATIONS AND MAINTENANCE:

The Ramp Gate Vendor shall submit the Vendor's maintenance instructions and procedures, with appropriate diagrams, to the Engineer for approval, prior to proceeding with the production fabrication of the units. As a minimum, the following information shall be provided:

Written instruction manuals, defining proper installation procedures and methods to install each unit to the Ramp Gate Vendor's requirements

Instructions for manual operation and hand cranking

Lubrication procedures

Instructions/information on the typical replacement procedure required for the ramp gate arm and associated components after a vehicle impact

Other routine maintenance procedures as necessary

17. MATERIAL SUBMITTAL REQUIREMENTS:
Under this pay item, prior to start of work, the Contractor shall submit the following:

Copy of Vendor standard guarantees and warranties

Complete shop drawings and details for all electrical and mechanical components

Material and component bulletins, performance data and certifications of compliance with these specifications for all mechanical and electrical devices, materials and components

Complete descriptions, illustrations, and wiring diagrams of the proposed future local controls

Welding details and procedures

Letter of intent to provide specified weld inspection reports

Structural design calculations, stamped by a Registered Structural/Professional Engineer, as applicable, of the State of Illinois (or having a reciprocal agreement with the State of Illinois for such registrations) for the foundations, gate arm, structural frame(s) and all load bearing or load transferring components

Letter of intent to provide manufacturer's representative during installation and to provide specified installation certification

Ramp Gate Vendor's recommended testing and installation requirements

Letter of intent to provide spare parts availability for 10 years and training of authorized repair agents

Letter of intent to provide four bound copies and one electronic (PDF) copy of operating and maintenance instructions and manuals, diagrams, parts lists, requirements and other information pertinent to equipment operation and future upgrades as indicated

Equipment drawings and erection drawings of adequate detail to provide the Engineer with all dimensions necessary to verify conformance to clearances and proper anchor bolt pattern for the foundation

Installation instructions and testing procedures

Recommended list of spare parts to be kept on hand

18. FINAL ACCEPTANCE:
Only after the ramp gate unit has been delivered, field operationally tested and results reviewed and accepted by the Engineer, may the Contractor request final acceptance of the work.

Other items which the Contractor must complete to the Department's satisfaction before final acceptance can be granted include but are not limited to, the following:

Manufacturer's published standard trade guarantee/warranty or written formal guarantee/warranty for a minimum of 6 months, whichever is greater, applicable to the Illinois Department of Transportation, from the date of final acceptance of the ramp gates

Certification that all equipment has been modified or adjusted based upon the benchmark unit

Bound copies and electronic version of operating and maintenance instructions and other submittal data. The data shall be compiled in 8½ x 11 inch format high quality heavy-weight, hard cover binders with piano-style metal hinges or in an alternate format approved by the Engineer. Large drawings and other materials which would be opened or removed for reading shall be provided with heavy-weight, clear plastic pouches within the binders. The number of binders shall be as required to hold all required material without over-filling. Various sections, as appropriate shall have suitable dividers. Each binder shall be labeled and provided with a table of contents.

Four sets of the data files shall be provided and also in electronic (pdf) format and each set shall include the following data:

Corrected, approved, final shop drawings and product data for all equipment and materials incorporated in the work

Operating and maintenance instructions, diagrams, parts lists, requirements and other information pertinent to equipment operation and maintenance

All data shall be presented in a neat and orderly fashion and be clearly legible. The table of contents, tabulations of set points, and other record & test data shall be typed. Sloppy, illegible, inaccurate, or incomplete data will not be accepted.

**METHOD OF MEASUREMENT**

This item shall be measured (counted) as each, of the specific type, as described herein.

**BASIS OF PAYMENT**

This item will be paid at the contract unit price each of the complete RAMP GATE ASSEMBLY, FURNISH ONLY, of the type indicated, delivered to the designated location, which price shall be payment in full for the work specified herein.

**ARG1 RAMP GATE ASSEMBLY, 23 FT., FURNISH ONLY**
**ARG2 RAMP GATE ASSEMBLY, 25 FT., FURNISH ONLY**
**ARG3 RAMP GATE ASSEMBLY, 27.5 FT., FURNISH ONLY**
**ARG4 RAMP GATE ASSEMBLY, 30 FT., FURNISH ONLY**

## ARG-5 RAMP GATE ASSEMBLY, INSTALL WITH CONCRETE FOUNDATION

**DESCRIPTION**

This item shall consist of furnishing and installing a concrete foundation per Vendor specifications and two sand module impact attenuators and bases, and installing a ramp gate assembly as a complete operable unit (furnished under Pay Item ARG1-4) upon the respective foundation at a location as indicated by the Engineer on various ramps within District 1. Ramp gate installations shall include but not be limited to furnishing all labor, material, and equipment required to install foundation, transfer ramp gate assemblies from storage to the job site including delivery from storage, receiving the ramp gates, unloading the ramp gates, inspection, security, protection, assembling the associated ramp gate components, setting and aligning the ramp gates to the foundation at the specified locations, furnishing and placing identification labels, Field Operational Testing and restoration of the site back to existing conditions.

Technical Field Support for installation assistance to the Contractor shall be provided by the Ramp Gate Vendor, and paid under pay item ARG1-4 Ramp Gate Assembly, Furnish Only.

**DETAIL SPECIFICATIONS**

1. SCHEDULE:

   1.1 The Contractor and Engineer shall determine the exact configuration and location of the gates installations. The Contractor shall document the specific ramp gate location/configuration installations and submit the information to the Engineer for verification and approval through a routine maintenance submittal.

   1.2 A specific schedule of installation of all of the proposed gates at the specific ramps shall be provided for Engineer's approval.

   1.3 The Contractor shall begin site preparation and foundation installation within 14 days of receipt of approved foundation design information and/or material.

   1.4 The Contractor shall begin installation of gates and appurtenances within 14 days of receipt of ramp gate material.

2. GENERAL REQUIREMENTS:

   2.1 The ramp gate assembly will be obtained as a separate pay item, as complete operational units with all specified features and construction. They will be delivered and stored in accordance with an established schedule, as specified in the Ramp Gate, Furnish Only pay item section. Unless otherwise indicated, all ramp gate assemblies will be of uniform design and construction except for gate arm length. For each specific ramp gate assembly, the gate arm length and orientation of the unit shall be as indicated by the Engineer.

   2.2 The specific cast in place concrete foundation information (diameter, depth, reinforcing, anchor bolts, anchor bolt pattern, etc.) as well as all submittal calculations shall be provided through the ramp gate Vendor.

   2.3 The Contractor shall supply required anchor bolts, nuts and washers, and other minor appurtenances as required for installation of the ramp gate assembly under this pay item.

3. MATERIALS:
   All materials and all components used in the installation of the ramp gate and associated equipment shall be new, of good workmanship and quality, and their application shall be in compliance with the recommendations of their suppliers, including the Ramp Gate Vendor. The requirements of Section 106 of the Standard Specifications shall also apply.

4. CONSTRUCTION REQUIREMENTS:

4.1 The ramp gates shall be field stored in accordance with manufacturer's recommendations until the installation.

4.2 Prior to installing the ramp gates, the Contractor shall verify the field conditions and exact positioning of the ramp gate with the Engineer.

4.3 The Contractor shall load, deliver, and unload the ramp gate at the respective ramp job site from State Stock.

4.4 The installment procedure and equipment to be utilized shall be approved by the Engineer prior to setting the first ramp gate. Each ramp gate shall be installed and tested in strict accordance with the Ramp Gate Vendor's installation and testing instructions, as described and paid under ARG1-4 Ramp Gate Assembly, Furnish Only.

4.5 Each ramp gate shall be installed level, plumb, and true, at the location determined by the Engineer. The Contractor shall check each location prior to installation with a rigid template which fits over the anchor bolts. The inspection shall include a check of the top of the level, for a smooth surface, and for the dimensional accuracy of the anchor bolt placement. The holes for the anchor bolts shall be the same size, pattern, and orientation as the base frame of the ramp gate unit. Any grinding, filling of concrete, shimming, anchor bolt realignment or replacement, or other actions or materials required to prepare the foundation for installing the ramp gates shall be included in the bid unit price for this pay item, and no additional compensation will be allowed.

4.6 Each ramp gate unit shall be installed with a double nut mounting arrangement or as required by the Ramp Gate Vendor and approved by the Engineer. The bottom supporting nut shall have a flat washer between the nut and the bottom of the frame. The top nut shall have a lock washer between the frame and the nut. The double nut mounting shall allow for the leveling of the unit to the specific requirements of each location.

4.7 Note that no grouting of the ramp gate bases will be permitted.

4.8 After setting and leveling the ramp gate at the specified location, torque the anchor bolt nuts, as recommended by the Ramp Gate Vendor or as required by ASTM A-325.

4.9 The gate arm shall be attached to the mounting bracket as recommended by the Ramp Gate Vendor.

4.10 Sand Module Impact Attenuators and bases (2), shall be furnished and installed for each bollard, under this pay item. If additional sand module impact attenuators are needed at certain locations, they shall be installed and paid under pay item ARS1, Sand Module Impact Attenuator and Base.

5. SITE RESTORATION:

Any site work disturbed by the Contractor's work shall be restored to the Engineer's satisfaction. All work shall be in accordance with the "Standard Specifications for Road and Bridge Construction" and costs shall be included in the unit bid price for this pay item.

6. TRAFFIC CONTROL:

6.1 The cost for traffic control and protection shall be included in the unit bid price for this pay item.

6.2 Traffic Control shall be in accordance with the applicable sections of the Standard Specifications for Road and Bridge Construction, the Supplemental Specifications and the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways.

6.3 The Contractor shall contact the District One Bureau of Traffic at least 72 hours in advance of beginning work.

7. IDENTIFICATION:

7.1 Under this pay item the Contractor shall furnish and install the identification labels on each ramp gate. The location of the labels shall be as directed by the Engineer.

7.2 Each ramp gate unit shall bear a unique, four to eight digit, alphanumeric, identification code based upon its location on the expressway as directed by the Engineer.

7.3 The letters and numerals shall be composed of individual, black series "D" as described in the Federal Highway Administration's "Standard Alphabets for Highway Signs", screened onto silver-white, pressure sensitive, reflective, 4 ½ inch by 4 inch sheeting as described under section T 602.01 "Reflective Sheeting" in the Illinois Department of Transportation's most recent publication of "Standard Specification for Traffic Control Items". Prior to application of the sheeting, the receiving surface shall be cleaned and dried as recommended by the supplier of the reflective sheeting.

8. FINAL ACCEPTANCE:

The install work shall be approved for payment only after the ramp gate has been field operationally tested and the work documentation reviewed and accepted by the Engineer.

**METHOD OF MEASUREMENT**
This item shall be measured (counted) as each, per ramp gate assembly installation, as fully operational, with work as indicated herein, as accepted by the Engineer.

**BASIS OF PAYMENT**
This item will be paid at the contract unit price each, of **RAMP GATE ASSEMBLY, INSTALL WITH CONCRETE FOUNDATION**, for furnishing and installing proper concrete foundation and sand impact attenuator and base per bollard, complete installation and testing of a ramp gate assembly, providing decal and install, test report submittal, and site restoration, which price shall be payment in full for the work specified herein.

## ARG6-9 RAMP GATE ARM, FURNISH ONLY

**DESCRIPTION**
This item shall consist of furnishing and delivering to State stock a replacement ramp gate arm for the ramp gate assemblies, specified in Pay Items ARG1-4. The arms shall be supplied by the OEM of the ramp gate assemblies.

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each for **RAMP GATE ARM, FURNISH ONLY,** of the type indicated, which price shall be payment in full for furnishing and delivering the materials to State stock as specified herein and as directed by the Engineer.

**ARG6 RAMP GATE ARM, 23 FT., FURNISH ONLY**
**ARG7 RAMP GATE ARM, 25 FT., FURNISH ONLY**
**ARG8 RAMP GATE ARM, 27.5 FT., FURNISH ONLY**
**ARG9 RAMP GATE ARM, 30 FT., FURNISH ONLY**

## ARM1 RAMP SAND MODULE IMPACT ATTENUATOR AND BASE

**DESCRIPTION**
This work shall consist of furnishing, erecting and installing a sand module impact attenuator and its base at the locations where additional attenuators are needed at the ramp gates, as directed by the Engineer.

**MATERIALS**
Materials shall meet the requirements of the impact attenuator manufacturer and the following:

Impact attenuators shall be the self purging sand module type. The modules shall meet the testing criteria contained in National Cooperative Highway Research Program (NCHRP) Report 350 and shall be approved by the Department. The modules shall be preassembled to the greatest extent practicable so as to reduce to a minimum on-site installation time. The attenuator installation shall be located, oriented, and the modules assembled and filled to the nominal weights of 400 lbs. Sand for filling the modules shall conform to the requirements of Article 1003.01 of the Standard Specifications for FA-1 or FA-2 Class A quality. Unbagged sand containing not more than 5 percent moisture shall be used for filling modules.

Attenuator bases shall be installed based on location at the direction of the Engineer. Prior to constructing attenuator bases, the subgrade shall be prepared to the satisfaction of the Engineer. Attenuator bases shall be constructed of Portland cement concrete. Portland cement concrete bases shall be 150 mm (6 in.) thick and conform to the applicable requirements of Section 1020 of the Standard Specifications. The surface of the base shall be slightly sloped or crowned to facilitate drainage. The perimeter of each module and the specified mass (weight) of sand in each module shall be painted on the surface of the base.

**METHOD OF MEASUREMENT**
This work will be measured for payment as each, where each is defined as one complete installation.

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each for **RAMP SAND MODULE IMPACT ATTENUATOR AND BASE, FURNISH AND INSTALL**, of the type indicated, which price shall be payment in full for furnishing and installing the item at locations specified by the Engineer.

## ARR1 REVLAC RESTRAINING BARRIER TAPE CARTRIDGE, FURNISH ONLY

**DESCRIPTION**
This item is for furnishing and delivering to State Stock an Energy Absorbing Tape Cartridge complete with tape assembly for use with the Vehicle Restraining Mechanisms for the Kennedy Expressway REVLAC System.

**MATERIALS**
The energy absorbing tape cartridge assembly shall be Part No. EJ31256, Tape assembly and EJ41223, energy absorber, as manufactured by the Entwistle Company.

The energy absorbing device shall be model number MBF 4K-200-A as manufactured by The Entwistle Company. The following additional requirements shall be incorporated into the design of the barrier restraining mechanism:

The leading end of the energy absorbing device shall attach to one end of the restraining net with a removable connection.

The mounting of the energy absorbing device shall not degrade its FHWA-Approved operating characteristics.

The mounting of the energy absorbing device shall facilitate its replacement as a complete unit and also shall facilitate replacement only of the energy absorbing tape contained within its cartridge. In either case, replacement shall be from the ramp side of the unit

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each for **REVLAC RESTRAINING BARRIER TAPE CARTRIDGE, FURNISH ONLY,** which price shall be payment in full for the work as described herein.

## ARR2 REVLAC RESTRAINING BARRIER TAPE CARTRIDGE, INSTALL ONLY

**DESCRIPTION**
This item shall consist of the removal and salvage of the damaged/obsolete unit and the retrieval from State Stock, loading, transporting and installing a restraining barrier energy absorbing tape cartridge.

**INSPECTION AND ACCEPTANCE**
The Contractor shall examine the restraining barrier energy absorbing tape cartridge in the presence of the Engineer and after accepting the cartridge shall be held responsible for preservation of the condition of each restraining barrier energy absorbing tape cartridge, as it was at the time of acceptance, until the Final Acceptance Inspection.

**TRANSPORTATION**
The Contractor shall transport, handle and store (as applicable) the restraining barrier energy absorbing tape cartridges in complete conformance with the manufacturer's recommendations.

**INSTALLATION**
The restraining barrier energy absorbing tape cartridge shall be installed in accordance with the restraining barrier energy absorbing tape cartridge manufacturer's installation instructions except as noted herein.

**BASIS OF PAYMENT**
This item shall be paid at the contract unit price each for **REVLAC RESTRAINING BARRIER TAPE CARTRIDGE, INSTALL ONLY**, which shall be payment in full for the work as described herein.

## ARR3 REVLAC RESTRAINING BARRIER CRASH DETECTOR ASSEMBLY, FURNISH ONLY

**DESCRIPTION**
This item shall consist of furnishing and delivering to State Stock a complete restraining barrier crash detector assembly as manufactured by The Entwistle Company, compatible with the existing dragnet and barrier.

A position limit switch shall be provided at each end of the restraining net to indicate contact with and movement of the restraining net due to vehicle impact. When the restraining net is struck by a vehicle, an electrical contact shall be closed. All limit switches shall automatically reset upon correction of any control power failure. (Crash Detector Limit Switches LS-10, LS-11).

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each for **REVLAC RESTRAINING BARRIER CRASH DETECTOR ASSEMBLY, FURNISH ONLY,** which price shall be payment in full for furnishing and delivering the materials to State stock as specified herein and as directed by the Engineer.

## ARR4 REVLAC RESTRAINING BARRIER CRASH DETECTOR ASSEMBLY, INSTALL ONLY

**DESCRIPTION**

This item shall consist of the removal and salvage of the damaged/obsolete unit and the retrieval from State Stock, loading, transporting and installing a restraining barrier crash detector assembly.

**INSPECTION AND ACCEPTANCE**

The Contractor shall examine the restraining barrier crash detector assembly in the presence of the Engineer and after accepting they shall be held responsible for preservation of the condition of each restraining barrier crash detector assembly, as it was at the time of acceptance, until the final acceptance inspection.

**TRANSPORTATION**

The Contractor shall transport, handle and store (as applicable) the restraining barrier crash detector assemblies in complete conformance with the manufacturer's recommendations.

**INSTALLATION**

The restraining barrier crash detector assembly shall be installed in accordance with the restraining barrier crash detector assembly manufacturer's installation instructions except as noted herein.

**BASIS OF PAYMENT**

This item shall be paid at the contract unit price each for **REVLAC RESTRAINING BARRIER CRASH DETECTOR ASSEMBLY, INSTALL ONLY**, which shall be payment in full for the work as described herein.

## ARR5 REVLAC RESTRAINING BARRIER DRAGNET ASSEMBLY, FURNISH ONLY

**DESCRIPTION**

This item shall consist of furnishing and delivering to State stock a complete restraining barrier dragnet assembly as manufactured by The Entwistle Company, compatible with the existing dragnet and barrier. The dragnet assembly shall be of the following type as directed by the Engineer:

| RAMP | Entwistle Part No. |
|---|---|
| OB Mainline | EJ41224-10 |
| OB Ontario | EJ41224-20 |
| IB Edens | EJ41224-20 |
| IB JFK West Leg | EJ41224-30 |
| OB Slip Ramp | EJ41225-10 |
| IB Slip Ramp | EJ41225-20 |

The restraining net shall be the barrier Vendor's standard Highway Safety Net. The net shall consist of a minimum of two horizontal runs of stranded wire rope interlaced through a section of galvanized chain link fence or shall consist of a minimum of two horizontal runs of wire rope and wire rope vertical members spaced at approximately six inch centers. The restraining net shall be provided with removable connectors and with vertical stays and tensioning devices to maintain proper net tension and deployment. The Barrier Vendor shall submit complete details of the restraining net construction including sized, materials, and rated capacities of all components used. The restraining net shall be compatible with the energy absorbing devices, be FHWA-Approved, and be approved by the Engineer.

The net shall have a reflective material of eight inch wide, alternating red and white, diagonal stripes adhered to a semi-rigid, conformable, panel fastened to the net. The panel shall be capable of repeated impact without splintering, fracturing, or permanently deforming. The panel shall not alter the performance characteristics of the vehicle restraining mechanism.

**REFLECTIVE MATERIAL FOR RESTRAINING NET**

Reflective sheeting shall be used on both sides of the restraining barrier net as shown on the Contract Drawings. All sheeting requirements shall meet or exceed the standards as defined in AASHTO M 268-84, Retro reflective Sheeting for Traffic Control.

The sheeting shall be a minimum of Type III High Intensity with pre-coated pressure sensitive adhesive (Class 1), diagonal alternating red and sliver white stripes as shown on the Contract Drawings, angling down at 45° from the left to the right. The sheeting shall be oriented to take advantage of the directional reflectivity of the material as defined by the supplier of the reflective sheeting.

The preferred material for this application shall be **"**Scotchlite" Reflective Sheeting Diamond Grade Series 3970G, as manufactured by 3M, or approved equal. The retro reflective sheeting shall be installed strictly according to the manufacturer's instructions. Special attention to surface preparation and mounting of sheeting for proper bonding and adhesion shall be rigidly followed.

**BASIS OF PAYMENT**

This work shall be paid at the contract unit price each for **REVLAC RESTRAINING BARRIER DRAGNET ASSEMBLY, FURNISH ONLY,** of the location specified, which price shall be payment in full for furnishing and delivering the materials to State stock as specified herein and as directed by the Engineer.

## ARR6 REVLAC RESTRAINING BARRIER DRAGNET ASSEMBLY, INSTALL ONLY

**DESCRIPTION**

This item shall consist of removal and salvage of the damaged/obsolete unit and the retrieval from State Stock, loading, transporting and installing a restraining barrier dragnet assembly.

**INSPECTION AND ACCEPTANCE**

The Contractor shall examine the restraining barrier dragnet assembly in the presence of the Engineer and after accepting they shall be held responsible for preservation of the condition of each restraining barrier dragnet assembly, as it was at the time of acceptance, until the Final Acceptance Inspection.

**TRANSPORTATION**

The Contractor shall transport and handle the restraining barrier dragnet assemblies in complete conformance with the manufacturer's recommendations.

**INSTALLATION**

The restraining barrier dragnet assembly shall be installed in accordance with the restraining barrier dragnet assembly manufacturer's installation instructions except as noted herein.

**BASIS OF PAYMENT**

This item shall be paid at the contract unit price each for **REVLAC RESTRAINING BARRIER DRAGNET ASSEMBLY, INSTALL ONLY**, which shall be payment in full for the work as described herein.

## ASC1 SWING GATE CONTROLLER, FURNISH ONLY

**DESCRIPTION**

This item is for furnishing and delivering to State Stock, a complete Swing Gate controller, for the Kennedy Expressway Traffic Redirection and Access Control System as specified herein.

**MATERIALS**

The swing gate controller shall be Model Number HZ64B as manufactured by B&B Electromatic, Norwood, Louisiana and shall be a clockwise or counter-clockwise unit as designated by the Engineer without a gate arm or gate arm tip.

**Support Frame**

The frames shall be rigid structural weldments designed to withstand all operating loads imposed upon them by the swing gates and shall transfer the loads into the barrier walls via the anchor bolts.

The support frame for the swing gate assembly shall be fabricated from ASTM A36 structural steel shapes and plates using standard structural shapes to the maximum extent possible. All steel used in frame fabrication, including the component mounting plates, shall be at least 0.375 inches thick.

The configuration of all frames shall provide a rigid frame support for mounting additional items as described elsewhere herein.

The frames shall be drilled to match the anchor bolt patterns shown on the Contract Drawings with slotted anchor bolt holes, one inch diameter by two inches long, to allow for field positioning. The anchor bolt pattern shall match the anchor bolts installed under a previous contract.

Ease all exposed edges to a radius of 1/32 inch or more. Corners, seams, and joints shall be welded continuously and shall comply with requirements specified for welding. Welding flux shall be removed immediately and all exposed welds and surfaces shall be cleaned and ground to remove all scale, burrs, and sharp edges. Joints that may be exposed to the weather shall be fabricated to prevent the accumulation of water, dirt, and ice.

The frames shall be complete with all mounting requirements for installation of the gate actuators, controls, housing, and operational warning signs. Mounting plates shall be accurately drilled to match the components mounted. Torch-cut holes are not acceptable. The frames shall be hot dip galvanized after fabrication in compliance with Hot Dip Galvanizing.

The frame shall incorporate removable fitting attachments (lugs) for use during initial installation and for subsequent maintenance of the swing gate assembly. The lifting lugs shall be located on the top of the swing gate housing, as generally shown on the Contract Drawings, and shall be either stainless steel or galvanized to protect the lifting attachments from the elements. The threads of the lifting lugs shall penetrate the housing and engage threaded members welded to the support frame.

The lifting lugs shall be removed after installation and stored inside the swing gate housing in a rigid, non-metallic, re-sealable container, mounted to the inside of the swing gate housing.

Stainless steel bolts with watertight gasketed washers shall be provided with each unit to seal the lifting lug housing penetrations and to achieve an uncluttered appearance upon removal of the lifting lugs.

A stainless steel bottom plate, not less than 12 gauge thickness, shall fit against the bottom of the support frame to cover the opening in the top of the barrier wall at the location of the swing gate insert. Within the confines of the support frame the bottom plate shall cover the entire top area of the swing gate insert, not already covered by the swing gate cover plate (see drawings CP-01 and CP-02), and extend to the capstan end of the frame. Vertical lugs, welded to the upper side of the bottom plate, shall be used to secure the plate against the bottom of the support frame angles by bolting through the lugs and the vertical legs of the angles on three sides of the frame. The bottom of the support frame will vary between 0.875 and 1.75 Inches above the top of the swing gate insert frame (see Mounting Detail on SG series drawings). Provide an adjustable 12 gauge stainless steel skirt, extending the full width of the housing, to close the gap between the bottom plate and the top of swing gate insert. This skirt shall be located along the one edge of the bottom plate which has no support frame angle to fit against. The bottom plate and skirt shall be designed to exclude vermin, to prevent the accumulation of ice, snow, and water within the housing, and to provide safety and security. The bottom plate shall fit as closely as possible around the gate arm capstan. The Swing Gate Vendor shall submit design details for review.

**Housing**

The housing for the swing gate unit shall be fabricated to accurately fit over the support frame and bolt to the frame to form a weatherproof enclosure to prevent the accumulation of dust, dirt, water, ice, snow and prevent the entrance of vermin. The housing shall be removable and incorporate a positive locating design to facilitate positioning of the housing on the frame. Access doors shall be provided on three sides of the housing to provide maintenance access to each component within the enclosure.

Housings shall be fabricated from Type 302, or approved equal, stainless steel sheets of not less than 12 gauge thickness. Welding flux shall be removed immediately and all exposed welds and surfaces shall be cleaned to remove all scale, burrs, and sharp edges. All exterior welds and surfaces shall be ground smooth and blended to remove all roughness. Each housing shall have two large gasketed doors on the roadway side of the housing and one access door at each end of the housing to provide access for routine maintenance and for servicing of the swing gate assembly. The doors shall be fabricated from the same material as the housing, with a stamped raised frame/flange for rigidity, and be neoprene gasketed. Housing openings and doors shall be reinforced to eliminate deflection.

Doors shall be hung using bronze slip off hinges with stainless steel hinge pins and incorporate a three point door latch with provision for padlocking, and hold-open linkage. The two access doors on the roadway side of the unit shall be provided with heavy duty brass padlocks; all padlocks shall be keyed alike and each swing gate unit shall be provided with two keys. The two access doors at each end of the unit shall be opened from the inside of the unit. With access doors closed, no portion of the housing, including its latches and locks, may extend beyond the face of the barrier wall. In their open position, access doors may extend past the face of the barrier wall.

Each housing shall have a port opening fitted with a hinged, cast stainless steel cover held normally closed by gravity. The port opening shall be aligned with the extended output shaft of the transmission to permit Inserting the shaft of a hand crank through the opening and onto the end of the extended output shaft. Brackets shall be provided, within the housing, upon which to store the crank when not in use. The Swing Gate Vendor shall submit a sample cast cover for review by the Engineer.

The roof of housing shall be pitched to prevent build-up or ponding of water.

Each housing shall completely enclose the support frame and anchors bolts. The two end doors shall provide access to the anchor bolts for installation and maintenance of the unit:

The local controls for the swing gate mechanism shall be coordinated with the remote building Programmable Logic Control (PLC) system for the Reversible Lanes Traffic Redirection and Access Control System. Each swing gate shall be complete with local controls consisting of, but not limited to, the following:

a) Main Motor Circuit Protector with Auxiliary Contacts
b) Control Power Transformer
c) Motor Overloads with Auxiliary Contacts
d) Reversing Starter - minimum NEMA she 1
e) Terminal Blocks for both AC and DC Voltages
f) 125 Volt DC Coil, Remote Control Relays
g) Limit Switches - Cam Actuated
h) Limit Switches
i) Proximity Switch - two piece magnet actuated
j) Remote Control/Local Manual Control Maintained Correct Selector Switch
k) "Manual Open/Remote Control/Manual Close" Spring Return Selector Switch
l) "ON/OFF" Maintained Contact Rotary Pilot Switch
m) Circuit Breaker for the operation of the gate arm slot heater.
n) Circuit Breaker for the 120 VAC controller power
o) LED's for DC control indication.

All electrical components furnished shall be NEMA rated, U.L listed, readily available products of a national, USA manufacturer. Similar components shall be of the same manufacturer.

The entire local control system is to be serviceable from the roadway side of the unit. The local controls shall be enclosed within the swing gate housing and contained within a separate, self-supporting, single lever latch type NEMA 4X, enclosure. The enclosure shall not attach to the swing gate housing, but shall be attached to the swing gate housing support frame. All selector switches shall be mounted on the hinged door of the NEMA 4X enclosure which mounts inside of the swing gate housing. Switches shall be NEMA 4/13 type and installed with suitable gasketing to retain the NEMA 4 rating.

The local controls shall permit valid automatic operations to resume after manual positioning of the gate arm or switching from manual to automatic operation without requiring on-site resetting of the gate arm.

All wiring shall be through the use of pressure type terminal blocks and all control wires shall terminate in these blocks. Each terminal shall be clearly labeled (number or alpha-numeric), and ail wires shall be color coded based on their connected voltage. The wire numbers for the interconnection points to the remote control system shall be the same as shown on the Contract Drawings. The wiring diagram shall identify all colors and wire numbers. Wire all auxiliary contacts to the terminal block to permit transmission of the selector switch settings to the remote control system.

Where number of wires are trained through a box or wired to a hinged cover, they shall be grouped by circuit where applicable, bundled using appropriate cable ties, and supported to prevent pressure or strain on the cable insulation. Wire all selector switches, limit switches, auxiliary contacts, etc., including spare devices, to the terminal block.

**Control Device Requirements**

Motor Circuit Protector (CB-1):

The local controls at each swing gate shall include a three-pole motor circuit protector (MCP) for the incoming three-phase 480 volts.

Located inside of swing gate housing shall be a three-pole incoming MCP power circuit breaker with a normally open (N.O.) auxiliary contact to close on a "TRIP" or "OPEN" position. Contacts shall be rated not less than 0.5 amperes at 125 VDC.

Motor circuit protectors shall be manually operated and have a magnetic trip level adjustment. Trip ratings shown on the Contract Drawings are approximate and the trip rating provided shall be as recommended by the device manufacturer for the characteristics of the motor.

Motor circuit protectors shall be rated for an available fault current of 65,000 RMS symmetrical amperes.

Control Power Transformer (TR1):

Control power transformers shall be not less than 500 VA continuous duty and rated at 480V - 60 Hz primary to 120V single phase secondary. The control power transformer shall have a circuit breaker secondary and shall be sized adequately for the starter and all connected control devices. Control transformers shall be NEMA type AA, dry, with a temperature rise not to exceed 55 degrees C above a 40 degrees C ambient temperature at continuous rated load. Data submitted for approval shall include starter coil load data and total VA rating of control transformer.

Reversing Starter (MS-1):

Provide a reversing starter that is mechanically and electrically interlocked and rated for 480 Volts, 3 phase power, in a minimum NEMA size 1 configuration.

Starters shall be sized for the motor to be connected, but shall not be smaller than NEMA size 1. Starter size shall be carefully coordinated based on the motor characteristics of the motor to be connected and the manufacturer's starting ratings.

All starters shall be equipped with pull-apart terminal blocks for control and power wiring.

Starters shall be electrically operated, electrically held, with arc-extinguishing characteristics and renewable silver-to-silver contacts. Each starter shall have an overload relay as specified.

As a minimum each starter shall be equipped with two SPDT auxiliary contacts, with the N.C. contacts wired in as coil clearing contacts, in addition to the forward and reverse seal-in contacts. Provide two additional DPDT auxiliary contacts, one in each direction, as spares.

Provide an automatic reset non-compensated thermal overload relay with 480 V, 5 amp continuous duty contact rating. Provide additional auxiliary electrically isolated contacts rated at 120 V, 5 amp continuous duty, one normally dosed in motor control circuit and one normally open for monitoring by the Programmable Logic Controller. Relay shall be a NEMA B600 with three type B heater elements sized as required for the motor HP rating.

Motor control circuit shall operate at 120 volts derived from control transformer TR1, as specified.

Terminal Blocks (TB):

Terminal blocks shall be heavy duty corrosion resistant type rated at 600 volts AC & DC. AC and DC voltages shall be connected to color coded terminal blocks, separated and electrically isolated from each other. AC terminal housing shall be gray, and DC terminals shall be blue. Terminal block housing shall be manufactured from nylon capable of long term exposure of -40 degrees F to 180 degrees F, and all terminals shall be capable of terminating #22 through #6 AWG stranded or solid wire.

The current carrying metal body characteristics shall be as follows:

a. Modular design and construction.
b. Manufactured from a minimum of 85% copper alloy with locking screws manufactured from stress relieved brass.
c. 100% nickel plated.
d. Have self locking screws so that when wire is clamped into terminal, self loosening is not possible.
e. Have wire guides on base body.
f. Achieve "gas tight" termination, as wire is clamped into "serrated" metal body.
g. Have center bridgeability
h. Have no less than 3 milli-ohms of contact resistance.

The terminal blocks shall be as manufactured by Phoenix Contact or approved equal.

125 Volt DC Coil, Remote Control Relays (CR-1, CR-2, CR-3):

Provide electrically held, heavy duty relays rated at 300 V with a minimum of two normally open (N.O.) and two nominally closed (N.C.) independent electrically isolated contacts. The relay shall be hermetically sealed, with convertible, high reliability contact rates not less than 5 ampere resistive. Contact ratings shall be NEMA A300 AC, and NEMA P300 DC as per Contract Drawings.

Control Relay (CR-1), Located in the gate control enclosure. Interlace DC relay to allow remote ramp opening of the gate (PLC control or manual control from the Remote Control Building).

Control Relay (CR-2), Located in the gate control enclosure. Interface DC relay to allow remote ramp closing of the gate (PLC control or manual control from the Remote Control Building).

Control Relay (CR-3), Located in the gate control enclosure. Interface DC relay to allow remote PLC control of chevron sign. Shall be installed in each swing gate unit and connected in only selected swing gates.

Relays shall be as manufactured by Allen Bradley catalog #700-N or as approved by the Engineer.

Limit Switches - Cam Actuated (LS-5, LS-6, & spare LS-7, LS-8):

The gate cam actuated limit switch shall be a unit assembly containing a minimum of 4 individual switches each having one SPDT set of contacts. Contacts shall be totally enclosed and shall have a U.L rating of not less than 15 amperes at 220 volts AC. Each individual switch shall be controlled by an independent cam, which shall be adjustable with a single set screw. The limit switch body, cams and shaft shall be of corrosion resistant non-ferrous materials.

The multiple cam positron sensor assembly shall be operated from the drive transmission. Two of the switches normally closed (N.C.) (LS-5 & LS-6) shall function as motor overtravel limit switches. The other two switches shall be spares. Switches which are of different voltage type shall be isolated through the use of a spacer inserted between the switches.

Each switch shall be operated by an independent cam. The cams shall be position adjustable through 360 degrees of rotation. The signals from these position sensors shall de-energize the starting coils to the motor.

Cam Limit Switches shall be installed as shown on the Contract Drawings and as herein specified:

a) Limit Switch LS-5, with one normally closed (N.C.) contact located on the retract cam position opens and disconnects power to the retract starting coil when the drive travels past the retract position (indicates a broken chain on the cam).

b) Limit Switch LS-6, with one N.C. contact located on the extend cam position opens and disconnects power to the extend starting coil when the drive travels past the extend position (indicates a broken chain on the cam).

Standard Enclosed Limit Switches (LS-1A-1B, LS-2A-2B, LS-3, LS4, LS-9):

Standard Enclosed Limit Switches shall be NEMA 4 as required for outdoor installation (-40 to + 180 degrees F). Limit switches shall be heavy duty, Industrial type, oil and water tight, with a minimum 10 amp, 125 volt DC rating, and rated for one million operations. No electronic switches shall be used.

Standard Enclosed Limit Switches shall be installed as shown on the Contract Drawings and as herein specified:

a) Standard limit Switch LS-1, with one normally open (N.O.) (LS-1A) and one normally closed (N.C.) (LS-1B) independent electrically isolated contacts, located on gate arm inner rotating shaft. LS-1A contact is held closed when the gate is NOT in the retract position. When the gate arm moves to the retracted position (ramp open), the held closed N.O. LS-1A contact opens and disconnects power to the retract starting coil. And the held open N.C. LS-1 B contact closes signaling the Programmable Logic Controller that the Crank Arm is in the retracted (ramp open) position.

b) Standard Limit Switch LS-2, with one N.O.(LS-2A) and one N.C.(LS-2B) independent electrically isolated contacts, located on gate arm Inner rotating shaft. LS-2A contact is held closed when the gate is NOT in the extent position. When the gate arm moves to the extended position (ramp closed), the held closed N.O. LS-2A contact opens and disconnects power to the extend starting coil. And the held open N.C. LS-2B contact closes signaling the PLC that the Crank Arm is in the extended (ramp closed) position.

c) Standard limit switch LS-3, with one N.C. contact, located on the gate arm outer rotating it shaft. LS-3 Is held open when the gate arm is NOT in the retracted position. When the gate arm moves to the retracted position, the held open LS-3 contact closes and signals the PLC that the gate arm is in the retracted position (Input to PLC constant from + 10 degrees of fully retracted).

d) Standard Limit Switch LS-4, with one N.C. contact, located on the gate arm outer rotating shaft. LS-4 is held open when the gate arm is NOT in the extended position. When the gate arm moves to the extended position, the held open LS contact closes and signals the PLC that the gate arm is in the extended position (Input to PLC constant from -10 degrees of fully extended).

e) Standard Limit Switch LS-9, with two N.C. independent electrically isolated contacts (LS-9A & LS-9B), located at the hand crank opening. When the hand crank is inserted, LS-9A opens and disables the motor control circuit and LS-9B opens and disconnects signal to the PLC.

Standard Limit Switches shall be as manufactured by Allen Bradley Bulletin 802M or approved equal.

Remote/Local Control Selector Switch (SS-1):

Selector switch shall be NEMA 4/13 heavy duty type, two position maintained contact, rated at 600 volts AC. Provide and wire auxiliary contacts to the terminal block to permit transmission of the selector switch position to the remote control system.

Selector Switch (SS-1), Located on door of swing gate local control enclosure. Two position selector switch intended to be used for maintenance and local gate control. To allow the gate to be switched to local control (LOCAL MANUAL CONTROL), or to remote building control (REMOTE CONTROL).

Remote Control Switch (SS-2):

Remote control switch shall be NEMA 4/13 heavy duty type, three position spring return to center, rated at 600 volts AC. Provide and wire auxiliary contacts to the selector switch (SS-1) to permit transmission of the selector switch position to the remote/local control system.

Selector Switch (SS-2), Located on door of swing gate local control enclosure. Three Position, spring return to center, selector switch that allows (MANUAL OPEN), (MANUAL CLOSE), when SS-1 is in the "LOCAL MANUAL CONTROL" position.

Rotary ON/OFF Pilot Switch (SS-3):

Rotary Pilot switch shall be NEMA 4/13 heavy duty type, two position maintained contact, rated at 600 volts AC. Wire SS-3 auxiliary contacts to Selector switch (SS-1 ) via the Terminal strip.

Rotary Pilot Switch (SS-3), located on door of swing gate local control enclosure. Two position selector switch to turn DC power ON and OFF.

Circuit Breaker for the gate arm slot heater (CB-2):

A two-pole, 15 ampere, 600 volt circuit breaker shall be provided for the swing gate sandwich heater cable mounted on the barrier wall.

Circuit Breaker for 120 VAC control power (CB-3):

A two-pole, 5 ampere, 240 volt circuit breaker shall be provided on the secondary power feed, for the control power transformer TR1.

**LED's:**
Provide high intensity, long life (10 year average) solid state LED cartridges with built-in resistors/rectifiers rated for 125 VDC. Mount LED's in a grouped configuration into the NEMA 4 cabinet as shown on the Contract Drawings.

**Wiring for Power and Control:**
All wire shall be minimum number 14 AWG stranded copper, type MTW, 600 V insulation.

**SEQUENCE OF OPERATIONS - AUTOMATIC:**
Automatic Operation - Extent Gate (Close Ramp):

a. Beginning state - swing gate retracted, ramp open.

b. Requirements for automatic operation:

- Selector Switch SS-00 "PLC CONTROL/OFF PLC CONTROL" (located in the Remote Control Building) in "PLC CONTROL" Position
- Selector Switch SS-1 "REMOTE CONTROL/LOCAL MANUAL CONTROL" (located in the local swing gate control cabinet) in "REMOTE CONTROL" Position
- Selector Switch SS-3 "ON/OFF" (located in swing gate control cabinet) in "ON" position
- "Crank Arm Open Limit Switch" LS-1B Closed - PLC Input - Crank Arm in Open Position
- "Gate Retracted Limit Switch LS-3 Closed" - PLC Input - Gate in Retracted Position
- "Shear Pin Detector Proximity Switch" PRX-1 Closed - PLC Input - Shear Pin Detector Intact
- Motor Circuit Protector CB-1 Aux Contact Open, and Motor Overload Relay MOL Aux Contact Open - No fault input to PLC

c. PLC power output to swing gate terminal block #4, energize DC relay CR-3 and flashes Chevron Sign on and off. (PLC programmed logic turns relay on and off).

d. PLC applies power to swing gate terminal block #2, energize DC relay CR-2. CR-2 contact closes and energizes starting coil MS-1R.

e. The motor starts and the gate arm begins moving from the retracted to the extended position.

f. When the gate moves 10 degrees from fully retracted, limit switches LS-3 and LS-1B signal inputs to the PLC that the gate is no longer in the retracted position.

g. Power is continuous to relay CR-2, until limit switches LS-4 and LS-2B signal the PLC that the gate is in the extended position, or a pre-set time limit In the PLC has expired. Relay CR-3 is de-energized after all the gates are In the extended position, turning the chevron signs off.

**Automatic Operation - Retract Gate (Open Ramp):**

a. Beginning state - swing gate extended, ramp closed.

b. Requirements for automatic operation:

- Selector Switch SS-00 "PLC CONTROL/OFF PLC CONTROL" (located In the Remote Control Building) in "PLC CONTROL" Position
- Selector Switch SS-1 "REMOTE CONTROL/LOCAL MANUAL CONTROL" (located in the local swing gate control cabinet) in "REMOTE CONTROL" Position
- Selector Switch SS-3 "ON/OFF" (located in swing gate control cabinet) in "ON" position
- "Crank Arm Closed Limit Switch" LS-2B Closed - PLC Input - Crank Arm Closed
- "Gate Extended Limit Switch" LS-4 Closed - PLC Input - Gate Extended
- "Shear Pin Detector Proximity Switch" PRX-1 Closed PLC Input - Shear Pin Detector Intact
- Motor circuit Protector CB-1 Aux. Contact Open and Motor Overload Relay MOL Aux. Contact Open. No fault input to PLC

c. PLC applies power to swing gate terminal block #1, energize DC relay CR-1. CR-1 contact closes and energizes starting coil MS-1F.

d. The motor starts and the gate arm begins moving from the extended to the retracted position.

e. When the gate moves 10 degrees from fully extended, limit switches LS-4 and LS-2B signal inputs to PLC that the gate is no longer in the extended Position.

f. Power is continuous to relay CR-1, until limit switches LS-3 and LS-1B signal the PLC that the gate is in the retracted position, or a pre-set time limit in the PLC has expired. Relay CR-1 is then de-energized, turning the motor off.

**Manual Operating Requirements (Local Control):**

a. Open the housing access door.

b. Set selector switch SS-1 in "LOCAL MANUAL CONTROL" position. (disconnects PLC outputs from the remote control building).

c. Moving and holding the selector switch SS-2 in either the "MANUAL OPEN" or "MANUAL CLOSE" position, moves the gate arm in the extended or retract direction. Releasing the spring return switch stops all movement.

d. To return to remote control, SS-1 must be switched to the "REMOTE CONTROL" position.

e. Close the housing access door.

**Manual Operating Requirements (Hand Cranking)**

A hand crank shall be furnished with each swing gate to provide a means for manual operation of the gate arm in the event of a power or control failure, maintenance, or emergency operations. The hand crank shall connect to an extended output shaft from the transmission and shall require approximately 36 complete rotations to crank the gate arm 90 degrees. The crank arm shall not require more than 30 pounds of force per rotation. The following steps shall be required to position the hand crank for use:

a. Open the housing access door.

b. Open the port cover for crank arm.

c. From outside the housing, insert the shaft of the crank through the port and onto the end of the transmission shaft. Automatically disconnects motor control circuit from operating remotely (LS-9 Opens). Mechanically releases brake.

d. Crank the arm to the required position, until extended or retracted LED lights up, or until physical stop is reached.

e. Remove the crank arm. Automatically re-energizes the control circuit (LS-9 Closes), and engages the brake.

f. Replace the crank arm inside the housing, and close the access door.

**CORROSION PROTECTION**
Aluminum components shall not be treated with corrosion inhibitors.

The Swing Gate Vendor's names and data plates, machined ways, and other machined surfaces, bright metal work, lubrication points, oilers, and sumps shall be protected against entry of coatings, dirt, or cleaning agents during coating application.

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each for **SWING GATE CONTROLLER, FURNISH ONLY,** for either a clockwise (COO) or counter-clockwise (CCW) operating unit, which price shall be payment in full for furnishing and delivering the materials to State Stock as directed by the Engineer.

## ASC2 SWING GATE CONTROLLER, INSTALL ONLY

**DESCRIPTION**
This item shall consist of the removal and salvage of the damaged/obsolete unit and the retrieval from State Stock, loading, transporting and installing, a swing gate controller.

**INSPECTION AND ACCEPTANCE**
The Contractor shall examine the swing gate controller in the presence of the Engineer and after accepting them shall be held responsible for preservation of the condition of each swing gate controller, as it was at the time of acceptance, until the Final Acceptance Inspection.

**TRANSPORTATION**
The Contractor shall transport, handle and store (as applicable) the swing gate controllers in complete conformance with the manufacturer's recommendations.

**INSTALLATION**
The swing gate controller shall be installed in accordance with the swing gate controller manufacturer's installation instructions except as noted herein.

**BASIS OF PAYMENT**
This item shall be paid at the contract unit price each for **SWING GATE CONTROLLER, INSTALL ONLY**, which shall be payment in full for the work as described herein.

## ASD1 SWING GATE DRIVETRAIN ASSEMBLY, FURNISH ONLY

**DESCRIPTION**
This item shall consist of furnishing and delivering to State Stock a complete swing gate actuator transmission, motor and crank arm, hereinafter referred to as a drivetrain assembly, as manufactured by B&B Electromatic, compatible with the existing swing gates.

## MATERIALS

**Transmission**:
The gate actuator shall include but not be limited to a worm gear transmission with a double extended output shaft, reduction gears, and input shaft. The drive motor shall direct couple to the input shaft of the transmission. One of the output shafts of the transmission shall be connected to the swing gate crank arm assembly. The second output shaft shall be used for manual cranking of the gate arm.

The gate actuator transmission shall transfer the torque to the gate arm capstan via a linkage of the crank arm assembly which shall consist of two crank arms and an adjustable connecting rod having self-aligning ball ends. The crank arm assembly shall be factory pre-set for the specific gate location and gate arm angle. All linkage components shall be heavy-duty and shall permit field adjustment of the rotation of the gate arm from -5 to 95 degrees of rotation.

The gate actuator transmission shall be a totally enclosed unit designed and built for the required service. Gears shall conform with the requirements of AGMA and shall be oil bath lubricated with lightweight oil as applicable for the design temperatures. The transmission housing shall include, but not be limited to an oil fill plug and an oil drain plug. These items shall be located for easy access, from the ramp side access door during routine inspection and maintenance of the mechanism, without removing the housing or other components.

The connecting rod shall be fabricated from ASTM A311 Class B high strength steel.

The gate actuator shall incorporate sine wave motion to accelerate the gate arm smoothly from zero to maximum velocity at mid-stroke and then decelerate smoothly to zero velocity at full stroke. The drive shall be designed to rotate the gate arm through 90 degrees within 15 seconds and shall be capable of reversing of the direction of rotation from any point.

**Actuator Drive Motors:**
The drive motors shall be flange mounted to their transmission cases. The motors shall be double extended shaft type, suitable for harsh environment use, as specified herein. An electric, solenoid released, motor brake shall be mounted to the other end of the motor.

Motors shall be squirrel cage induction type, 460 volt, 3-phase, 60 Hertz, High Slip, High Torque (NEMA design D), Totally Enclosed Non Ventilated, and shall have Class F insulation. Horsepower rating shall be not less than twice that calculated by the Swing Gate Vendor to meet specified design parameters. Motors shall be capable of operating the driven equipment over the full range of operating load conditions without exceeding the nameplate rating. Motors shall be flange mounted, attached to the transmission with at least four bolts, and shall be of the instant reversing type to permit reversing the movement direction at any point of travel.

The ratings, characteristics, materials, and construction of electric motors shall be in accordance with the latest applicable standards of ANSI, IEEE, and NEMA The manufacturer's certification of the preceding shall be provided as a part of the submittal data.

Submittal data shall include complete manufacturer's specifications and descriptive bulletins for all equipment, size, capacity, description and make of motor. Motor data shall include the following:

a. Manufacturer
b. Nameplate Rated Horsepower
c. Rated Voltage
d. Full Load RPM
e. Full Load Current
f. NEMA Design Letter

g. NEC Code Letter or Inrush Current
h. Insulation Class
I. Service Factor
j. Recommended Starting Restrictions, including Allowable Starts Per Hour
k. Design Load Calculations

The motor shall be equipped with an electric solenoid actuated type brake which shall automatically release when the gate arm starts to move out of position under power and shall automatically set when the gate arm reaches the opened or closed position. The brake shall have the same operating voltage rating as the drive motor. A means shall be provided to mechanically release the brake, in the case of control power failure, to permit use of the hand crank for manual operation. The solenoid brake shall be sized to hold the gate arm in position under the forces produced by the wind loads as described elsewhere herein.

Motor bearings shall be designed to withstand all axial thrust from the driven equipment.

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each, for **GATE DRIVETRAIN ASSEMBLY, FURNISH ONLY,** which price shall be payment in full for furnishing and delivering the materials to State stock as directed by the Engineer.

## ASD2 SWING GATE DRIVETRAIN ASSEMBLY, INSTALL ONLY

**DESCRIPTION**
This item shall consist of the removal and salvage of the damaged/obsolete unit and the retrieval from State Stock, loading, transporting and installing a gate drivetrain assembly.

**INSPECTION AND ACCEPTANCE**
The Contractor shall examine the a swing drivetrain assembly in the presence of the Engineer and after accepting them shall be held responsible for preservation of the condition of each drivetrain assembly, as it was at the time of acceptance, until the Final Acceptance Inspection.

**TRANSPORTATION**
The Contractor shall transport, handle and store (as applicable) the a swing gate drivetrain assembly in complete conformance with the manufacturer's recommendations.

**INSTALLATION**
The swing gate drivetrain assembly shall be installed in accordance with the swing gate drivetrain manufacturer's installation instructions except as noted herein.

**BASIS OF PAYMENT**
This item shall be paid at the contract unit price each for **SWING GATE DRIVETRAIN ASSEMBLY, INSTALL ONLY,** which shall be payment in full for the work as described herein.

## ASG1-6 SWING GATE ARM, FURNISH ONLY

**DESCRIPTION**
This item is for furnishing and delivering to State Stock swing gate arms with gate tips of various lengths for the Kennedy Expressway REVLAC System as specified herein.

**MATERIALS**
The swing gate arm shall consist of an aluminum reflectorized area. The swing gate materials shall be compatible with swing gate controller Model Number HZ64B (Referenced drawing No. 0100DD0037 -

latest version) as manufactured by B&B Electromatic, Norwood, Louisiana. The swing gate arms are constructed having the following standard lengths: 2 ft., 4 ft., 5 ft., 6 ft., 7 ft., 8 ft., 9 ft., 10 ft., 11 ft., 12 ft., 13 ft., 14 ft., 15 ft., 16 ft., 17 ft., 18 ft., 19 ft., 20 ft., 21 ft., 22 ft. and 23 ft.

**SWING GATE ARMS**

Gate arms shall consist of an assembly of standardized design, standard length, segmented truss structures, connectors, brackets, and a three foot long flexible gate tip. Gate arm truss assemblies, as shown on the Contract Drawings and as specified, shall include both the gate arm truss segments and the gate tips.

Each gate arm truss segment shall be 12 Inches high and configured as generally shown on the Contract Drawings. The truss segments shall form a welded structural fabrication of 6061-T6 extruded seamless aluminum tubing having a minimum allowable yield strength of 40,000 pounds per square inch (psi). The segments shall be constructed to prevent accumulation of water within the structural tubes. The minimum allowable size of the materials shall be as shown on the Contract Drawings.

The truss segments shall be interchangeable to permit assembling the gate arms to the specified lengths. The segments shall be provided with the reflective sheeting on both sides of the truss and the stripes properly oriented to allow either side to face the traffic.

Each assembled gate arm shall be designed to resist the loads described herein and meet the following additional requirements:

a) The free end of the assembled gate arm shall not sag more than 0.75 inches, below horizontal, under its own weight.

b) The longest gate arm assembly, excluding the flexible gate tip, shall not deflect more than 36 inches, horizontally, in the specified wind loads.

c) The free end of the longest gate arm assembly shall not sag more than two inches, below horizontal, when covered with ice as described elsewhere herein.

d) The maximum allowable design stress of the gate arm shall be calculated as 60 percent of the yield strength of the material (6061-T6 extruded seamless aluminum tubing has a yield strength of 40,000 psi; therefore, the design stress of the arm shall not exceed 24,000 psi).

e) The gate arms shall be free of harmonics and standing wave vibrations. Should any such harmonics and vibrations develop, the Swing Gate Vendor shall make all necessary corrections at his own cost.

A gate arm tress shall be connected to its mounting bracket via an aluminum connector assembly. The connector shall be fabricated from the same material as the gate arm truss segment and shall be bolted to the mounting bracket with stainless steel bolts, nuts and washers as described below. The attachment bracket may be shimmed, if required, to adjust for deflection caused by the weight of the gate arm assembly. The Swing Gate Vendor shall supply a shim pack, as needed, for each arm assembly. Shimming of a gate arm is limited by the physical constraints of the gate arm recess formed in the barrier wall. Whether shimmed or not, all gate arms shall completely retract into the barrier wall recess. Rubber bumpers shall also be provided with each gate arm to prevent the gate arms from damage when they are retracted. A Teflon gasket shall also be provided for the gate arm to mounting bracket connection.

The use of exterior supports or attachments (such as guy wires) to remove sag from the gate or for any other reason is unacceptable.

Gate arms shall be connected, with an aluminum Insert of the same material as the gate arm, as shown on the Contract Drawings. The insert shall be bolted to the truss segments with stainless steel bolts, nuts, and washers as described below.

The gate tip is furnished under this pay item. Flexible gate tips shall be connected to the end truss segment using the connector assembly as shown on the Contract Drawings. The assembly, truss segment, and gate tips shall be bolted together with 0.5 inch diameter stainless steel bolts, nuts, and washers. One washer shall be placed under the bolt head and a lock washer shall be placed under the nut. The nuts and bolts shall be hand tightened until snug and further tightened with a wrench a minimum of 1/2 turn of the nut.

**REFLECTIVE MATERIAL FOR GATE ARMS**

Both sides of each gate arm, including both the truss and the flexible end, shall be covered with retro-reflective sheeting. All sheeting requirements shall meet or exceed the standards as defined In AASHTO M 268-84, Retroreflective Sheeting for Traffic Control.

The sheeting shall be a minimum of Type III High Intensity with pre-coated, pressure sensitive, adhesive (Class 1), diagonal alternating red and silver white stripes as shown on the Contract Drawings, angling down at 45° from left to right. The sheeting shall be oriented to take advantage of the directional reflectivity of the material as defined by the supplier of the reflective sheeting.

The material for this application shall be "Scotchlite" Reflective Sheeting Diamond Grade Series 3970G as manufactured by 3M, or approved equal. The sheeting shall be pre-striped of appropriate size and width to match the application surface. The retro-reflective sheeting shall be installed strictly according to the manufacturer's instructions. Provide special attention to surface preparation and mounting of sheeting for proper bonding and adhesion.

**BASIS OF PAYMENT**

This work shall be paid at the contract unit price each for complete **SWING GATE ARM** and tip, for the length specified:

**SWING GATE ARM, (2 FT.) TO (4 FT.), FURNISH ONLY (ASG1)**
**SWING GATE ARM, (5 FT.) TO (8 FT.), FURNISH ONLY (ASG2)**
**SWING GATE ARM, (9 FT.) TO (12 FT.), FURNISH ONLY (ASG3)**
**SWING GATE ARM, (13 FT.) TO (16 FT.), FURNISH ONLY (ASG4)**
**SWING GATE ARM, (17 FT.) TO (20 FT.), FURNISH ONLY (ASG5)**
**SWING GATE ARM, (21 FT.) TO (23 FT.), FURNISH ONLY (ASG6)**

which price shall be payment in full for furnishing and delivering the materials to State Stock as directed by the Engineer.

## ASG7 SWING GATE ARM CAPSTAN AND BRACKET ASSEMBLY, FURNISH ONLY

**DESCRIPTION**

This item shall consist of furnishing and delivering to State stock a complete swing gate arm capstan and mounting bracket assembly Model No. HZ-64B as manufactured by B&B Electromatic, reference drawing numbers 0100DD0537 and 0064DD0072 latest revision.

**MATERIALS**

**Gate Arm Capstan and Mounting Bracket:**

The gate arm capstan shall be composed of two rotating shafts and one stationary support stanchion (tube) in a "shaft within a shaft" design.

The inner rotating shaft shall transfer the torque and rotary motion from the gate actuator crank arm to the outer rotating shaft which supports the gate arm. The upper end of the inner shaft shall extend through a flange bearing which is bolted to a support plate integral with the frame. Above the crank arm connection, the bearing shall be connected to the shaft with a Nyloc type set-screw. Spare set-screws shall be provided in the box provided for spare shear pins. Self Lubricating, all impregnated, radial bronze bushings shall be used to maintain concentric alignment of the inner shaft relative to a stationary support tube. The upper end of the shaft shall extend past the bearing to provide for the gate position sensors.

The torque and rotary motion shall be transmitted between the inner and outer shafts through a shear connection consisting of two adjacent circular plates of identical metallurgical composition located at the bottom of both shafts. The plates shall be linked by shear pins. The shear pin holes in the plates shall match each other in only one position. Alignment holes shall be provided in both plates to assist shear pin replacement. The adjacent faces of the shear plates shall be ground to a smooth finish and coated with Teflon pipe thread compound or similar material, as approved by the Engineer, to minimize friction and corrosion between the plates.

The inner rotating shaft shall be fabricated from ASTM-A193-B7 solid alloy steel, turned, ground, polished, and machined as required, with a nominal outside diameter of not less than two Inches. The upper end shall be connected to the crank arm using a key and two double set-screws placed 90 degrees apart (one cone point and one set point over top the cone point). The assembly to support the return spring and shear pins shall incorporate keys, rings, or other method approved by the Engineer, at the lower end of the inner shaft.

The stationary support tube shall be rigidly attached to the swing gate frame and incorporate a "keeper collar" to support both the support tube and the outer rotating shaft. The keeper collar shall be bolted through the support tube and into the frame of the swing gate. Self lubricating, oil impregnated, radial bronze bushings shall be located on the exterior at both ends of the support tube to maintain concentric alignment of the outer shaft and the support tube. A self lubricating, oil impregnated, bronze thrust bushing shall be located inside the keeper collar where the outer rotating shaft is supported, to maintain a smooth surface upon which the outer shaft shall ride.

The stationary support tube shall be fabricated from ASTM-A519 steel alloy, machined as required, with a nominal outside diameter of not less than 4.5 inches and a wall thickness of not less than 0.5 inches; it shall be rigidly bolted to the frame of the swing gate using ASTM A-325 bats, nuts and washers.

The outer rotating shaft shall be supported from the keeper collar of the support tube and shall extend to the shear plate of the inner rotating shaft. The gate arm mounting bracket shall attach to the exterior of the outer rotating shaft as described below.

The outer rotating shaft shall be fabricated from ASTM-A519 steel alloy seamless tubing, machined as required, with a nominal outside diameter of not less than six inches and a wall thickness of not less than 0.5 inches. A circular steel plate shall be fabricated from ASTM A656 GR80, welded to the lower end of the outer rotating shaft, and have the shear pin mounting holes drilled and reamed. The shear pin holes shall match the holes for the inner shaft in only one position. Another circular steel plate (ASTM A656 GR80) shall be welded to the upper end of the outer shaft to transfer all axial loads into the swing gate frame via the thrust bearing.

The gate arm mounting bracket shall be fabricated from ASTM A36 steel not less than 0.25 inches thick. The bracket shall be fabricated in two halves and shall be hot dip galvanized after complete fabrication. The halves shall be bolted together with a minimum of eight, 0.5 inch diameter, ASTM-A325 bolts, Type 1 or 2. The bracket shall be damped to the outer shaft of the capstan. The frictional force developed in the clamped connection shall be sufficient to hold the gate arm in position and resist all live and dead loads imposed on the gate. A teflon gasket shall be provided and installed at the end of the bracket, where the aluminum gate arm assembly attaches to the bracket, to isolate the dissimilar metals.

An adjustable disc shall be attached to the swing gate inner rotating shaft. Adjustable position sensing limit switches shall be used to stop the drive motor at the gate arm extended and retracted positions (ramp closed and ramp open).

A second adjustable disc shall be attached to the swing gate outer rotating shaft. Adjustable position sensing limit switches shall be furnished and installed to provide a control input for monitoring the gate position to -10 degrees of fully extended and +10 degrees of fully retracted, by the remote control system.

**BASIS OF PAYMENT**

This work shall be paid at the contract unit price each for **SWING GATE ARM CAPSTAN AND BRACKET ASSEMBLY, FURNISH ONLY,** for either a clockwise (COO) or counter-clockwise (CCW) operating unit, which price shall be payment in full for furnishing and delivering the materials to State stock as directed by the Engineer.

## ASG8 SWING GATE ARM PROXIMITY SWITCH, FURNISH ONLY

**DESCRIPTION**

This item shall consist of furnishing and delivering to State Stock a complete swing gate arm proximity switch assembly as manufactured by B&B Electromatic or approved equal.

**Shear Pin Monitor Proximity Switch (PRX-1):**

Electrical continuity, two piece magnet actuated reed proximity switch, shall be provided between the two flanges of the gate arm rotation shaft as a means of monitoring the status of the shear pins. If the shear pins break, permitting relative rotation between the two flanges, the continuity shall be broken causing a 125 VDC signal to be interrupted to the remote control system.

**Proximity switch assembly (PRX-1):**

Mounted between gate arm inner and outer rotating shafts, PLC Input - Shear Pin Detection.

**BASIS OF PAYMENT**

This work shall be paid at the contract unit price each for **SWING GATE ARM PROXIMITY SWITCH, FURNISH ONLY,** which price shall be payment in full for furnishing and delivering the materials to State stock as directed by the Engineer.

## ASG9 SWING GATE ARM PROXIMITY SWITCH, INSTALL ONLY

**DESCRIPTION**

This item shall consist of the removal and salvage of the damaged/obsolete unit and the retrieval from from State Stock, loading, transporting and installing a swing gate arm proximity switch assembly.

**INSPECTION AND ACCEPTANCE**

The Contractor shall examine the swing gate arm proximity switch in the presence of the Engineer and after accepting them shall be held responsible for preservation of the condition of each swing gate arm proximity switch, as it was at the time of acceptance, until the Final Acceptance Inspection.

**TRANSPORTATION**

The Contractor shall transport and handle the swing gate arm proximity switches in complete conformance with the manufacturer's recommendations.

**INSTALLATION**

The swing gate arm proximity switch shall be installed in accordance with the swing gate arm proximity switch manufacturer's installation instructions except as noted herein.

**BASIS OF PAYMENT**
This item shall be paid at the contract unit price each for **SWING GATE ARM PROXIMITY SWITCH, INSTALL ONLY**, which shall be payment in full for the work as described herein.

## ASH1 SWING GATE ARM HAND CRANK, FURNISH ONLY

**DESCRIPTION**
This item shall consist of furnishing and delivering to State Stock swing gate arm hank crank as manufactured by B&B Electromatic. The hank crank shall match the design and material of the existing hand cranks.

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each for **SWING GATE ARM HAND CRANK, FURNISH ONLY,** which price shall be payment in full for furnishing and delivering the materials to State stock as directed by the Engineer.

## ASR1 SWING GATE ARM STRIPING, REMOVE AND REPLACE

**DESCRIPTION**
This item is for furnishing, removing and replacing the aluminum reflectorized strips of material on the REVLAC and RACS swing gate arms and REVLAC barrier.

**MATERIALS**
Both sides of each gate arm, including both the truss and the flexible end, shall be covered with retro-reflective sheeting. All sheeting requirements shall meet or exceed the standards as defined In AASHTO M 268-84, Retroreflective Sheeting for Traffic Control.

The sheeting shall be a minimum of Type III High Intensity with pre-coated, pressure sensitive, adhesive (Class 1), diagonal alternating red and silver white stripes as shown on the Contract Drawings, angling down at 45° from left to right. The sheeting shall be oriented to take advantage of the directional reflectivity of the material as defined by the supplier of the reflective sheeting.

The material for this application shall be "Scotchlite" Reflective Sheeting Diamond Grade Series 3970G as manufactured by 3M, or approved equal. The sheeting shall be pre-striped of appropriate size and width to match the application surface. The retro-reflective sheeting shall be installed strictly according to the manufacturer's instructions. Provide special attention to surface preparation and mounting of sheeting for proper bonding and adhesion.

Traffic control protection as necessary for this work is incidental to this pay item.

**BASIS OF PAYMENT**
This work shall be paid at the unit price, per foot, for gate, barrier, or swing gate locations per, **SWING GATE ARM STRIPING, REMOVE AND REPLACE,** which price shall be payment in full for work as specified.

## ATC1-8 TRAFFIC CONTROL, FOR NON-ROUTINE WORK

**DESCRIPTION:**
This item of work shall include furnishing, installing, maintaining, replacing, relocating and removing all traffic control devices used for the purpose of regulating, warning or directing traffic during non-routine work. For all routine maintenance work, and certain non-routine pay items as noted herein, the traffic control shall be incidental to routine maintenance and its cost shall be included in the respective pay item unit price.

The Contractor shall contact the Region One Bureau of Traffic at least 72 hours in advance of beginning work.

**BASIS OF PAYMENT:**

This work will be paid for at the contract unit price each for **TRAFFIC CONTROL, FOR NON-ROUTINE WORK,** of the closure type indicated, which price shall be payment in full for all labors to install, maintain, replace, relocate and remove all traffic control devices indicated in the plans and specifications.

Delays to the Contractor caused by complying with these requirements will be considered incidental to the item for:

**TRAFFIC CONTROL FOR NON-ROUTINE WORK, 1 LANE EXPRESSWAY CLOSURE (DAY) (ATC1)**
**TRAFFIC CONTROL FOR NON-ROUTINE WORK, 1 LANE EXPRESSWAY CLOSURE (NIGHT) (ATC2)**
**TRAFFIC CONTROL FOR NON-ROUTINE WORK, 2 LANE EXPRESSWAY CLOSURE (DAY) (ATC3)**
**TRAFFIC CONTROL FOR NON-ROUTINE WORK, 2 LANE EXPRESSWAY CLOSURE (NIGHT) (ATC4)**
**TRAFFIC CONTROL FOR NON-ROUTINE WORK, 3 LANE EXPRESSWAY CLOSURE (DAY) (ATC5)**
**TRAFFIC CONTROL FOR NON-ROUTINE WORK, 3 LANE EXPRESSWAY CLOSURE (NIGHT) (ATC6)**
**TRAFFIC CONTROL FOR NON-ROUTINE WORK, RAMP CLOSURE (DAY) (ATC7)**
**TRAFFIC CONTROL FOR NON-ROUTINE WORK, RAMP CLOSURE (NIGHT) (ATC8)**

which shall be payment in full for all labor, to install, maintain, replace, relocate and remove all traffic control devices indicated in the plans and specifications.

Delays to the Contractor caused by complying with these requirements will be considered incidental to the item for traffic control and no additional compensation will be allowed.

## AV01 VIDEO COMMUNICATION HUT, FURNISH AND INSTALL

**DESCRIPTION**

This item shall consist of furnishing and installing a video communication hut, precast concrete, 11'-3" X 14' interior dimensions. The equipment in the hut shall include 200 A Main Service Disconnect Switch and distribution panel, two three ton air conditioning units with lead-lag controller and 5 kW electric heater, smoke alarm, four 4' fluorescent fixtures, three convenience outlets, heavy duty 18 gauge metal door and frame with panic bar and door closer, emergency light and fire extinguisher. The hut shall be designed to withstand the following loads:

Floor Live Load: 250 PSF
Roof Load: 65 PSF
Wind Load 110 MPH

Panelboards

Panelboards shall be in conformance with the NEC shall be UL listed and shall conform to Federal Specification W P 115b. Panelboards used for service entrance shall be UL listed for use as service entrance equipment.

Panelboards shall be of dead front construction, providing access to the wiring compartment without exposing bus.

Boxes (tubs) shall be code gauge galvanized steel with ample wiring space and knock outs all in conformance with UL 50. Fronts shall be code gauge steel with a hinged door and a cylinder lock. The front shall have a grey finish over a rust inhibitor. The interior of the door shall have a circuit directory in a frame with a clear plastic cover. Boxes and fronts shall be suitable for surface or flush mounting as indicated and where no other indication in made, panels shall be surface mounted.

Unless otherwise indicated, phase bus bars may be copper or aluminum, sized as shown or as required by UL standards, whichever is larger. Neutral shall have a solid bar with a separate connector for each pole of panelboard branch circuit space. Phase bus shall be for bolt on branch circuit breakers. A ground bar shall be provided for all panels.

Unless otherwise specifically indicated, each panelboard shall be provided with a main breaker sized at the panel bus rating.

Unless otherwise indicated, branch circuits shall be arranged in parallel vertical rows with alternate phasing. Branch circuit protective devices shall be bolted on circuit breakers unless otherwise indicated and these devices shall be interchangeable and removable without disturbing adjacent devices.

Panelboards operating at 240 volts phase to phase or less shall be rated at 240 volts AC with circuit breakers rated at 240 volts AC and, unless otherwise indicated, these circuit breakers shall have UL listed interrupting rating of not less than 22,000 RMS symmetrical amperes at 240 volts.

Unless otherwise indicated, panelboards operating at 480 volts shall be rated at 600 volts and with circuit breakers rated at 480 volts and, unless otherwise indicated, these circuit breakers shall have a UL listed interrupting rating of not less than 25,000 RMS symmetrical amperes.

Circuit breakers shall be molded case type, bolt on, with trip free handles and visual trip indicators.

Circuit Breakers

This specification shall apply to all circuit breakers which are not integral to panelboards.

Circuit breakers shall be UL listed, molded case, thermal magnetic, manually operated circuit breakers of the trip ratings shown or indicated. Unless otherwise indicated, circuit breakers shall be 3 pole. Unless otherwise indicated, circuit breakers shall be rated for use on 480 volt circuits. Multi pole circuit breakers shall have a common trip and single operating handles. Handles shall be trip free. Circuit breakers in 250 ampere frames and above shall have an adjustable magnetic trip setting. The circuit breakers shall indicate "ON", "OFF", and "TRIPPED" conditions. Unless otherwise indicated, circuit breakers shall have a UL listed interrupting rating of not less than 25,000 RMS symmetrical amperes at 480 volts. Where indicated or where required for indicated functions, circuit breakers shall be equipped with accessories such as shunt trips, auxiliary switches, and under voltage release.

Transformers

Unless otherwise indicated, transformers shall be general purpose dry type, 2 winding, of the capacities and voltage indicated.

Transformers 15KVA and below shall be indoor/outdoor type and those above 15KVA shall be indoor type unless otherwise indicated.

Unless otherwise indicated, transformers 3KVA and above shall have not less than four 2 1/2% taps in the high voltage winding, two above and two below rated primary volts.

Transformers shall be UL listed and shall meet all applicable NEMA, ANSI, UL, and IEEE standards.

Unless otherwise indicated, transformers shall have 220 degrees C Class insulation but shall be designed for a maximum temperature rise of 115 degrees C, over an ambient temperature of 40 degrees C.

Receptacles

Duplex convenience receptacles shall be premium specification grade with wide heavy wrap around support bridge, large deep slot terminal screws which permit back or side wiring, heavy walled area body and ground terminal lug. They shall conform to Federal Specification W C 596 Style X2 and NEMA Standard WD 1 1965. Unless otherwise indicated they shall be brown, 2 pole, 3 wire, NEMA configuration 5 20R, 20 ampere, 125 volt.

Receptacles installed outdoors or otherwise exposed to the weather shall be installed with weatherproof flap type covers and shall be of the Ground Fault Circuit Interrupter (GFCI) type, unless otherwise indicated.

Unless otherwise indicated, receptacles shall be installed with their centers 48 inches above the finished floor.

Clock receptacle shall be 3-wire, 15-ampere, 125-volt with hanger and flush stainless steel plate for each clock.

Toggle Switches

Toggle switches shall be premium specification grade with large deep slot terminal screws, silver cadmium oxide contacts and a rugged molded plastic body. The switches shall conform to Federal Specification W S 896, Specification Sheet W S 896/3. Unless otherwise indicated, the switches shall be single pole single throw (SPST), 20 ampere, with brown handles, rated for 120 277 volts AC only.

Switches installed outdoors or otherwise exposed to the weather shall have NEMA 4 covers. Switches in hazardous locations shall meet the NEC Class I, Division 1, Group D requirements.

Unless otherwise indicated, toggle switches shall be installed with their centers 48 inches above the finished floor.

Fluorescent Lighting Fixtures

Lighting fixtures shall be as indicated on the Drawings and they shall be provided complete with lamps and all necessary fixture wire for connection.

Fluorescent fixtures shall have spring loaded, high quality sockets which will hold lamps in place securely, even under conditions of vibration.

Lenses, shall be virgin acrylic.

Fixtures shall be complete with the frames, flanges, fittings, etc., required for the indicated installation. The fixtures shall be carefully examined for coordination with architectural and structural work.

Fluorescent ballasts shall be Standard Type ballasts as specified herein. Standard Type ballasts shall be UL listed, high power factor Certified Ballast Manufacturers (CBM) certified Class P ballasts with integral thermal protection.

Energy saving (high efficiency) fluorescent ballasts shall be used. These ballasts shall be of the standard core and coil type (non electronic) and shall be UL listed, high power factor, Certified Ballast Manufacturers (CBM) Certified Class P Ballasts with integral thermal protection. Ballasts shall be of the manufacturer's series for which the two lamp F40 size, when tested in accordance with ANSI C82.2, will have listed input watts of not more than 72 watts.

Fluorescent fixtures shall be for operation on a 120 volt supply.

The hut shall comply with latest applicable codes. The hut shall be Oldcastle Precast Communications Model 1215, or approved equal.

**INSTALLATION**
The installation shall include all work to install a foundation, as per manufacturer's recommendation, and hut for a complete system at a location designated by the Engineer. All hardware, wiring and mounting brackets shall be included in this item and not paid separately.

**BASIS OF PAYMENT:**
This work will be paid for at the contract unit price each for, **VIDEO COMMUNICATION HUT, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV02 VIDEO COMMUNICATION RACK, OPEN, FURNISH AND INSTALL

## AV03 VIDEO COMMUNICATION RACK, ENCLOSED, FURNISH AND INSTALL

**DESCRIPTION**
This item shall consist of furnishing and installing one video communication rack, at a location specified by the Engineer. The rack shall be EIA/TIA compliant.

Open Rack. The rack shall be a self-supporting rack, 19" or 23" wide, 7' high, Chatsworth Corp, P/No. 463-83-503 with a horizontal ring, 11564-523 and a vertical cable manager, 12831-703.

Enclosed Rack. The enclosed rack shall be 42U high, black, with solid sides, one door in front and split doors in the back. The doors shall be vented with a 64% open area. The enclosure shall have four casters rated for the weight rating of the enclosure. The enclosure shall be provided with four shelves and shall include a full height power strip. The enclosed rack shall be Middle Atlantic MRK-4026 series or approved equal.

All racks shall be provided with a minimum of 64 equipment mounting screws.

**INSTALLATION**
The installation shall include all work to install, the unit at a location designated by the Engineer, so as to provide a completely operational package. All hardware, wiring and mounting brackets shall be included in this item and not paid separately.

**BASIS OF PAYMENT:**
This work will be paid for at the contract unit price each for, **VIDEO COMMUNICATION RACK, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

**VIDEO COMMUNICATION RACK, OPEN, FURNISH AND INSTALL (AV02)**
**VIDEO COMMUNICATION RACK, ENCLOSED, FURNISH AND INSTALL (AV03)**

## AV04 VIDEO CONTROL WORKSTATION, FURNISH AND INSTALL

**DESCRIPTION**
This item shall consist of furnishing and installing a video control workstation with client software to select and control CCTV cameras. The video control workstation shall be a standard product of an established brand name company with a demonstrated track record of providing high-quality long-term maintenance

and service. The company shall have been producing leading-edge PC based components for a minimum of five years prior to the bid. The company shall provide nationwide service and support on a 7 day a week, 24 hour a day basis and shall maintain an 800 customer support service. All major components such as the motherboard, power supply, processor, memory, hard disk, optical drive, CD-ROM, integrated network interface card, audio and video components, shall be assembled and warranted by the computer's manufacturer. The workstation, as configured, shall be a standard model number of the manufacturer. Computers that are assembled from brand name components by system integrators or re-sellers will be considered "Clones" and are not acceptable.

Each workstation shall be equipped with the following as a minimum:

| | |
|---|---|
| Operating System: | Windows XP Pro, including all available service packs, shall be provided as a full version on CDROM. System restoration disks are not acceptable. |
| Hard disk: | 300 GB ATA-66/100 IDE (7200 rpm) or better. |
| Motherboard: | 800 MHz bus clock speed with minimum of 4 dedicated PCI slots. All slots shall support bus-mastering. A single Pentium IV 3.0 GHz CPU with 2 MB cache, or better, shall be provided. |
| Memory: | Minimum of 2 GB of memory. At least one memory bank shall remain open for future expansion. |
| Optical: | 2 Drives: one 48x CD-RW and one 16x DVD+/-RW or better |
| Video Card: | PCI Express 256 MB with DVI, VGA and TV output |
| Input Device: | A 3-button, optical mouse with wheel, and a full size keyboard. |
| Monitor: | One 17" flat-screen, anti-glare monitors shall be supplied for each work station. The monitor shall support a minimum resolution of 1600 x 1280 DPI at vertical refresh rate of minimum 100 Hz and horizontal refresh rate of 85 KHz. The monitor shall be energy star compliant. On-screen advanced control shall be supported. |
| 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. The card shall also support Netflex-3 technology. |
| Monitor: | The workstation shall be provided with a desk mount 19" active matrix TFT LCD monitor. The monitor shall have a minimum resolution of 1280 x 1024 pixels and a response time of 25 milliseconds. The contrast ratio shall be a minimum of 500:1. The monitor shall have both analog and digital (DVI) inputs. |
| Software: | The Contractor shall furnish client software, install, provision, and test software to select and control the CCTV cameras. The software shall be identical to the client software being installed under the Dan Ryan reconstruction contract. The software shall also include software to provide the ability to view the selected camera directly on the workstation monitor. |

**INSTALLATION**
The installation shall include all work to install, the unit at a location designated by the Engineer, so as to provide a completely operational package. All hardware, wiring, including fiber patch cords and mounting brackets shall be included in this item and not paid separately.

**BASIS OF PAYMENT:**
This work will be paid for at the contract unit price each for, **VIDEO CONTROL WORKSTATION, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV05 VIDEO COMMUNICATION LINK, FURNISH AND INSTALL

**DESCRIPTION**
This item shall consist of furnishing and installing a video communication links, 5.8 GHz, unlicensed microwave radios, consisting of two radios with integrated antennas, two 50m long outdoor rated Ethernet cables, two sets of mounting hardware, two power injectors to transmit one full motion video and PTZ control channels over Ethernet link. The unit shall be Tsunami QuickBridge.11 Model 5054-R or approved equal.

**INSTALLATION**
The installation shall include all work to install, wire, configure and test the complete system at a location designated by the Engineer, so as to provide a completely operational package. All hardware, wiring and mounting brackets shall be included in this item and not paid separately.

**BASIS OF PAYMENT:**
This work will be paid for at the contract unit price each for, **VIDEO COMMUNICATION LINK, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV06 VIDEO COMMUNICATION MUX, FURNISH AND INSTALL

**DESCRIPTION**
This item shall consist of furnishing and installing a video communication sonet mux, and configuring and mapping into the existing sonet network. The unit shall one Timing Communications Control Plus module, one 576 STS X-Connect module, one OC48 fiber media module, one chassis, two AIC controllers, and power supply and fan unit. The unit shall be CISCO, Model 15454, or approved equal.

**INSTALLATION**
The installation shall include all work to install, wire, configure and test the complete system at a location designated by the Engineer, so as to provide a completely operational package. All hardware, wiring, fiber patch cords and mounting brackets shall be included in this item and not paid separately.

**BASIS OF PAYMENT:**
This work will be paid for at the contract unit price each for, **VIDEO COMMUNICATION MUX, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV07 VIDEO COMMUNICATION POLE, FURNISH AND INSTALL

**DESCRIPTION**
This item shall consist of furnishing and installing a video communication pole, steel, galvanized, 75' tall, suitable for a 4' dish with a projected area of 13 $ft^2$ with a wind loading of 170 MPH.

**INSTALLATION**
The installation shall include all work to install, the unit at a location designated by the Engineer, so as to provide a completely operational package. All hardware, wiring and mounting brackets shall be included in this item and not paid separately.

**BASIS OF PAYMENT:**
This work will be paid for at the contract unit price each for, **VIDEO COMMUNICATION POLE, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV08 VIDEO COMMUNICATION SWITCH, FURNISH AND INSTALL

**DESCRIPTION**
This item shall consist of furnishing and installing a video communication switch, Gigabit Ethernet, rackmount, with forty-eight switched 10/100 Ethernet ports (RJ45) for video inputs (WS-X4148-RJ); six switched 1000 Ethernet fiber ports (WS-X4306GB) with one 1000Base-ZX extended reach fiber module (WS-G5487) and one 1000Base-SX fiber module (WS-G5484) ; one Supervisor III processor (WS-X4014) in a 6-slot chassis (WS-C4506) with 1300 W AC power supply (PWR-C45-1300ACV), and blank covers for empty slots. The unit shall be Cisco Catalyst Series 4500 with IOS Enhanced Layer 3 (S4KL3E-12119EW) software or approved equal.

**INSTALLATION**
The installation shall include all work to install, the unit at a location designated by the Engineer, so as to provide a completely operational package. All hardware, wiring, including fiber patch cords and mounting brackets shall be included in this item and not paid separately.

**BASIS OF PAYMENT:**
This work will be paid for at the contract unit price each for, **VIDEO COMMUNICATION SWITCH, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV09 VIDEO COMMUNICATION FIBER MEDIA CONVERTER LH, FURNISH AND INSTALL

## AV10 VIDEO COMMUNICATION FIBER MEDIA CONVERTER, FURNISH AND INSTALL

**DESCRIPTION**
This item shall consist of furnishing and installing a video communication fiber transceiver, industrial grade, to convert 10/100 Ethernet from copper to single mode fiber. The media converter shall be Hirschmann Model MM3-2FXS2/2TX1, RS2-FX-SM/FX-LH for long haul or approved equal.

**INSTALLATION**
The installation shall include all work to install, wire, configure and test the complete system at a location designated by the Engineer, so as to provide a completely operational package. All hardware, wiring, fiber patch cords and mounting brackets shall be included in this item and not paid separately.

**BASIS OF PAYMENT:**
This work will be paid for at the contract unit price each for, **VIDEO COMMUNICATION FIBER MEDIA CONVERTER, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

**VIDEO COMMUNICATION FIBER MEDIA CONVERTER LH, FURNISH AND INSTALL AV09**
**VIDEO COMMUNICATION FIBER MEDIA CONVERTER, FURNISH AND INSTALL AV10**

## AV11 VIDEO COMMUNICATION FIBER TRANSCEIVER, FURNISH AND INSTALL

**DESCRIPTION**

This item shall consist of furnishing and installing a video communication fiber transceiver, one channel, to transmit frequency modulation (FM) video and data over one optical fiber. The transceiver shall be Meridian Networks Model DT/R-1WIPMS-5D/ST series or IFS VT/R1530WDM to be compatible with the existing equipment, as designated by the Engineer, or approved equal.

**INSTALLATION**

The installation shall include all work to install, wire, configure and test the complete system at a location designated by the Engineer, so as to provide a completely operational package. All hardware, wiring, fiber patch cords and mounting brackets shall be included in this item and not paid separately.

**BASIS OF PAYMENT:**

This work will be paid for at the contract unit price each for, **VIDEO COMMUNICATION FIBER TRANSCEIVER, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV12 VIDEO COMMUNICATION FIBER SWITCH, FURNISH AND INSTALL

**DESCRIPTION**

This item shall consist of furnishing and installing a video communication fiber switch, industrial grade, with eight 10/100 Ethernet ports. The switch shall be Hirschmann Model MS2108-2, or approved equal.

**INSTALLATION**

The installation shall include all work to install, wire, configure and test the complete sytem at a location designated by the Engineer, so as to provide a completely operational package. All hardware, wiring and mounting brackets shall be included in this item and not paid separately.

**BASIS OF PAYMENT**

This work will be paid at the contract unit price each for, VIDEO COMMUNICATION FIBER SWITCH, FURNISH AND INSTALL, of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV13-16 VIDEO CODECS, FURNISH AND INSTALL

**DESCRIPTION**

Video encoders and video decoders (codecs) shall be dedicated hardware devices, and except for differences between encoders and decoders they shall all of the same type from the same common manufacturer. The codecs may be either single or dual channel video type to transfer “full motion” 30 frame-per-second high quality color video via MPEG-2 video compression at 1 to 15 Megabits per second. The units shall operate to produce a robust data communications stream that shall allow for both video and audio transmission and shall be immune to timing disruptions in the lP multi-cast configuration.

The Codecs shall be the standard product of an established North American manufacturer. The manufacturer shall have been in business for a minimum of 7 years. The manufacturer shall provide a minimum of a twelve (12) month warranty from the date of installation. The manufacturer shall provide technical support via email, fax and telephone. The above forms of support shall be provided Monday through Friday, 8:00am to 5:00pm EST. The Manufacturer shall also have a repair facility within North America.

The encoders shall be NKF Electronics #C-15 E/IP or C-15/SA for 1 channel encoders and iMpath #VSG1000 for 2 channel encoders or approved equal to be compatible with the existing equipment.

The units shall be rack-mountable, complete with redundant power supplies as required for the rack configurations indicated on the plans, operating from a 120-volt single phase AC power input.

Encoder units shall accept NTSC video BNC inputs and Ethernet RJ-45 control/communications input connections.

The encoders shall interface the serial communications port of the CCTV camera assembly through the fiber optic video link. Using the Ethernet port on the encoder and its IP address, commands shall be exchanged between the camera control computer at the Video Control Points and the serial port of the CCTV camera. Each video channel shall have at least one dedicated data channel.

The codecs shall conform to the following:

**Video**

| | |
|---|---|
| Analog Video | NTSC (30 fps) |
| Analog Video Connections | BNC, connector, 75 ohms; S-Video |
| Encoding Format | ISO/IEC 13818 MPEG-2 |
| Decoding Format | NTSC |
| Encoding Rate | 1 Mbps to 15 Mbps |
| Decoding Rate | 1 Mbps to 15 Mbps |
| G.O.P. Structure | User Selectable: I; I&P; I,B&P |
| Intra-picture Distance | 1 to 19 frames |
| Reference Distance | 0 to 2 frames |
| Resolution | D1, 720 x 480 |
| Codec Control | Web server, IP and HTML interface |
| MPEG-2 Stream Type | Transport |

**Low Speed Data Transmission**

| | |
|---|---|
| Interface | RS232, RS422, RS485 |
| Connections | DB-9, RJ-45 |
| Data Rate | 1.2Kbps to 115.2 Kbps |
| Format | Serial , asynchronous, RS-422 |
| Interface | IEEE 802.3 Ethernet |
| Network Connections | RJ-45 |
| Data Rate | 100 Mbps |
| Broadcast | Unicast / Multicast |
| Management | SNMP, Web server, C. L. I. |

**Physical Requirements**

| | |
|---|---|
| Operating Temperature | 0º to +70º C |
| Relative Humidity | 95% non-Condensing |

**Regulatory Requirements**

| |
|---|
| UL 1950 |
| FCC 47 CFR Part 15, Subpart B: 1999 Class A |

The Encoders/Decoders must support firmware updates from a central site. Updates must be downloadable to a single unit or by bulk via a single command from a firmware utility application via the Ethernet network. The firmware utility application must provide confirmation of the successful and unsuccessful updates. Upon completing of the update, the units must resume to original configuration without the need to reload the unit configuration.

**Special Submittal Requirements and Operational Demonstration**

As a part of the product catalog cut submittal, the Engineer may request that the Contractor provide a demonstration of the codecs at the time of the initial product submittal. The manufacturer shall demonstrate the following interoperability with at least one other codec manufacturer. Compatibility shall also include successful transmission of PTZ commands. The demonstration shall be comprised of the following parts:

- **Codec CCTV camera PTZ compatibility.** The demonstration shall include a pair of the proposed codecs, a proposed CCTV camera, and a CCTV camera of another manufacturer other than the proposed CCTV which is of a manufacturer already installed in the District 1 Video Distribution System.
- **Video interoperability.** The demonstration shall demonstrate the following interoperability: The proposed encoder shall be capable of encoding a video stream that is decodable by at least one other Manufacturer compiling with this specification, or of a manufacturer which equipment is presently in use by IDOT District 1 at the time of bidding. The interoperability demonstration shall be conducted in multicast mode.
- **Software video decoding.** A software based video decoder with PTZ control shall be provided for viewing and controlling a video stream remotely over the IP network.

All costs for this demonstration shall be included in the cost of this pay item. It is the Contractor's responsibly to provide all hardware and software to perform the demonstrations as specified.

**INSTALLATION**

The installation shall include all work to install, wire, configure and test the complete system at a location designated by the Engineer, so as to provide a completely operational package. All hardware, wiring and mounting brackets shall be included in this item and not paid separately.

**METHOD OF MEASUREMENT**

Video encoders or video decoders shall be counted, each.

**BASIS OF PAYMENT**

This work will be paid for at the contract unit price each of **VIDEO CODEC, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

**AV13 VIDEO COMMUNICATION ENCODER, 1 CHANNEL, FURNISH AND INSTALL**
**AV14 VIDEO COMMUNICATION ENCODER, 2 CHANNEL, FURNISH AND INSTALL**
**AV15 VIDEO COMMUNICATION DECODER, 1 CHANNEL, FURNISH AND INSTALL**
**AV16 VIDEO COMMUNICATION DECODER, 2 CHANNEL, FURNISH AND INSTALL**

## AV17-20 VIDEO COMMUNICATIONS MPEG4 CODECS, FURNISH AND INSTALL

**DESCRIPTION**

Video encoders and video decoders (codecs) shall be dedicated hardware devices, and except for differences between encoders and decoders they shall all of the same type from the same common manufacturer. The codec shall be either single or 4 channel MPEG4 video codec transfer “full motion” 30 frame-per-second high quality color. The units shall operate to produce a robust data communications stream that shall allow for both video and audio transmission and shall be immune to timing disruptions in the IP multicast configuration. The Codec shall also support PTZ camera control.

The Codec shall be the standard product of an established North American manufacturer. The manufacturer shall have been in business for a minimum of 7 years. The manufacturer shall provide a minimum of a twelve (12) month warranty from the date of installation. The manufacturer shall provide

technical support via email, fax and telephone. The above forms of support shall be provided Monday through Friday, 8:00am to 5:00pm EST. The Manufacturer shall also have a repair facility within North America.

**4 CHANNEL MPEG4 CODEC**

The 4 channel codec shall be rack mountable. Management of the codec shall be through a built-in web-interface, and a SNMPv2 agent.

**Encoder.**

The encoder shall be an Optelecom-NKF Electronics S-44E or approved equal.

The encoder shall have four digital signal processors (DSP), one per analog video input. Each DSP shall be capable of running two MPEG-4 encoders as well as an M-JPEG encoder for high quality MPEG-4 for live viewing, reduced frame rate MPEG-4 for time-lapse recording, and JPEG Image capture and transfer.

**Decoder.**

The decoder shall be a Optelecom-NKF Electronics S-44D or approved equal.

The decoder shall decode four incoming MPEG-4 streams and convert them to analog video signals to drive analog CCTV monitors. Each of the four channels shall have an independent decoder and each decoder shall have a dedicated DSP for optimal performance and crystal clear images. The decoder shall decode the video stream from the one channel MPEG4 encoder, specified elsewhere herein, as well as the 4 channel device.

The CODEC shall conform to the following technical requirements:

| **VIDEO** | |
|---|---|
| Video Channels | 4 |
| Input / Output Level | 1 Vp-p (+/- 3dB) |
| Input / Output impedance | 75Ω |
| Compression Algorithm | MPEG-4 SP Layer 5 (ISO/IEC 14496-2), M-JPEG |
| Number of encoders | 2 MPEG-4 and M-JPEG |
| Number of output streams | 10 multicast or unicast |
| Encoding-Decoding Latency | <200ms |
| Supported video resolutions | NTSC |
| D1 | 720 x 480 |
| HD1 | 352 x 480 |
| 2CIF | 720 x 240 |
| CIF | 352 x 240 |
| QCIF | 176 x 120 |
| Frame Rate | 1 to 30 fps |
| Video Motion Detection | Integrated |
| Video connector type | Four BNC, 75Ω |

| **DATA** | |
|---|---|
| Number of Channels | 1, full duplex |
| Number of Streams | 3, multicast or unicast |
| Interface | RS422/485, 2 or 4 wire |
| Format | Asynchronous, serial |
| Data Rate | 300 b/s to 19.2 kb/s |
| Lantency | <5ms |
| Connector type | 5-pin |

| **TRANSMISSION INTERFACE** | |
|---|---|
| Number of Interfaces | 1 |
| Interface | 10/100Base-TX Fast Ethernet (IEEE 802.3) Selectable: Auto Negotiation, Half/Full Duplex, 10/100 Mbps |
| Protocols | MPEG-4 ES, JPEG, RTP, RTCP, TCP, UDP, IP, DHCP, IGMPv2, RTSP, (S)NTP, MX/IP, HTTP, SNMPv2, FTP |
| Connector | RJ45 |

| **ENVIRONMENTAL** | |
|---|---|
| Operating Temperature | -10° to +60°C<br>+14° to 140°F |
| Relative Humidity | <95% (no condensation) |
| MTBF | >200,000 hours |
| Safety and EMC | IEC/EN 60950-1, IEC/EN 60825, IEC/EN 61000, EN 50130-4, EN 50081-1, EN 55022, FCC PART 15 |

## 1 CHANNEL MPEG4 CODEC

**DESCRIPTION**

Video encoder (codec) shall be a dedicated hardware device. The codec shall be a single channel MPEG4 video codec transferring “full motion” 30 frame-per-second high quality color. The unit shall operate to produce a robust data communications stream that shall allow for both video and audio transmission and shall be immune to timing disruptions in the IP multicast configuration. The Codec shall also support PTZ camera control.

The Codec shall be the standard product of an established North American manufacturer. The manufacturer shall have been in business for a minimum of 7 years. The manufacturer shall provide a minimum of a twelve (12) month warranty from the date of installation. The manufacturer shall provide technical support via email, fax and telephone. The above forms of support shall be provided Monday through Friday, 8:00am to 5:00pm EST. The Manufacturer shall also have a repair facility within North America

The encoder shall be an Optelecom-NKF Electronics C-40 or approved equal.

Configuration and management shall be through a built in web-interface, serial USB console port.

**Encoder.**

The codec shall have a dual-core encoder that can simultaneously stream two different video formats; both formats (resolution and frame/s) shall be configurable independently. The codec shall support IGMPv2 multicast. The codec shall incorporate with two-way serial data transmission for PTZ control, and two-way contacts (e.g., for alarm contacts), and motion detection (VMD).

**Decoder.**

The encoded MPEG4 stream shall be decoded by the 4-channel MPEG4 decoder as described in the specification for the 4 channel MPEG4 Codec.

The CODEC shall conform to the following technical requirements:

| **VIDEO** | |
|---|---|
| Video Channels | 1 |
| Input / Output Level | 1 Vp-p (+/- 3dB) |
| Input / Output impedance | 75Ω |
| Compression Algorithm | MPEG-4 |
| Number of encoders | 2 MPEG-4 |
| Number of output streams | 5 multicast or unicast |
| Encoding-Decoding Latency | <200ms |
| Supported video resolutions | NTSC |
| D1 | 720 x 480 |
| HD1 | 352 x 480 |
| 2CIF | 720 x 240 |
| CIF | 352 x 240 |
| QCIF | 176 x 120 |
| Frame Rate | 1 to 30 fps |
| Video Motion Detection | Integrated |
| Video connector type | BNC, 75Ω |

| **DATA** | |
|---|---|
| Number of Channels | 1, full duplex |
| Number of Streams | 3, multicast or unicast |
| Interface | RS422/485, 2 or 4 wire |
| Format | Asynchronous, serial |
| Data Rate | 300 b/s to 19.2 kb/s |
| Lantency | <5ms |
| Connector type | RJ45 |

| TRANSMISSION INTERFACE | |
|---|---|
| Number of Interfaces | 1 |
| Interface | 10/100Base-TX Fast Ethernet (IEEE 802.3)<br>Selectable: Auto Negotiation, Half/Full Duplex, 10/100 Mbps |
| Protocols | MPEG-4 ES, JPEG, RTP, RTCP, TCP, UDP, IP, DHCP, IGMPv2, RTSP, (S)NTP, MX/IP, HTTP, SNMPv2, FTP |
| Connector | RJ45 |

| ENVIRONMENTAL | |
|---|---|
| Operating Temperature | 0° to +50°C<br>+32° to 122°F |
| Relative Humidity | <95% (no condensation) |
| MTBF | >200,000 hours |
| Safety and EMC | IEC/EN 60950-1, IEC/EN 60825, IEC/EN 61000, EN 50130-4, EN 50081-1, EN 55022, FCC PART 15 |

**BASIS OF PAYMENT**

This work will be paid for at the contract unit price each of **VIDEO COMMUNICATIONS MPEG4 CODECS, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

**AV17 VIDEO COMMUNICATION MPEG4 ENCODER, 4 CHANNEL, FURNISH AND INSTALL**
**AV18 VIDEO COMMUNICATION MPEG4 DECODER, 4 CHANNEL, FURNISH AND INSTALL**
**AV19 VIDEO COMMUNICATION MPEG4 ENCODER 1 CHANNEL, FURNISH AND INSTALL**
**AV20 VIDEO COMMUNICATION MPEG4 DECODER, 1 CHANNEL, FURNISH AND INSTALL**

## AV21 VIDEO COMMUNICATIONS MPEG4, CHASSIS RACK, FURNISH AND INSTALL

**DESCRIPTION**

The MPEG4 chassis rack shall be produced by the same manufacturer as the MPEG4 Codec device described elsewhere herein. The rack shall provide serial communication and I/O connectors at the rear of each slot, and a single network connection together with an integrated power supply. The MPEG4 capture cards shall be hot swappable.

The MPEG4 rack chassis shall conform to the following technical requirements:

| | |
|---|---|
| Expansion slots | 8 |
| Connectors | Ethernet 10BaseT/100BaseTX/1000BaseT (Gigabit Ethernet), RJ-45<br>Terminal block (x 3):<br>4 alarm inputs<br>4 outputs<br>RS-485/422 half-duplex port |
| Power | 100 - 240 V AC, 1.9 A max 80 W (with 3x243Q) |
| Operating conditions | 0 - 45 ºC (32 - 113 ºF)<br>Humidity 20 - 80% RH (non-condensing) |
| Approvals | EN 61000-6-1, EN 61000-6-2, EN 55024, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3<br>FCC Part 15 Subpart B Class B, AS/NZS CISPR 22, ICES-003, VCCI Class B, ITE, EN 60950-1, CB-certificate, UL, cUL, KTL |

**BASIS OF PAYMENT**

This work will be paid for at the contract unit price each of **VIDEO COMMUNICATIONS MPEG4, CHASSIS RACK, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV22 VIDEO JPEG CAPTURE DEVICE, 4 CHANNEL, FURNISH AND INSTALL

**DESCRIPTION**

The JPEG capture device shall be a dedicated hardware device. The capture device shall be a four channel device. The unit shall operate to produce a robust data communications stream that shall allow for both video and audio transmission and shall be immune to timing disruptions in the lP multicast configuration. The capture device shall also support PTZ camera control.

The JPEG capture device shall be the standard product of an established North American manufacturer. The manufacturer shall have been in business for a minimum of 7 years. The manufacturer shall provide a minimum of a twelve (12) month warranty from the date of installation. The manufacturer shall provide technical support via email, fax and telephone. The above forms of support shall be provided Monday through Friday, 8:00am to 5:00pm EST.

For compatibility with existing equipment, the capture device shall be an Axis Communications 243Q Blade Video Server, or approved equal.

Configuration and management shall be through a built in web-interface.

The capture device shall be capable of producing simultaneous MPEG-4 and Motion JPEG. Video streams which can be optimized for image quality and bandwidth efficiency by configuration of frame rate, resolution, compression level and format resulting in up to 30 frames per second in 4CIF resolution.

The JPEG capture device shall include a comprehensive set of network security features, such as multilevel password protection, IP address filtering and HTTPS encryption.

The JPEG capture device shall support Quality of Service (QoS). The device shall also include support for Internet Protocol version 6 (IPv6). The support for 802.1X network access control is used to authenticate hosts wishing to access devices or resources on a protected network.

The JPEG Capture Device shall conform to the following technical requirements:

| | |
|---|---|
| Video compression | Motion JPEG<br>MPEG-4 Part 2 (ISO/IEC 14496-2), Profiles: ASP and SP |
| Resolutions | 4CIF, 2CIFExp, 2CIF, CIF, QCIF<br>Max 704x480 (NTSC) 704x576 (PAL)<br>Min 160x120 (NTSC) 176x144 (PAL) |
| Frame rate (NTSC/PAL) | Up to 30/25 per channel in all resolutions (Motion JPEG or MPEG-4) |
| Video streaming | Simultaneous Motion JPEG and MPEG-4<br>Controllable frame rate and bandwidth<br>Constant and variable bit rate (MPEG-4) |

| | |
|---|---|
| Image settings | Compression levels: 11 (Motion JPEG) /23 (MPEG-4)<br>Rotation: 90º, 180º, 270º<br>Aspect ratio correction<br>Color: color, black & white<br>Overlay capabilities: time, date, text, image or privacy mask<br>De-interlace filter |
| Pan/Tilt/Zoom | A wide range of analog PTZ dome cameras is supported, free drivers available at www.axis.com<br>20 presets/camera, Guard tour, PTZ control queue<br>Supports Windows compatible joysticks |
| Security | Multiple user access levels with password protection<br>IP address filtering, HTTPS encryption, IEEE 802.1X authentication |
| Alarm and event management | Events triggered by video motion detection, external inputs or according to a schedule<br>Image upload over FTP, email and HTTP<br>Notification over TCP, email, HTTP and external outputs<br>Pre- and post alarm buffer of 9 MB per channel (approx. 4 min of CIF resolution video at 4 frames per second) |
| Connectors | 4 BNC analog composite video inputs, NTSC/PAL autosensing<br>Via AXIS 291 1U Video Server Rack:<br>Ethernet 10BaseT/100BaseTX/1000BaseT (Gigabit Ethernet)<br>4 alarm inputs, 4 alarm outputs, RS-485/422 half-duplex port |
| Processors, memory and clock | CPU: 4 ETRAX 100LX 32bit<br>Video processing and compression: 4 ARTPEC-2<br>RAM: 4x32 MB<br>Flash: 4x8 MB<br>Battery backed up real-time clock |
| Operating conditions | 0 - 45 ºC (32 - 113 ºF)<br>Humidity 20 - 80% RH (non-condensing) |
| Installation, management and maintenance | AXIS Camera Management tool on CD and web-based configuration<br>Configuration of backup and restore<br>Firmware upgrades over HTTP or FTP, |
| Video access from Web browser | Camera live view for up to 20 clients, Video recording to file (ASF), Sequence tour for up to 20 PTZ presets<br>Customizable HTML pages |
| System integration Support | Open API for application integration, including AXIS VAPIX API*, AXIS Media Control SDK*, event trigger data in video stream<br>Quality of Service (QoS) Layer 3, DiffServ Model<br>Watchdog ensures continuous operation, event notifications can be monitored by other systems<br>Embedded Linux operating system |
| Supported protocols | IPv4/v6, HTTP, HTTPS, SSL/TLS*, TCP, QoS, SNMPv1/v2c/v3 (MIB-II), RTSP, RTP, UDP, IGMP, RTCP, SMTP, FTP, ICMP DHCP, UPnP, Bonjour, ARP, DNS, DynDNS, SOCKS, IEEE802.1X. |
| Approvals | EN 61000-6-1, EN 61000-6-2, EN 55024, EN 55022 Class B EN 61000-3-2, EN 61000-3-3, FCC Part 15 Subpart B Class B, AS/NZS CISPR 22, ICES-003, VCCI Class B, ITE EN 60950-1 |

**BASIS OF PAYMENT**

This work will be paid for at the contract unit price each of **VIDEO JPEG CAPTURE DEVICE, 4 CHANNEL, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV23 VIDEO JPEG CAPTURE DEVICE, CHASSIS RACK, FURNISH AND INSTALL

**DESCRIPTION**

The JPEG capture device chassis rack shall be produced by the same manufacturer as the JPEG capture device described elsewhere herein. The rack shall provide serial communication and I/O connectors at the rear of each slot, and a single network connection together with an integrated power supply. The JPEG capture cards shall be hot swappable.

The JPEG Capture Device rack chassis shall conform to the following technical requirements:

| | |
|---|---|
| Expansion slots | 3 slots for 3, 4-channel JPEG capture devices |
| Connectors | Ethernet 10BaseT/100BaseTX/1000BaseT (Gigabit Ethernet), RJ-45<br>Terminal block (x 3):<br>4 alarm inputs<br>4 outputs<br>RS-485/422 half-duplex port |
| Power | 100 - 240 V AC, 1.9 A max 80 W (with 3x243Q) |
| Operating conditions | 0 - 45 ºC (32 - 113 ºF)<br>Humidity 20 - 80% RH (non-condensing) |
| Approvals | EN 61000-6-1, EN 61000-6-2, EN 55024, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3<br>FCC Part 15 Subpart B Class B, AS/NZS CISPR 22, ICES-003, VCCI Class B, ITE, EN 60950-1, CB-certificate, UL, cUL, KTL |

**BASIS OF PAYMENT**

This work will be paid for at the contract unit price each of **VIDEO JPEG CAPTURE DEVICE, CHASSIS RACK, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV24 VIDEO COMMUNICATION WIRELESS MESH NODE, FURNISH AND INSTALL.

**DESCRIPTION.**

The wireless mesh node shall be designed for outdoor operation, and shall transport concurrent video, voice, and data applications. The mesh shall be self-forming and self-healing to enable rapid deployment and dependable operation. The routing protocol shall manage network load and network traffic congestion to optimize mesh-wide performance and capacity.

The mesh node shall provide up to 70 Mbps throughput and operate at 2.4 GHz, 4.9 GHz (U.S. public safety licensed band), or 5 GHz.

To maximize performance, the node shall utilize dual-radios which support two radio modes. In the bonded mode, both radios shall combined to operate as a single unit that provides double the bandwidth of a single radio equivalent. In linear mode, both radios shall operate independently enabling sustained bandwidth levels over an unlimited number of hops.

The mesh node shall provide maximum security of data. The node shall incorporate WEP and WPA2 encryption between nodes and AES encryption from ingress to egress. All Layer 3 IP data shall be encapsulated and accessible only to other mesh nodes. The nodes shall also support VLANs, segmenting traffic with secure access control on same physical infrastructure. The wireless mesh nodes shall comply with all Ethernet transport standards.

The manufacturer shall provide one year warranty on the hardware.

**Radio Requirements.**

The node shall support up to two radios dedicated for backhaul switching capability. The mesh nodes shall support 802.11a, 802.11b, 802.11g and the licensed 4.9 GHz band on the same physical hardware and shall support a maximum output power of 400 mW.

The wireless mesh nodes shall support the following receive sensitivities:

2.4 GHz, DSSS - 1 Mbps: -95 dBm; 11 Mbps: -88 dBm
2.4 GHz, OFDM - 6 Mbps: -90 dBm; 11 Mbps: -73 dBm
5 GHz - 6 Mbps: -90 dBm; 11 Mbps: -73 dBm

The wireless mesh nodes shall provide ability to automatically eliminate weak radio links in the network and shall provide the ability to configure any channel. The wireless mesh nodes shall support dynamic frequency channel selection. The wireless mesh nodes shall support transmit power control (TPC). The wireless mesh nodes shall provide software control over the two radios for different radio configurations and topologies. The two radios could be combined together to form a logical single radio. The wireless mesh nodes shall provide the ability to recover neighbor radio nodes in different bands and frequencies.

**Interfaces.**

The wireless mesh node shall support three 10/100BaseT Ethernet switch ports using environmentally sealed connectors. The node shall support DC pass through on the Ethernet connectors and shall support 802.3af PoE standard and be able to power two devices that are capable of deriving power over Ethernet. The wireless mesh nodes shall provide the ability to bridge multiple wireless networks using Ethernet. The mesh nodes shall support user defined & prioritized static routes to allow uni-directional flow between source node and destination node with zero or more intermediate nodes. Each static route on the Source Node can be assigned the following client traffic entering the Source Node and exiting at a Destination Node: All client traffic, all client traffic entering an Ethernet Port or, all client traffic with a particular VLAN Static routes can be selected between any two source and destination nodes having max 10 hops between them. Static route should fall back to a dynamic route if the Static Route is down because of a down link.

**Throughput Requirements.**

The wireless mesh node shall support up to 70 Mbps throughput in a bonded mode of operation with allowance for throughput degradation. The node shall support up to 35 Mbps sustained throughput anywhere in the wireless network across multiple hops. The mesh nodes shall support low latency of the order of 1.5ms per hop on an average and maximum of 2ms per hop.

**Quality of Service (QoS) Requirements.**

The wireless mesh node shall have simultaneous support for video, voice and data multi services. The node shall support port based QoS and 802.1p standards based QoS and also support VLANs and VLAN trunking. The wireless mesh nodes shall provide load balancing on alternate routing paths between source and destination MAC addresses. The wireless mesh nodes shall provide congestion control within the network.

**Management Requirements.**

The wireless mesh nodes shall provide management interfaces via HTTP, SNMP, GUI. As well as dedicated manufacturer software specified elsewhere herein. The management architecture shall be a client-server architecture with multiple clients logging into the server. The management station shall

provide statistics and alarms and events on a per radio basis. The hardware shall provide system status LEDs for power, mesh, faults. The wireless mesh node shall support remote software upgrade ability. The wireless mesh node shall support telnet access. The management system will provide single integrated management for both wireless mesh nodes and access points.

**Security Requirements.**

The wireless mesh node shall support user name and password security for all Ethernet and serial interfaces. The wireless mesh nodes shall support hardware based encryption. The wireless mesh nodes shall have the capability to distinguish between radios that are part of their network from radios that are not. The wireless mesh nodes shall support manufacturing based digital certificates on each node that authenticates with the network. The digital certificate mechanism shall have the ability to have user defined / signed certificates. The wireless mesh nodes shall have digitally signed firmware files. The wireless mesh nodes shall have the ability to lockout malicious users as they try to access the network. The wireless mesh nodes shall support 128 and 256-bit AES, 64/128 bit WEP, and 256-bit WPA2 encryption keys. The wireless mesh nodes shall support ESSID encryption. The HotPort 6000 series mesh nodes shall support MAC address filtering. The hardware shall provide for physical security via a lockable mounting bracket.

**Scalability Requirements.**

The wireless mesh node shall support mesh networks of up to 1000 nodes. The network shall provide the ability to have Ethernet interfaces as part of the routing domain to make use of the wire where it is available. The wireless mesh nodes shall provide the ability to connect multiple wireless mesh networks using Ethernet bridging. The wireless mesh nodes shall support multiple gateway interconnects for large networks and increased throughput.

**Mobility Requirements.**

The wireless mesh node shall support mesh node mobility at high speeds with low handoff times between roaming nodes and shall support 802.11 client mobility across multiple Layer 3 domains. The mesh network shall maintain connections while moving at speeds greater than 90 MPH (145 KPH).

**Power Requirements.**

All wireless hardware shall support 90–240 VAC, 50/60 Hz, at 0.9A and shall also support 16 VDC input.

**Physical & Environmental Requirements.**

The wireless mesh node enclosure shall be NEMA 4X/IP67 rated for outdoors. The wireless mesh nodes shall include surge suppression protection. The node shall have weather proof antenna connectors and shall be pole and/or wall mountable (with low profile mounting). The outdoor nodes shall have the following environmental specifications:

| | |
|---|---|
| Operating temperature | -40ºC to +60ºC |
| Storage temperature | -40ºC to +85ºC |
| Humidity (non-condensing) | 10% to 90% |
| Storage humidity (non-condensing) | 5% to 95% |
| Maximum altitude | 15,000 feet (4600 meters) |

Unless otherwise specified the access points shall be FireTide 6202 dual radio or approved equal.

**BASIS OF PAYMENT**

This work will be paid for at the contract unit price each of **VIDEO COMMUNICATION WIRELESS MESH NODE, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV25 VIDEO COMMUNICATION WIRELESS MESH NODE OMNI-DIRECTIONAL ANTENNA, FURNISH AND INSTALL

**Description.**

The antenna shall be a 10 dBi omnidirectional antenna designed to provide maximum performance and reliability. The antenna shall be UV-stable, vented fiberglass radome that provides protection against weather elements. The antenna shall comply with the following requirements:

| Electrical Requirement | Typical Value |
|---|---|
| Frequency Range | 5.1-5.9 GHz |
| Gain @ 5.8 GHz | 10 dBi |
| Nominal Impedance | 50 Ω |
| VSWR | 1.5 max |
| Radiation Pattern | Omnidirectional |
| Vertical Beam Width | 7° |
| Polarization | Vertical |

| Mechanical Requirements | Value |
|---|---|
| Connector | N, female |
| Operating Temp Range | -20°C to 65°C |
| Height | 16.5 inches |
| Mounting Base Diameter | 1.125 inches |
| Weight | 0.5 lbs |

**BASIS OF PAYMENT**

This work will be paid for at the contract unit price each of **VIDEO COMMUNICATION WIRELESS MESH NODE OMNI-DIRECTIONAL ANTENNA, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV26 VIDEO COMMUNICATION WIRELESS MESH NODE SECTOR ANTENNA, FURNISH AND INSTALL

**Description.**

The antenna shall be a 16 dBi sector (directional) panel antenna provides wideband coverage from 4.9 GHz to 5.9 GHz frequencies with a VSWR of less than 1.7. The antenna shall have user adjustable horizontal beamwidths of 60° or 90°. The antenna shall include an adjustable pipe mount permiting an uptilt or downtilt adjustment of +/-15 degrees for more precise coverage of the geographic area. The antenna shall also comply with the following requirements:

| Electrical Requirement | Typical Value |
|---|---|
| Frequency Range | 5.1-5.9 GHz |
| Gain @ 5.8 GHz | 16 dBi @ 60°, 15 dBi @ 90° |
| Nominal Impedance | 50 Ω |
| VSWR | 1.7 max |
| Radiation Pattern | Directional, 60-90° adjustable |
| Front/Back ratio | 32 dB |
| Vertical Beam Width | 8° |
| Polarization | Vertical |

| Mechanical Requirements | Value |
|---|---|
| Connector | N, female |
| Operating Temp Range | -30°C to 75°C |
| Max Wind | 125 MPH |
| Equivalent Flat Plate Area | 0.44 sq ft w/o flaps<br>1.35 sq ft w/ flaps |
| Lateral Thrust @ 125 MPH | 60 lbf w/o flaps<br>120 lbf w/ flaps |
| Size | 24x6x3 inches |
| Weight | 0.5 lbs |

**BASIS OF PAYMENT**

This work will be paid for at the contract unit price each of **VIDEO COMMUNICATION WIRELESS MESH NODE SECTOR ANTENNA, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV27 VIDEO COMMUNICATION WIRELESS ACCESS POINT, FURNISH AND INSTALL

**Description.**

The Wireless access point shall deliver a modular access solution for large scale, indoor and outdoor wire less mesh networks. Modular design enables full network and software integration of the access points with the wireless mesh nodes specified elsewhere herein while at the same time permitting independent physical placement of the hard ware to provide optimal accessibility for Wi-Fi clients. The access points shall have rugged NEMA 4X/IP67-rated cast aluminum enclosures and have one weather proof connector for attaching to the wireless node or an Ethernet port.

Management of the access points shall be with the same software used to manage the wireless nodes specified elsewhere herein.

The access point shall have advanced security and operate in the 2.4 GHz band and feature PA2 and WEP encryption, up to 16 SSIDs, industry compliant QoS, and durable enclosures. High-power radios with up to 400 mW provide extended reach and outstanding penetration. Designed for Hot Spots Layered service levels can be enabled through Virtual APs (VAPs) and Virtual AP
Groups. Each HotPoint AP supports up to 16 VAPs, creating different logical networks with varying levels of security, access, and performance. Additional Hot Spot features include user-based rate limiting and intracell blocking.

Unless otherwise specified the access points shall be FireTide 4600 or approved equal.

**BASIS OF PAYMENT**

This work will be paid for at the contract unit price each of **VIDEO COMMUNICATION WIRELESS ACCESS POINT, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV28 VIDEO COMMUNICATION WIRELESS MESH NODE SUBSCRIBER PANEL ANTENNA, FURNISH AND INSTALL

**Description.**

The antenna shall be a 16 dBi sector (directional) panel antenna provides wideband coverage from 4.9 GHz to 5.9 GHz frequencies with a VSWR of less than 1.7. The antenna shall have user adjustable horizontal beamwidths of 60° or 90°. The antenna shall include an adjustable pipe mount permiting an uptilt or downtilt adjustment of +/-15 degrees for more precise coverage of the geographic area. The antenna shall also comply with the following requirements:

| Electrical Requirement | Typical Value |
|---|---|
| Frequency Range | 5.1-5.9 GHz |
| Gain @ 5.8 GHz | 16 dBi @ 60°, 15 dBi @ 90° |
| Nominal Impedance | 50 Ω |
| VSWR | 1.7 max |
| Radiation Pattern | Directional, 60-90° adjustable |
| Front/Back ratio | 32 dB |
| Vertical Beam Width | 8° |
| Polarization | Vertical |

| Mechanical Requirements | Value |
|---|---|
| Connector | N, female |
| Operating Temp Range | -30°C to 75°C |
| Max Wind | 125 MPH |
| Equivalent Flat Plate Area | 0.44 sq ft w/o flaps<br>1.35 sq ft w/ flaps |
| Lateral Thrust @ 125 MPH | 60 lbf w/o flaps<br>120 lbf w/ flaps |
| Size | 24x6x3 inches |
| Weight | 0.5 lbs |

This work will be paid for at the contract unit price each of **VIDEO COMMUNICATION WIRELESS MESH NODE SUBSCRIBER PANEL ANTENNA, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV29 VIDEO COMMUNICATION WIRELESS MANAGEMENT EQUIPMENT, FURNISH AND INSTALL

**DESCRIPTION.**

The wireless node manufacturer shall provide software which incorporates a number of unique flow control, traffic prioritization and management capabilities to deliver high throughput and low latency needed to support concurrent voice, video and data communications.

Bandwidth metrics improve overall throughput by selecting best transmission
paths based on link capacity, link type, hop count, and link retransmission count. During high network utilization, the software shall manage and mitigate traffic congestion on a per flow basis. Three levels of congestion control are triggered by traffic in transmit queues and overall link capacity.

Mesh traffic can be prioritized by Ethernet port or by 802.1p QoS based high, medium, or low field values in order to optimize video or voice applications.

Flow-based routing traffic is balanced across the mesh to best optimize aggregate throughput and increase network performance. Flows are established between source and destination nodes and are balanced based on link-specific traffic loads and class-of-service priorities.

Network performance can be optimized in crowded environments by manually removing redundant links from the mesh. To reduce network traffic and improve overall performance, broadcasts can be contained to a single mesh or multiple contiguous meshes.

Static Route Assignments can be implemented to ensure the highest possible performance between any two source and destination nodes. In poor RF environments transmit data rates can be locked-in at a lower rate to reduce re-transmissions and ensure constant throughput. Multi-Hop optimization reduces contention in mesh topologies with numerous redundant paths. Received Signal Strength (RSSI) Threshold settings prioritize paths by link quality. For improved performance over longer distance routes, the Extended Range feature enables timing parameters to be optimized for longer propagation times.

Adjustable transmit power levels minimize interference within the mesh, while Dynamic Frequency Selection (DFS) minimizes radio/radar interference. Virtual LANs segment and direct traffic along specific VLAN routes.

The software shall provide real-time monitoring and statistics. The information shall include network status, performance statistics, and current/logged faults. Statistics and log files shall be exported for offline analysis. The fault log displays the severity, date and time, node location, fault type, and description of every fault or error encountered on the mesh.

The software shall provide inventory management. The information captured and maintained shall provide an automatic, up-to-date inventory of all nodes. Details about each node include its model number, serial number, radio MAC address and software
version. The software shall allow assignment of unique node names and a description of each node's physical location.

The software shall provide nodal radio software updates. The software shall allow all or selected nodes in any mesh network to receive software updates concurrently in one operation. Software updates shall utilize node security with certificate-based firmware upgrades which require nodes to accept upgrades only from digitally signed sources.

Mesh Configuration. The software shall manage the default settings of the mesh nodes and can be changed mesh-wide with a single action. Mesh-wide configuration parameters shall include radio mode and channels, Extended Service Set Identifier (ESSID), mesh IP address, and the traffic encryption type and strength.

Individual Node Configuration. The software also provides centralized control over all nodes in the mesh network(s). Administrators can view details in a dropdown node summary display, and make changes to the node's configuration of Ethernet ports, assigned name and location description, and transmit power setting. If a node should become "lost" due to power failure or DFS, for example, the software enables the mesh to find the lost node and bring its configuration up to date.

Custom Backgrounds. The software views can be customized with an imported background bitmap image, such as a street map, or aerial photograph. The individual nodes are then "dragged and dropped" to their real-world physical location. The resulting display shows the actual layout of the mesh topology, complete with lines indicating the many links or hops (wireless or wired) among all nodes.

**BASIS OF PAYMENT**

This work will be paid for at the contract unit price each of **VIDEO COMMUNICATION WIRELESS MANAGEMENT EQUIPMENT, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV30 VIDEO COMMUNICATIONS CHASSIS RACK, 1 CHANNEL, FURNISH AND INSTALL

**DESCRIPTION**

This item shall consist of furnishing, installing and integrating a completely operational 1 channel video communications chassis rack at locations directed by the Engineer. The 1 channel MPEG2 chassis rack shall be produced by the same manufacturer as the 1 channel MPEG2 Codec device described elsewhere herein. The rack shall provide serial communication and I/O connectors at the rear of each slot, and a single network connection together with an integrated power supply. The MPEG2 codecs shall be hot swappable.

The rack shall conform to the following technical requirements:

| | |
|---|---|
| Expansion slots | 11 |
| Connectors | Ethernet 10BaseT/100BaseTX/1000BaseT (Gigabit Ethernet), RJ-45<br>Terminal block (x 3):<br>4 alarm inputs<br>4 outputs<br>RS-485/422 half-duplex port |
| Power | 100 - 240 V AC, 1.9 A max 80 W (with 3x243Q) |
| Operating conditions | 0 - 45 ºC (32 - 113 ºF)<br>Humidity 20 - 80% RH (non-condensing) |
| Approvals | EN 61000-6-1, EN 61000-6-2, EN 55024, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3<br>FCC Part 15 Subpart B Class B, AS/NZS CISPR 22, ICES-003, VCCI Class B, ITE, EN 60950-1, CB-certificate, UL, cUL, KTL |

**BASIS OF PAYMENT**
This work will be paid for at the contract unit price each of **VIDEO COMMUNICATIONS, CHASSIS RACK, 1 CHANNEL, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AV31 VIDEO COMMUNICATIONS CHASSIS RACK, 2 CHANNEL, FURNISH AND INSTALL

**DESCRIPTION**
This item shall consist of furnishing, installing and integrating a completely operational 1 channel video communications chassis rack at locations directed by the Engineer. The 2 channel MPEG2 chassis rack shall be produced by the same manufacturer as the 2 channel MPEG2 Codec device described elsewhere herein. The rack shall provide integrated power supply. The MPEG2 codecs shall be hot swappable.

The rack shall conform to the following technical requirements:

| | |
|---|---|
| Expansion slots | 12 |
| Connectors | Ethernet 10BaseT/100BaseTX/1000BaseT (Gigabit Ethernet), RJ-45<br>Terminal block (x 3):<br>4 alarm inputs<br>4 outputs<br>RS-485/422 half-duplex port |
| Power | 100 - 240 V AC, 1.9 A max 80 W (with 3x243Q) |
| Operating conditions | 0 - 45 ºC (32 - 113 ºF)<br>Humidity 20 - 80% RH (non-condensing) |
| Approvals | EN 61000-6-1, EN 61000-6-2, EN 55024, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3<br>FCC Part 15 Subpart B Class B, AS/NZS CISPR 22, ICES-003, VCCI Class B, ITE, EN 60950-1, CB-certificate, UL, cUL, KTL |

**BASIS OF PAYMENT**
This work will be paid for at the contract unit price each of **VIDEO COMMUNICATIONS, CHASSIS RACK, 2 CHANNEL, FURNISH AND INSTALL,** of the type indicated, which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AVL1 AUTOMATIC VEHICLE LOCATOR (AVL), FURNISH ONLY

**DESCRIPTION**
This item shall consist of furnishing a completely operational AVL, status and two-way text messaging units approved by the IDOT Engineer to State stock. The units shall include: 1) a wireless data transceiver, 2) GPS receiver and 3) Operator/vehicle interface. The units shall have been in use in

highway and/or other similar vehicle tracking applications over the last two years with an installed base over 1000 units and shall have a warranty of two year parts and factory labor by the equipment manufacturer. The unit shall be PRI Model RDT-0195 or approved equal and shall coordinate with current AVL equipment and software.

The units shall automatically send, based on a programmed criteria, and/or shall send, in response to a request from the central controller, the information about the vehicle's location, status, etc. The units shall transmit and receive information, time and date stamped, as follows, over the Department's radio communication network:

- Update and transmit location, speed and direction at every 5 minutes factory-set interval, which shall be user-adjustable from 2 minutes to 3 hours, either locally or remotely from the central controller.
- Transmit vehicle status messages, entered manually by the driver via keypad, up to 99 status messages, and transmit status inputs, up to 6, either from its input module or from the vehicle data ports, to indicate plow position, salt spreader activation, etc. However, furnishing and installing of these external devices is not included in the scope of this item.
- Receive the above status messages and show them on a 2 line 16 character display.
- Transmit radio call number and driver's name with each location/status message. This information will be entered via the swipe card reader and will be a combination of alpha numeric characters up to 20 characters long. The card reader shall comply with ANSI X4.13 and X4.16.

The communication protocol to be provided shall be based on the protocol used by the Department's radio communication network. Should there be a change in the protocol during the two-year warranty period, the manufacturer shall provide the necessary equipment and software for reprogramming for the new protocol at no additional charge.

All software and equipment costs shall be included in the bid price for the pay item. No subsequent licensing, leasing or subscription fees shall be required for the Department's continued use of the system.

**BASIS OF PAYMENT:**
This work will be paid for at the contract unit price each for **AUTOMATIC VEHICLE LOCATOR (AVL), FURNISH ONLY,** of the mobile type indicated, which price shall be payment in full for furnishing the unit as specified herein and as directed by the Engineer.

## AVL2 AVL RADIO MODEM, FURNISH ONLY

**DESCRIPTION**
This item shall consist of furnishing a complete mobile data radio modem to State stock, for AVL units described in the Pay Items AVL1. The mobile data radios shall communicate over the Department's licensed radio frequency while interfacing directly with AVL equipment described Pay Item AVL 1. The radio unit shall include: 1) dual receiver with diversity reception, 2) transmit power of at least 40 watts, 3) operate on 13.8 volts dc, 4) RJ45 Ethernet 10 Base T interface, and 5) RS232 serial port. Two antennas are required for this radio unit and shall be installed with antenna spacing as specified by the manufacturer. Radio frequency communications will be capable of a data transmission rate of 19.2kbps or greater. The radio frequency used will be provided by the Engineer. The unit shall be IP MobilNet model IP400 or approved equal and shall coordinate with current AVL equipment and software.

All software and equipment costs shall be included in the bid price for the pay item. No subsequent licensing, leasing or subscription fees shall be required for the Department's continued use of the item.

**BASIS OF PAYMENT**
This work shall be paid for at the contract unit price each for, **AVL RADIO MODEM, FURNISH ONLY** which price shall be payment in full for furnishing the unit for a completely functional AVL unit in the vehicle, as specified herein and as directed by the Engineer.

## AVL3 AVL OR RADIO MODEM, REMOVE

**DESCRIPTION**
This item shall consist of completely removing all AVL equipment or radio modem and associated accessories (brackets, wiring, fuses, antennas, keypads) from a Department vehicle as designated by the Engineer, transport and store appropriately in locked interior climate controlled area of State Stock. This work shall also include sealing any holes where the antennas were located with approved weather tight closures.

**BASIS OF PAYMENT**
This work shall be paid at the contract unit price each for **AVL OR RADIO MODEM, REMOVE** and store, as specified herein, with necessary transportation to and from Department facilities, and as directed by the Engineer. Transportation to Department facilities is included

## AVL4 AVL OR RADIO MODEM, INSTALL

**DESCRIPTION**
This item shall consist of transporting and installing all AVL equipment or radio modem into a vehicle as directed by the Engineer. The equipment to be used will be from State Stock.

**INSTALLATION**
The installation shall include all work in the Department vehicle necessary to install, wire and configure the complete system so as to provide a completely operational package. All hardware, antennas, interfaces, cables, wiring and mounting brackets shall be included in this item and not paid separately. Also included is the additional necessary system integration and coordination with the AVL System controllers, specified elsewhere in the Contract. Systems shall be installed in the Department's Emergency Traffic Patrol Trucks, Maintenance Plows/Salt Spreaders, as well as any other type of automobile and/or pick-up truck as designated by the Engineer. Testing to ensure that the mobile system has been seamlessly integrated into the network is included and shall be done in the presence of the Engineer.

**BASIS OF PAYMENT**
This work will be paid at the contract unit price each for **AVL OR RADIO MODEM, INSTALL**, of the mobile type indicated, with necessary transportation to and from Department facilities, which price shall be payment in full for the work as described herein.

## AVL5 AVL SYSTEM WORKSTATION, FURNISH AND INSTALL

**DESCRIPTION**
This item shall consist of furnishing, installing and integrating a completely operational user workstation at locations specified by the Engineer and shall be coordinated and integrated with the AVL equipment specified elsewhere in the Contract. The workstation shall be initially configured to simultaneously interface with 150 AVL equipped vehicles with wireless AVL, Status and Two-Way Text messaging packages and shall be easily software configurable to interface with no less than 1,800 AVL equipped mobile units, and a network of up to 9 other workstations. The manufacturer shall provide a two-year parts, software and factory labor warranty. The manufacturer shall have provided such systems for at least 3 years and furnished at least 30 such controllers to other highway departments, airports or utility companies. The proposed controller shall have been previously distributed and must be a current version. All software licensing fees shall be included in the bid price for this pay item. No subsequent licensing, leasing fees shall be required for continued use of the system.

The workstation shall continuously collect vehicle location, speed, direction, status and other information from the mobile units. It shall provide the work station users with manufacturer's customary full complement of services that shall include: vehicle facility, landmark and other information overlaid on user selected maps in accordance with individual requests from each workstation; graphically representing vehicle location, speed, direction and status for all vehicles in the selected map area; graphically representing the same information in the selected map area for only selected radio call numbers; a map showing the location and nearby vehicles based on a query for a specific vehicle from a workstation; a graphical replay of a selected vehicle over a selected interval; and current historical reports by date, vehicle, locations, etc. The application software package shall be capable of being custom enhanced to obtain and display real time operational statistics such as the number of vehicles engaged in plowing and/or salting, percentage of routes completed, etc. Capability for other future graphical enhancements shall include real time tracking of routes plowed, salted, pot hole repaired, etc.

The controller hardware, Dell or approved equal, shall include as a minimum: Pentium 4, 2+ GHz, 1 GB RAM, 80 GB Hard Drive, Floppy Drive, 24X CD-ROM Drive, 100 Mbps NIC, 17" LCD monitor, PS/2 mouse, keyboard; software compatible with the Department's current choice of Microsoft and ESRI (ARC) suite of products for OS, DB, word processing, report generation, graphical user interface, mapping etc. For a client workstation; Ethernet switch; router; appropriate printer and application software, PRI Advantage or approved equal. The software shall also include a mapping software package to include Lake, McHenry, Cook, DuPage, Kane and Will counties plus ten mile perimeter extending into adjacent Illinois, Indiana and Wisconsin counties with subscription based update services.

**INSTALLATION**

The installation shall include all work necessary to install, integrate, wire, , set-up all software, configure the complete system so as to provide a completely operational package. Testing shall be done in the presence of the IDOT Engineer. All interfaces, cables, surge protecting power strips, hook-up wire, connectors, mounting brackets and other appurtenances shall be included for a completely operational system.

**BASIS OF PAYMENT**

This work shall be paid for at the contract unit price each for, **AUTOMATIC VEHICLE LOCATOR SYSTEM WORKSTATION, FURNISH AND INSTALL** which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AVL6 AVL SYSTEM BACKUP SERVER, FURNISH AND INSTALL

**DESCRIPTION**

This item shall consist of furnishing, installing and integrating a completely operational backup server for the AVL system in District 1 Com Center Equipment Room and shall be coordinated and integrated with the existing AVL equipment specified elsewhere in the Contract. All software licensing fees shall be included in the bid price for this pay item. No subsequent licensing, leasing fees shall be required for continued use of the system.

The server hardware, Dell or approved equal, shall include as a minimum: Pentium 4, 3+ GHz, 1 GB RAM, 120 GB Hard Drive, Floppy Drive, 24X CD-ROM Drive, 100 Mbps NIC, 17" LCD monitor, 12/24 GB DAT Tape Backup, PS/2 mouse, keyboard; software compatible with the Department's current choice of Microsoft and ESRI (ARC) suite of products for OS, DB, word processing, report generation, graphical user interface, mapping etc.; Ethernet switch; router; appropriate printer and application software, PRI Advantage or approved equal. It shall include a swipe card encoding system, complete to configure swipe cards, and 200 blank cards. The software shall also include a mapping software package to include Lake, McHenry, Cook, DuPage, Kane and Will counties plus ten mile perimeter extending into adjacent Illinois, Indiana and Wisconsin counties with subscription based update services.

**INSTALLATION**
The installation shall include all work necessary to install, integrate, connect, set-up all software, configure the complete system so as to provide a completely operational package. Testing shall be done in the presence of the IDOT Engineer. All interfaces, cables, surge protecting power strips, hook-up wire, connectors, mounting brackets and other appurtenances shall be included for a completely operational system. Final Testing shall be done in the presence of the Engineer.

**BASIS OF PAYMENT**
This work shall be paid for at the contract unit price each for, **AVL SYSTEM BACKUP SERVER, FURNISH AND INSTALL** which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AVL7 AVL SYSTEM BASE STATION, FURNISH AND INSTALL

**DESCRIPTION**
This item shall consist of furnishing, installing and integrating a completely operational base station for the AVL system at the location specified by the Engineer and shall be coordinated and integrated with the existing AVL base stations and servers specified elsewhere in the Contract. The base station shall be IP Mobile Net IP400 series or approved equal. All software licensing fees shall be included in the bid price for this pay item. No subsequent licensing, leasing fees shall be required for continued use of the system. The base station shall conform to the following specifications:

- A power supply as recommended by manufacturer and approved by the Engineer.
- RF filters and circulators as recommended by the manufacturer and approved by the Engineer.
- Four omni directional antennas of 5dBd gain or better with an operating radio frequency (RF) range to be specified by the Engineer.
- Coaxial cable on the tower between antenna jumper cable and running just inside specified building shall be 7/8" Heliax with low density foam dielectric insulation or approved equivalent.
- Installation height and location of all antennas will be as directed by the Engineer. For the purpose of estimating the quantity of material needed for antenna installation, the height of any antenna may be as low as 150' and as high as 350'.
- All respective hardware, mounts, cabling, hangers, hoists, grounding straps, surge arrestors, connectors to install the antennas shall be included with the pay item.
- Installation shall be in compliance with manufacturer's directions and recommendations and may require a representative from the manufacturer to commission the base station. All setup, initializing, programming, and coordinating with the existing network of base stations shall be included.
- Any equipment needed to provide high speed connectivity from the base station to HQ shall be included. Connectivity may be on a Department ordered and provided T1 line or on the District's Optical Network. Any provisioning or configuration work of this high speed connection shall be included in this pay item.
- Any software licenses or agreements needed for this work shall be purchased under this pay item and given over to the Department upon completion.

**INSTALLATION**
The installation shall include all work necessary to install, integrate, connect, set-up all software, configure the complete system so as to provide a completely operational package. Testing shall be done in the presence of the IDOT Engineer. All interfaces, cables, surge protecting power strips, hook-up wire, connectors, mounting brackets and other appurtenances shall be included for a completely operational system.

**BASIS OF PAYMENT**
This work shall be paid for at the contract unit price each for, **AVL SYSTEM BASE STATION, FURNISH AND INSTALL** which price shall be payment in full for furnishing and installing the unit as specified herein and as directed by the Engineer.

## AXB1 BUDGETARY ALLOWANCE FOR REVLAC REMOTE CONTROL MODIFICATIONS

**DESCRIPTION:**
This item is to establish a budget account to allocate funds for the payment of modifications to the existing remote control radio system as manufacturer by Cattron and for partial activation control of the gates, auxiliary signs and Chevrons. The modification will involve PLC programming to turn on and turn off the radios only when needed and will involve replacing the existing gate control switches with a master control selector switch for each ramp. A budgetary allowance has been established since these modifications are not accurately or completely identifiable at the time of bidding and will require specialty service.

The total estimated amount of the annual expenses for services performed which will be paid under Article 7.0, is $30,000 as indicated for Pay Item AXB1. For bidding purposes this amount shall be used.

## AXB2 BUDGETARY ALLOWANCE FOR PLC CONTROL SYSTEM REPAIR

**DESCRIPTION:**
This item is to establish a budget account to allocate funds for the payment of repair to the existing Allen-Bradley PLC control system. A budgetary allowance has been established since it is unknown if repair will be needed and/or a specialty contractor service.

This allowance will not be used to repair damage caused by the Contractor's operations. Damage caused by the Contractor's operations shall be repaired at not additional cost to the Contract.

The total estimated amount of the annual expenses for services performed which will be paid under Article 7.0, is $40,000 as indicated for Pay Item AXB2. For bidding purposes this amount shall be used.

## AXB3 BUDGETARY ALLOWANCE FOR STATE STOCK PARTS

**DESCRIPTION:**
This item is to establish a budget account to allocate funds for the purchase of fabricated or specialty designed parts to be used for the repair of motorist caused damage. A budgetary allowance has been established since it is unknown what the total cost would be for each situation.

This allowance will not be used to repair damage caused by the Contractor's operations. Damage caused by the Contractor's operations shall be repaired at no additional cost to the Contract.

The total estimated amount of the annual expenses for services performed which will be paid under Article 7.0 is $30,000 as indicated for Pay Item AXB3. For bidding purposes this amount shall be used.

## AXB4 BUDGETARY ALLOWANCE FOR REMOTE NETWORK MONITORING SYSTEM

**DESCRIPTION**
This item is to establish a budget account to allocate funds for the remote network monitoring system. A budgetary allowance has been established since the specifics are unknown at this time and specialty services would be necessary.

In general, this item shall consist of furnishing hardware and software as specified to allow remote monitoring of the REVLAC/RACS systems alarms and/or device history.

Engineering dial up notebook computers/printers shall be incorporated to the monitoring system to allow the Engineer to call into the system and view/download the alarm/device history. The remote monitoring dial up unit shall be approved by the Engineer.

All software and programming required for remote access shall be included as a part of this item (provided on CD ROM or floppy) and coordinated with the network monitor specified elsewhere herein.

To minimize wear and tear on the proposed remote network monitoring system any equipment furnished to the State shall not be used as a development platform by the Contractor, Subcontractor or software developer. The Contractor and/or software developer shall use a different unit to develop software and operational configurations. However, the equipment delivered to the State shall have all software loaded and be ready for use as specified.

The total estimated amount of the annual expenses for this system which will be paid under Article 7.0 is $15,000 as indicated for Pay Item AXB4. For bidding purposes, this amount shall be used.

## AXB5 BUDGETARY ALLOWANCE FOR CCTV SYSTEM REPAIR

**DESCRIPTION:**

This item is to establish a budget account to allocate funds for the payment of repair to the existing CCTV system. A budgetary allowance has been established since it is unknown if repair will be needed and/or a specialty contractor service.

This allowance will not be used to repair damage caused by the Contractor's operations. Damage caused by the Contractor's operations shall be repaired at not additional cost to the Contract.

The total estimated amount of the annual expenses for services performed which will be paid under Article 7.0, is $50,000 as indicated for Pay Item AXB5. For bidding purposes this amount shall be used.

## AXB6 BUDGETARY ALLOWANCE FOR COMMUNICATION SYSTEM REPAIR

**DESCRIPTION:**

This item is to establish a budget account to allocate funds for the payment of repairs to the existing communication system. A budgetary allowance has been established since it is unknown if repair will be needed and/or a specialty contractor service.

This allowance will not be used to repair damage caused by the Contractor's operations. Damage caused by the Contractor's operations shall be repaired at not additional cost to the Contract.

The total estimated amount of the annual expenses for services performed which will be paid under Article 7.0, is $20,000 as indicated for Pay Item AXB6. For bidding purposes, this amount shall be used.

## AXB7 BUDGETARY ALLOWANCE FOR UPS AND OTHER BUILDING EQUIPMENT REPAIRS

**DESCRIPTION:**

This item is to establish a budget account to allocate funds for the payment of the specialty services for repairing or replacing UPS, and other equipment at REVLAC and RACS buildings and communication huts.

This allowance will not be used to repair damage caused by the Contractor's operations. Damage caused by the Contractor's operations shall be repaired at no additional cost to the Contract.

The total estimated amount of the annual expenses for services performed which will be paid under Article 7.0, is $30,000 as indicated for Pay Item AXB7. For bidding purposes this amount shall be used.

## AXB8 BUDGETARY ALLOWANCE FOR GATE DRIVETRAIN ASSEMBLY REPAIRS

**DESCRIPTION:**

This item is to establish a budget account to allocate funds for the repair of a gate drivetrain assembly from an approved vendor. A budgetary allowance has been established since it is unknown what the total cost would be for each situation and/or a specialty contractor service.

This allowance will not be used to repair damage caused by the Contractor's operations. Damage caused by the Contractor's operations shall be repaired at no additional cost to the Contract.

The total estimated amount of the annual expenses for services performed which will be paid under Article 7.0, is $40,000 as indicated for Pay Item AXB8. For bidding purposes this amount shall be used.

## AXB9 BUDGETARY ALLOWANCE FOR MICROWAVE REPAIRS

**DESCRIPTION:**

This item is to establish a budget account to allocate funds for the repairs of all microwave equipment with the ASMC Contract. A budgetary allowance has been established since it is unknown what the total cost would be for each repair situation and/or a specialty contractor service

This allowance will not be used to repair damage caused by the Contractor's operations. Damage caused by the Contractor's operations shall be repaired at no additional cost to the Contract.

The total estimated amount of the annual expenses for services performed which will be paid under Articles 7.0, is $30,000 as indicated for Pay Item AXB9. For bidding purposes this amount shall be used.

## AXB10 BUDGETARY ALLOWANCE FOR ASMC-EMCMS ENHANCEMENTS

**DESCRIPTION:**

This item is to establish a budget account to allocate funds for enhancements to the Electrical Maintenance Contract Management System (EMCMS) so that the system may also be used for the management of ASMC Contract. EMCMS is currently designed to handle only one system contract. The budgetary allowance has been established since the specialty service costs to redesign the system to manage multiple maintenance contracts are unknown at this time.

The total estimated amount of the annual expenses for services performed which will be paid under Articles 7.0, is $20,000 as indicated for Pay Item AXB10. For bidding purposes this amount shall be used.

## AXB11 BUDGETARY ALLOWANCE FOR RAMP GATE AND ATTENUATOR WORK

**DESCRIPTION:**

This item is to establish a budget account to allocate funds for regarding, surface preparation and other field discovered work during the installation of ramp gates and attenuators. The budgetary allowance has been established to allow for the field conditions discovered during installation.

The total estimated amount of the annual expenses for services performed which will be paid under Article 7.0, is $20,000 as indicated for Pay Item AXB11. For bidding purposes this amount shall be used.

# APPENDIX

## PREVENTIVE MAINTENANCE (PM) PROGRAM FORMS

### 6.6 PREVENTATIVE MAINTENANCE (PM) PROGRAMS

**6.6.1 Restraining Barrier PM**
REVLAC

**6.6.2 Swing Gates PM**
REVLAC
RACS

**6.6.3 Rotating Drum Signs PM**
REVLAC

**6.6.4 REVLAC and RACS LED & fiber optic SIGNS PM**
RACS & REVLAC

**6.6.5 Control and Communication Buildings, and Systems PM**
REVLAC BUILDINGS
RACS BUILDINGS
BATTERY REPLACEMENT
RADIO CONTROL (CATTRONS)

**6.6.6 Microwave PM**
HARRIS MICROWAVE
MICROWAVE RADIO CORP.

**6.6.7 Generator PM**
SEMI-ANNUAL GENERATOR

**6.6.8 CCTV Camera PM**
No form included, submit Ticket Summary

**6.6.9 Expressway Ramp Gates PM**
No form included, submit Ticket Summary

## PREVENTIVE MAINTENANCE PROGRAM -- REVLAC RESTRAINING BARRIERS

Date: _____ Conducted By: _____

Inspection performed once per year in April

| Loc. # | Location Name | Width | Deficiency [List Letter(s)] | Ticke Numbe |
|---|---|---|---|---|
| ABIE | Inbound Edens @ Barrier | 28 Ft | | |
| ABIS | Inbound Slip Ramp @ Barrier | 36.21 Ft | | |
| ABIW | Inbound West Leg @ Barrier | 28.94 Ft | | |
| ABOM | Outbound Mainline @ Barrier | 22.27 Ft | | |
| ABOO | Outbound Ontario @ Barrier | 28 Ft | | |
| ABOS | Outbound Slip Ramp @ Barrier | 35.85 Ft | | |

**Inspect the following items, repair or clean as necessary:**

A. Check net condition and positioning and check for damage or vandalism
B. Check that all cabinets are closed
C. Inspect all control cabinets, equipment access covers and hinged opening for proper closure (bolted or padlocked)
D. Check wire condition and terminations
E. Open tower cover doors and hinged openings, clean, check drive chain and sprocket alignment and wear, counterweight cable attachment and general condition and check for oil leaks
F. Check tower cover weather seal for wear or damage
G. Check limit switches and actuators; adjustments, clearances, and secure mounting
H. Check barrier net cables conditions, for tautness/tension and proper height
I. Check stabilizer foot pads (replace worn or missing pads)
J. Check inside of tower and cross ramp structure for accumulation of debris, dirt, dust, corrosion, animal nests, and excess grease
K. Replace missing or damaged reflective striping
L. Lubricate per maintenance manual section 4-5:

| | |
|---|---|
| Pillow block bearings: | Lube only if seal failure is noticed. |
| Sprocket bearings: | Lube only if seal failure is noticed |
| Speed reducers: | Replace or repair reducer if it leaks |
| Drive chair | Clean and lubricate |
| Guide pins | Clean and lubricate |

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**PREVENTIVE MAINTENANCE PROGRAM -- REVLAC SWING GATES**

Date: _____ Conducted By: _____

To be performed twice per year, circle one: APRIL 1st Inspection October 2nd Inspection

| LOC. # | Location Name | | Length | Deficiency [List Letter(s)] | Ticket Number(s) | Critical ? |
|---|---|---|---|---|---|---|
| ASGIE1 | Inbound Edens | Swing Gate 1 | 5 Ft | | | YES |
| ASGIE2 | Inbound Edens | Swing Gate 2 | 9 Ft | | | YES |
| ASGIE3 | Inbound Edens | Swing Gate 3 | 12 Ft | | | |
| ASGIE4 | Inbound Edens | Swing Gate 4 | 16 Ft | | | |
| ASGIE5 | Inbound Edens | Swing Gate 5 | 17 Ft | | | |
| ASGIE6 | Inbound Edens | Swing Gate 6 | 17 Ft | | | |
| ASGIE7 | Inbound Edens | Swing Gate 7 | 17 Ft | | | |
| ASGIE8 | Inbound Edens | Swing Gate 8 | 17 Ft | | | |
| ASGIE9 | Inbound Edens | Swing Gate 9 | 17 Ft | | | YES |
| ASGIE10 | Inbound Edens | Swing Gate 10 | 10 Ft | | | YES |
| ASGIE11 | Inbound Edens | Swing Gate 11 | 9 Ft | | | YES |
| ASGIE12 | Inbound Edens | Swing Gate 12 | 22 Ft | | | YES |
| ASGIE13 | Inbound Edens | Swing Gate 13 | 16 Ft | | | |
| ASGIE14 | Inbound Edens | Swing Gate 14 | 8 Ft | | | |
| ASGIE15 | Inbound Edens | Swing Gate 15 | 5 Ft | | | |
| ASGIS1 | Inbound Slip Ramp | Swing Gate 1 | 12 Ft | | | YES |
| ASGIS2 | Inbound Slip Ramp | Swing Gate 2 | 15 Ft | | | YES |
| ASGIS3 | Inbound Slip Ramp | Swing Gate 3 | 18 Ft | | | |
| ASGIS4 | Inbound Slip Ramp | Swing Gate 4 | 21 Ft | | | |
| ASGIS5 | Inbound Slip Ramp | Swing Gate 5 | 23 Ft | | | |
| ASGIS6 | Inbound Slip Ramp | Swing Gate 6 | 23 Ft | | | |

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| ASGIS7 | Inbound Slip Ramp | Swing Gate 7 | 23 Ft | | | |
| ASGIS8 | Inbound Slip Ramp | Swing Gate 8 | 23 Ft | | | |
| ASGIS9 | Inbound Slip Ramp | Swing Gate 9 | 23 Ft | | | YES |
| ASGIS10 | Inbound Slip Ramp | Swing Gate 10 | 14 Ft | | | YES |
| ASGIS11 | Inbound Slip Ramp | Swing Gate 11 | 14 Ft | | | YES |
| ASGIS12 | Inbound Slip Ramp | Swing Gate 12 | 23 Ft | | | YES |
| ASGIS13 | Inbound Slip Ramp | Swing Gate 13 | 23 Ft | | | |
| ASGIS14 | Inbound Slip Ramp | Swing Gate 14 | 23 Ft | | | |
| ASGIS15 | Inbound Slip Ramp | Swing Gate 15 | 23 Ft | | | |
| ASGIS16 | Inbound Slip Ramp | Swing Gate 16 | 23 Ft | | | |
| ASGIS17 | Inbound Slip Ramp | Swing Gate 17 | 23 Ft | | | |
| ASGIS18 | Inbound Slip Ramp | Swing Gate 18 | 22 Ft | | | |
| ASGIS19 | Inbound Slip Ramp | Swing Gate 19 | 21 Ft | | | |
| ASGIS20 | Inbound Slip Ramp | Swing Gate 20 | 18 Ft | | | |
| ASGIS21 | Inbound Slip Ramp | Swing Gate 21 | 16 Ft | | | |
| ASGIS22 | Inbound Slip Ramp | Swing Gate 22 | 14 Ft | | | |
| ASGIS23 | Inbound Slip Ramp | Swing Gate 23 | 12 Ft | | | YES |
| ASGIS24 | Inbound Slip Ramp | Swing Gate 24 | 10 Ft | | | YES |
| ASGIW1 | Inbound West Leg | Swing Gate 1 | 5 Ft | | | YES |
| ASGIW2 | Inbound West Leg | Swing Gate 2 | 9 Ft | | | YES |
| ASGIW3 | Inbound West Leg | Swing Gate 3 | 11 Ft | | | |
| ASGIW4 | Inbound West Leg | Swing Gate 4 | 14 Ft | | | |
| ASGIW5 | Inbound West Leg | Swing Gate 5 | 17 Ft | | | |
| ASGIW6 | Inbound West Leg | Swing Gate 6 | 17 Ft | | | |
| ASGIW7 | Inbound West Leg | Swing Gate 7 | 17 Ft | | | |
| ASGIW8 | Inbound West Leg | Swing Gate 8 | 17 Ft | | | |
| ASGIW9 | Inbound West Leg | Swing Gate 9 | 17 Ft | | | YES |
| ASGIW10 | Inbound West Leg | Swing Gate 10 | 8 Ft | | | YES |

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|---|---|---|---|---|---|---|
| ASGIW11 | Inbound West Leg | Swing Gate 11 | 9 Ft | | | YES |
| ASGIW12 | Inbound West Leg | Swing Gate 12 | 20 Ft | | | YES |
| ASGIW13 | Inbound West Leg | Swing Gate 13 | 19 Ft | | | |
| ASGIW14 | Inbound West Leg | Swing Gate 14 | 14 Ft | | | |
| ASGIW15 | Inbound West Leg | Swing Gate 15 | 10 Ft | | | |
| ASGIW16 | Inbound West Leg | Swing Gate 16 | 6 Ft | | | |
| ASGIW17 | Inbound West Leg | Swing Gate 17 | 5 Ft | | | |
| ASGIW18 | Inbound West Leg | Swing Gate 18 | 5 Ft | | | |
| ASGIW19 | Inbound West Leg | Swing Gate 19 | 5 Ft | | | YES |
| ASGIW20 | Inbound West Leg | Swing Gate 20 | 5 Ft | | | YES |
| ASGOM1 | Outbound Mainline | Swing Gate 1 | 12 Ft | | | YES |
| ASGOM2 | Outbound Mainline | Swing Gate 2 | 12 Ft | | | YES |
| ASGOM3 | Outbound Mainline | Swing Gate 3 | 12 Ft | | | |
| ASGOM4 | Outbound Mainline | Swing Gate 4 | 15 Ft | | | |
| ASGOM5 | Outbound Mainline | Swing Gate 5 | 14 Ft | | | |
| ASGOM6 | Outbound Mainline | Swing Gate 6 | 14 Ft | | | |
| ASGOM7 | Outbound Mainline | Swing Gate 7 | 20 Ft | | | |
| ASGOM8 | Outbound Mainline | Swing Gate 8 | 20 Ft | | | |
| ASGOM9 | Outbound Mainline | Swing Gate 9 | 18 Ft | | | YES |
| ASGOM10 | Outbound Mainline | Swing Gate 10 | 6 Ft | | | YES |
| ASGOM11 | Outbound Mainline | Swing Gate 11 | 2 Ft | | | YES |
| ASGOM12 | Outbound Mainline | Swing Gate 12 | 16 Ft | | | YES |
| ASGOM13 | Outbound Mainline | Swing Gate 13 | 17 Ft | | | |
| ASGOM14 | Outbound Mainline | Swing Gate 14 | 17 Ft | | | |
| ASGOM15 | Outbound Mainline | Swing Gate 15 | 15 Ft | | | |
| ASGOM16 | Outbound Mainline | Swing Gate 16 | 13 Ft | | | |
| ASGOM17 | Outbound Mainline | Swing Gate 17 | 11 Ft | | | |
| ASGOM18 | Outbound Mainline | Swing Gate 18 | 7 Ft | | | |

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|---|---|---|---|---|---|---|
| ASGOM19 | Outbound Mainline | Swing Gate 19 | 7 Ft | | | |
| ASGOM20 | Outbound Mainline | Swing Gate 20 | 9 Ft | | | YES |
| ASGOM21 | Outbound Mainline | Swing Gate 21 | 9 Ft | | | YES |
| ASGOO1 | Outbound Ontario | Swing Gate 1 | 12 Ft | | | YES |
| ASGOO2 | Outbound Ontario | Swing Gate 2 | 12 Ft | | | YES |
| ASGOO3 | Outbound Ontario | Swing Gate 3 | 13 Ft | | | |
| ASGOO4 | Outbound Ontario | Swing Gate 4 | 13 Ft | | | |
| ASGOO5 | Outbound Ontario | Swing Gate 5 | 13 Ft | | | |
| ASGOO6 | Outbound Ontario | Swing Gate 6 | 20 Ft | | | |
| ASGOO7 | Outbound Ontario | Swing Gate 7 | 20 Ft | | | YES |
| ASGOO8 | Outbound Ontario | Swing Gate 8 | 8 Ft | | | YES |
| ASGOO9 | Outbound Ontario | Swing Gate 9 | 8 Ft | | | YES |
| ASGOO10 | Outbound Ontario | Swing Gate 10 | 20 Ft | | | YES |
| ASGOO11 | Outbound Ontario | Swing Gate 11 | 20 Ft | | | |
| ASGOO12 | Outbound Ontario | Swing Gate 12 | 16 Ft | | | |
| ASGOO13 | Outbound Ontario | Swing Gate 13 | 12 Ft | | | |
| ASGOO14 | Outbound Ontario | Swing Gate 14 | 6 Ft | | | |
| ASGOO15 | Outbound Ontario | Swing Gate 15 | 4 Ft | | | YES |
| ASGOO16 | Outbound Ontario | Swing Gate 16 | 4 Ft | | | YES |
| ASGOS1 | Outbound Slip Ramp | Swing Gate 1 | 6 Ft | | | YES |
| ASGOS2 | Outbound Slip Ramp | Swing Gate 2 | 10 Ft | | | YES |
| ASGOS3 | Outbound Slip Ramp | Swing Gate 3 | 14 Ft | | | |
| ASGOS4 | Outbound Slip Ramp | Swing Gate 4 | 16 Ft | | | |
| ASGOS5 | Outbound Slip Ramp | Swing Gate 5 | 20 Ft | | | |
| ASGOS6 | Outbound Slip Ramp | Swing Gate 6 | 21 Ft | | | |
| ASGOS7 | Outbound Slip Ramp | Swing Gate 7 | 21 Ft | | | |
| ASGOS8 | Outbound Slip Ramp | Swing Gate 8 | 21 Ft | | | |
| ASGOS9 | Outbound Slip Ramp | Swing Gate 9 | 21 Ft | | | |

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|---|---|---|---|---|---|---|
| ASGOS10 | Outbound Slip Ramp | Swing Gate 10 | 21 Ft | | | YES |
| ASGOS11 | Outbound Slip Ramp | Swing Gate 11 | 13 Ft | | | YES |
| ASGOS12 | Outbound Slip Ramp | Swing Gate 12 | 14 Ft | | | YES |
| ASGOS13 | Outbound Slip Ramp | Swing Gate 13 | 23 Ft | | | YES |
| ASGOS14 | Outbound Slip Ramp | Swing Gate 14 | 23 Ft | | | |
| ASGOS15 | Outbound Slip Ramp | Swing Gate 15 | 23 Ft | | | |
| ASGOS16 | Outbound Slip Ramp | Swing Gate 16 | 23 Ft | | | |
| ASGOS17 | Outbound Slip Ramp | Swing Gate 17 | 23 Ft | | | |
| ASGOS18 | Outbound Slip Ramp | Swing Gate 18 | 21 Ft | | | |
| ASGOS19 | Outbound Slip Ramp | Swing Gate 19 | 20 Ft | | | |
| ASGOS20 | Outbound Slip Ramp | Swing Gate 20 | 18 Ft | | | YES |
| ASGOS21 | Outbound Slip Ramp | Swing Gate 21 | 16 Ft | | | YES |

## PREVENTIVE MAINTENANCE – RACS -- SWING GATES

Choose one: April – 1st Inspection October – 2nd Inspection

DATE: _____ CONDUCTED BY: _____

| LOC. # | Item | Length | Location Name | Deficiency Noted | Ticket # |
|---|---|---|---|---|---|
| AG1 | Swing Gate | 14 ft | Roosevelt Ramp | | |
| AG2 | Swing Gate | 17 ft | Roosevelt Ramp | | |
| AG3 | Swing Gate | 17 ft | Roosevelt Ramp | | |
| AG4 | Swing Gate | 17 ft | Roosevelt Ramp | | |
| AG5 | Swing Gate | 17 ft | Roosevelt Ramp | | |
| AG6 | Swing Gate | 20 ft | Roosevelt Ramp | | |
| AG7 | Swing Gate | 21 ft | Roosevelt Ramp | | |
| AG8 | Swing Gate | 21 ft | Roosevelt Ramp | | |
| AG9 | Swing Gate | 21 ft | Roosevelt Ramp | | |
| AG10 | Swing Gate | 21 ft | Roosevelt Ramp | | |

A. Check gate arm tip condition and positioning (look for damage).
B. Check that panel doors are closed and padlocked.
C. Check shear pin conditions.
D. Check proximity limit switch alignment and brackets condition.
E. Check electrical connectors and wiring condition.
F. Open control cabinet doors, clean, check inner safety closure.
G. Check condition of limit switches
H. Check drive and control components
I. Clean gate arm and tip (pressure wash w/cleaner/degreaser)

J. Review Manual Page 6-1
Flange bearings: Lube only if seal failure is noticed
Chain and sprocket: Lube only with light grade aerosol chain lube
Speed reducers: Replace or repair reducer if it leaks oil

K. Check swing gate operation using the local control and hand crank for smooth operation and that the required status indicator lights are illuminated.

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## PREVENTIVE MAINTENANCE – REVLAC -- DRUM SIGNS

Choose one: April – 1st Inspection October – 2nd Inspection

DATE: _____ CONDUCTED BY: _____

| LOC. # | | | Deficiency Noted | Ticket # |
|---|---|---|---|---|
| ACMOM1 | Outbound Mainline | Changeable Message 1 | | |
| ACMOM2 | Outbound Mainline | Changeable Message 2 | | |
| ACMOO3 | Outbound Ontario | Changeable Message 3 | | |
| ACMOO4 | Outbound Ontario | Changeable Message 4 | | |
| ACMOO5 | Outbound Ontario | Changeable Message 5 | | |
| ACMOM6 | Outbound Mainline | Changeable Message 6 | | |
| ACMOM7 | Outbound Mainline | Changeable Message 7 | | |
| ACMOS8 | Outbound Slip Ramp | Changeable Message 8 | | |
| ACMOS9 | Outbound Slip Ramp | Changeable Message 9 | | |
| ACMIS10 | Inbound Slip Ramp | Changeable Message 10 | | |
| ACMIS11 | Inbound Slip Ramp | Changeable Message 11 | | |
| ACMIE12 | Inbound Edens | Changeable Message 12 | | |
| ACMIE13 | Inbound Edens | Changeable Message 13 | | |
| ACMIW14 | Inbound West Leg | Changeable Message 14 | | |
| ACMIW15 | Inbound West Leg | Changeable Message 15 | | |

**SIGNS**

A. Sign Housing: Clean and inspect interior and exterior

B. Coupling: Observe operation on the coupling, tighten all bolts and set screws as required.

**CONTROL CABINET**

A. Inspect and clean

B. Operate sign in “LOCAL” mode and look for malfunctioning relays, timers, etc.

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## PREVENTIVE MAINTENANCE – RACS & REVLAC -- LED SIGNS

Choose one: April – 1st Inspection October – 2nd Inspection

DATE: _____ CONDUCTED BY: _____

| RACS LOCATIONS: | | | Deficiency Noted | Ticket # |
|---|---|---|---|---|
| AAS1 | Aux Sign | West of I 88 | | |
| AAS2 | Aux Sign | West of I 88 | | |
| AEBR1 | Variable Message Sign | 1/4 Mile West of York Rd | | |
| AEBR3 | Variable Message Sign | Between York Rd & I 88 | | |
| AEBR4 | Variable Message Sign | Roosevelt Ramp Entrance | | |
| ASC1 | Chevron Aux Sign | Eastbound Roosevelt left shoulder | | |
| ASC2 | Chevron Aux Sign | Eastbound Roosevelt left shoulder | | |
| ASC3 | Chevron Aux Sign | Eastbound Roosevelt left shoulder | | |
| ASC4 | Chevron Aux Sign | Eastbound Roosevelt left shoulder | | |
| ASC5 | Chevron Aux Sign | Eastbound Roosevelt left shoulder | | |
| ASC6 | Chevron Aux Sign | Eastbound Roosevelt left shoulder | | |
| **REVLAC LOCATIONS:** | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**SIGNS**

A. Sign Housing: Clean and inspect interior and exterior
B. Power Supply: Check and adjust voltage to LED's

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**REVLAC BUILDING PREVENTIVE MAINTENANCE FORM**

DATE: _____

Circle One: Conducted By: _____

| | | | | | |
|---|---|---|---|---|---|
| AA | Building A | AD | Building D | AISP | ISP Comm. Building |
| AC | Building C | AE | Building E | ACOM | IDOT ComCenter |

Complete Work as Applicable:

Refrigeration (not applicable for ISP building)

____ Clean or replace air filter
____ Inspect and clean indoor coil, drain pan, and condensation drain line
____ Inspect and clean blower motor and wheel
____ Check electrical connections for tightness
____ Check controls for proper orientation
____ Inspect refrigerant tubing connections

Notes: _____ Ticket # _____

Fans

____ Inspect and tighten bolts and set screws
____ Inspect belt wear and alignment
____ Clean exterior surfaces
____ Clean or replace filters
____ Inspect and lubricate bearings if needed
____ Check for proper control/line voltage and operation on supply/exhaust fan starters

Notes: _____ Ticket # _____

Switchboards

____ Manually open and close breakers
____ Check for torque values in secondary section of bus splices and connections
____ Check for proper ammeter/voltmeter values

Notes: _____ Ticket # _____

Panelboards

____ Inspect for moisture damage
____ Replace any deteriorated insulation material
____ Clean any accumulation of dust or dirt
____ Inspect all connections for heat or other damage of loose connections
____ Operate mechanical components
____ Clean and dress copper electrical contacts
____ Operate circuit breakers
____ Replace burned out indicating lights

Notes: _____ Ticket # _____

Transformers (not applicable for ISP building)

____ Clean excessive dirt on windings & insulators

Notes:_____ Ticket #_____

**REVLAC BUILDING PREVENTIVE MAINTENANCE FORM (Cont'd)** **Page: 2**

Automatic Transfer Switches (not applicable for ISP building)

____ Inspect wiring and connections for tracking, overheating, and deterioration
____ Tighten control circuit wiring terminals
____ Check for free movement and contact continuity in manual switches
____ Adjust time delay settings as necessary
____ Clean or replace main, arcing, and auxiliary contacts
____ Tighten lug connections and mounting insulation bolts
____ Perform transfer operation
____ Calibrate phase and voltage sensitive relays
____ Clean and remove accumulated dust and dirt
____ Check for proper operation or door closure, locking bars, and mechanism

Notes: _____ Ticket # _____

Batteries

____ Check voltage and tighten nuts/bolts
____ Clean surfaces
____ Check AC/DC power converter charger (if applicable)

Notes: _____ Ticket # _____

6 GHz Microwave System

___ Clean outside and front panel of case
____ Tighten cable connections
____ Measure and record operating parameters
____ Measure and record transmitter RF frequency
____ Measure and record receiver IF frequency
____ Measure and record receiver AGC voltage
____ Check dehydrator

Notes: _____ Ticket # _____

23 GHz Microwave System (no ISP building)

___ Measure and record AGC voltage level
____ Measure and record transmitter output power and frequency
____ Tighten loose fasteners and replace missing hardware
____ Check and replace indicator lamps
____ Inspect cable for wear or fraying
____ Clean painted surfaces and repair as necessary
____ Check mounting hardware and guy wires of antennas, masts, or towers
____ Measure and record transmitter gun current

Notes: _____ Ticket # _____

Modems Microwave System

____ Remove dust from internal components with soft brush and low pressure air/vac

Notes: _____ Ticket # _____

**REVLAC BUILDING PREVENTIVE MAINTENANCE FORM (Cont'd)** **Page: 3**

Antennas Microwave

____ Check tightness of hardware on mount, shroud, radome, and feed
____ Inspect antenna and repair when necessary

Notes: _____ Ticket # _____

Remote Control (Cattron) System (not applicable for ISP building)

____ Check fuse resistance and replace when necessary
____ Check fuse holders for corrosion and clean when necessary
____ Check primary power source for proper readings
____ Check control transmitter,receiver/decoder,relayoutput rack for loose bolts/screws/clamps
____ Check fuses, holders, resistors, and transformers for over heating
____ Visually check antenna, mounting devices, cables and connectors
____ Confirm receiver and transmitter in the system are aligned on the same frequency

Notes: _____ Ticket # _____

Weather System (not applicable for ISP building)

____ Confirm smooth rotations in anemometer bearings and wind vane
____ Clean rain detector
____ Wipe lenses and clean surfaces of visibility meter
____ Clean road and surface sensors

Notes: _____ Ticket # _____

Gate Arm Heating System (not applicable for ISP building)

____ Check for proper settings, operation, and LED indication

Notes: _____ Ticket # _____

CCTV (not applicable for ISP building)

____ Inspect camera housing for moisture and dry out when necessary
____ Tope off washer reservoir

Notes: _____ Ticket # _____

**COATED FLOORS SHALL BE WET MOPPED WITH APPROVED CLEANER FOR:**

____ Building A

____ Building C

____ Building D

____ Building E

**REVLAC BUILDING PREVENTIVE MAINTENANCE FORM (Cont'd)** **Page: 4**

| Site Report | Choose Building (circle) | | | |
|---|---|---|---|---|
| Building E | Enclosures: | RA0AN8CA | RA0AN8CB | RA0AN8CC |
| Building A | Enclosures: | RA0AN8CE | RA0AN8CF | RA0AN8CG |
| Building C | Enclosures: | RA0AN8CI | RA0AN8CJ | RA0AN8CK |
| Building D | Enclosures: | RA0AN8CM | RA0AN8CN | RA0AN8CO |
| ComCenter | Enclosures: | RA0AN8CT | RA0AN8CU | RA0AN8CV |
| | | RA0AN8CQ | RA0AN8CR | |

___ ___ ___ Blow dirt out of programmable controllers, I/O modules and power supplies with compressed air.

___ ___ ___ Brush dust & construction debris off of the I/O racks, wire troughs, & horizontal surfaces.

___ ___ ___ Wipe dirt off of edges of doors and door frames

___ ___ ___ Vacuum dust and construction debris out of cabinet.

___ ___ ___ Check ground bus connections and bonding wires and lugs for tightness and integrity.

___ ___ ___ Check screws on 1771-I/O swing-arms for tightness.

___ ___ ___ Check screws on terminal boards for tightness.

Notes: _____ Ticket # _____

| | | | |
|---|---|---|---|
| **Building E** | **Enclosure: RA0AN8CD** | **Building C** | **Enclosure: RA0AN8CL** |
| **Building A** | **Enclosure: RA0AN8CH** | **Building D** | **Enclosure: RA0AN8CP** |
| | | **ComCenter** | **Enclosure: RA0AN8CS** |

Site Report Functions to Perform:

_____ Test Random Access Memory (RAM) function.
_____ Verify alarms are updating properly.
_____ Verify hard drive is functioning normally.
_____ Verify screen brightness is within normal parameters.
_____ Verify PLC-5 program backup is current and password protected.
_____ Clean and inspect air filter.
_____ Blow dirt out of T-60 with compressed air.
_____ Brush dust and construction debris off of the T-60 and other horizontal surfaces.
_____ Wipe dirt off of edges of doors and door frames.
_____ Vacuum dust and construction debris out of cabinet.
_____ Check bonding wires and lugs for tightness and integrity.
_____ Check communication cable integrity.

Notes: _____ Ticket # _____

**BATTERY REPLACEMENT** **Completed By (name)** _____

**Surge Arrestors Batteries (9V) are all to be replaced at the time of the Inspection (April)**

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**RACS BUILDING PREVENTIVE MAINTENANCE FORM**

DATE: _____

**Circle One:** **Conducted By:** _____

| | | | |
|---|---|---|---|
| ARACSHH | Hillside Hub | ACOM | IDOT ComCenter |
| ARACSHT | Hillside Tower | ARACSRR | Roosevelt Road |
| ARACSNH | Nordic Hut | ARACSSH | Schaumburg Hut |
| ARACSNT | Nordic Tower | ARACSST | Schaumburg Tower |

**CONDUCT WORK AS FOLLOWS:**

Refrigeration

____ Clean or replace air filter
____ Inspect and clean indoor coil, drain pan, and condensation drain line
____ Inspect and clean blower motor and wheel
____ Check electrical connections for tightness
____ Check controls for proper orientation
____ Inspect refrigerant tubing connections

Notes: _____ Ticket # _____

Fans

____ Inspect and tighten bolts and set screws
____ Inspect belt wear and alignment
____ Clean exterior surfaces
____ Clean or replace filters
____ Inspect and lubricate bearings if needed

Notes: _____ Ticket # _____

Switchboards

____ Manually open and close breakers
____ Check for torque values in secondary section of bus splices and connections
____ Check for proper ammeter/voltmeter values

Notes: _____ Ticket # _____

Panelboards

____ Inspect for moisture damage
____ Replace any deteriorated insulation material
____ Clean any accumulation of dust or dirt
____ Inspect all connections for heat or other damage of loose connections
____ Operate mechanical components
____ Clean and dress copper electrical contacts
____ Operate circuit breakers
____ Replace burned out indicating lights

Notes: _____ Ticket # _____

Transformers

____ Clean excessive dirt on windings & insulators

Notes:_____ Ticket #_____

**RACS BUILDING PREVENTIVE MAINTENANCE FORM (Cont'd)** **Page: 2**

Automatic Transfer Switches (not applicable for ROOSEVELT RAMP building)

____ Inspect wiring and connections for tracking, overheating, and deterioration
____ Tighten control circuit wiring terminals
____ Check for free movement and contact continuity in manual switches
____ Adjust time delay settings as necessary
____ Clean or replace main, arcing, and auxiliary contacts
____ Tighten lug connections and mounting insulation bolts
____ Perform transfer operation
____ Calibrate phase and voltage sensitive relays
____ Clean and remove accumulated dust and dirt
____ Check for proper operation or door closure, locking bars, and mechanism

Notes: _____ Ticket # _____

Batteries

____ Check voltage and tighten nuts/bolts and clean surfaces
____ Check AC/DC power converter charger (if applicable)

Notes: _____ Ticket # _____

Ethernet Network

____ Check Cisco Mux
____ Clean and remove accumulated dust and dirt
____ Clean filter

Notes: _____ Ticket # _____

6 GHz Microwave System

___ Clean outside and front panel of case
____ Tighten cable connections
____ Measure and record operating parameters
____ Measure and record transmitter RF frequency
____ Measure and record receiver IF frequency
____ Measure and record receiver AGC voltage
____ Check dehydrator

Notes: _____ Ticket # _____

Antennas Microwave

____ Check tightness of hardware on mount, shroud, radome, and feed
____ Inspect antenna and repair when necessary

Notes: _____ Ticket # _____

CCTV

____ Check Impath Encorder
____ Check camera monitors
____ Check MPC controller and pre-set panel
____ Check Vicon switcher and cameras
____ Check Netcam computer
____ Check IFS equipment (for Ramp Building and Hillside Hub)

Notes: _____ Ticket # _____

**RACS BUILDING PREVENTIVE MAINTENANCE FORM (Cont'd)** **Page: 3**

Generator (not applicable for Roosevelt Ramp Building)

____ Start and check engine readings
____ Inspect block and battery heater

Notes: _____ Ticket # _____

Tower lights (not applicable for Roosevelt Ramp Building)

____ Check and clean Honeywell controller

Notes:_____ Ticket # _____

PLC Server (Ramp Building & Hillside Hub)

____ Check working as designed

Notes:_____ Ticket # _____

DMS Signs (Ramp Building & Hillside Hub)

____ Check media converter
____ Check fiber transceiver

Notes: _____ Ticket # _____

Site Report Functions to Perform:

____ Blow dirt out of programmable controllers, I/O modules and power supplies with compressed air.

____ Brush dust & construction debris off of the I/O racks, wire troughs, & horizontal surfaces.

____ Wipe dirt off of edges of doors and door frames

____ Vacuum dust and construction debris out of cabinet.

____ Check ground bus connections and bonding wires and lugs for tightness and integrity.

____ Check screws on terminal boards for tightness.

Notes: _____ Ticket # _____

**BATTERY INSPECTION AND REPLACEMENT**

**Batteries in the PLC are to be replaced at the time of the 1st Inspection (April)**

- Clean Battery and check bolts for tightness.
- Check for Leaks. Yes or No ? If yes, provide Ticket number _____ Rev. 10/05

## BUILDING BATTERY REPLACEMENT

**Date:**_____

**BUILDING:** **CONDUCTED BY:**

| Battery | Leaks | Voltage | Clean | Bolt Tightness |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
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| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |

**Main Equipment Batteries**

| | | | | |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |

**BUILDING PREVENTIVE MAINTENANCE PROGRAM**

**Radio Control System (Cattrons) Inspection**

**DATE**: _____ **CONDUCTED BY**: _____

| Location | Model # | Serial # | Batt. Volts | Transmit | Receive | Power | Mod. | RX Se |
|---|---|---|---|---|---|---|---|---|
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Comments/Tickets: Note: When taking unit for repair, replace with spare.

**MICROWAVE PREVENTIVE MAINTENANCE (HARRIS MICROWAVE)**

Farion Rack #_____ Radio#/ID[Ex:A,A1]_____ Location_____

Coordinating Site_____ Initial Measurement Date_____ (for this contrac

| What to measure | Where to measure | Radio Assy | Initial Level | YEAR AFTER INITIAL INSTALLATION | | | |
|---|---|---|---|---|---|---|---|
| | | | | 1st YEAR | 2nd YEAR | 3rd YEAR | 4 |
| TX Crystal Frequency | MON jack on Transmit PLS in RFU | TX A1 | | | | | |
| | | TX A2 | | | | | |
| | | TX B1 | | | | | |
| | | TX B2 | | | | | |
| RX Crystal Frequency | MON jack on Receiver PLS in RFU | RX A1 | | | | | |
| | | RX A2 | | | | | |
| | | RX B1 | | | | | |
| | | RX B2 | | | | | |
| TX Output Power | Use FarScan. See page 3-8. | TX A1 | | | | | |
| | | TX A2 | | | | | |
| | | TX B1 | | | | | |
| | | TX B2 | | | | | |
| NOTES: | | | | | | | |

## MICROWAVE PREVENTIVE MAINTENANCE (MICROWAVE RADIO CORPORATION)

DATE: _____ Conducted By: _____

Coordinating Site Initial Measurement Date Today's Date:

| What to measure | Where to measure | Initial Level | Present Value | YEAR AFTER INITIAL INSTALLA | | |
|---|---|---|---|---|---|---|
| | | | | 1st YEAR | 2nd YEAR | 3rd YEAR |
| TX Frequency | RF Head | | | | | |
| Gunn Current | Panel Meter | | | | | |
| V+ | Rear Panel White | | | | | |
| V+ | Rear Panel Red | | | | | |
| Video Input | Rear Panel | | | | | |
| Audio Input 1 | Rear Panel | | | | | |
| Audio Input 2 | Rear Panel | | | | | |
| Gunn Current | Front Led | | | | | |
| Power | Front Led | | | | | |

**Receiver Duplex System** **Duplex System Vertical Power Outlet Level**

| What to measure | Where to measure | Initial Level | Present Value | YEAR AFTER INITIAL INSTALLAT | | |
|---|---|---|---|---|---|---|
| | | | | 1st YEAR | 2nd YEAR | 3rd YEAR |
| AGC | RG-6 Coax | | | | | |
| AGC | Panel Meter | | | | | |
| V+ | Rear Panel White | | | | | |
| V+ | Rear Panel Red | | | | | |
| V- | Rear Panel Green | | | | | |
| RX Frequency | | | | | | |
| Video Out | Rear Panel | | | | | |
| Audio 1 Out | Rear Panel | | | | | |
| Audio 2 Out | Rear Panel | | | | | |
| Rcvr IF | RG-6 Coax | | | | | |
| Gunn Current | Front Panel LED | | | | | |
| Power | Front Panel LED | | | | | |
| RX Carrier | Level from Graph | | | | | |
| RX Fade to threshold | | | | | | |

**Receiver Duplex System** **Duplex System Horizontal Power Outlet Level**

| What to measure | Where to measure | Initial Level | Present Value | YEAR AFTER INITIAL INSTALLATION | | | |
|---|---|---|---|---|---|---|---|
| | | | | 1st YEAR | 2nd YEAR | 3rd YEAR | 4th YEAR |
| AGC | RG-6 Coax | | | | | | |
| AGC | Panel Meter | | | | | | |
| V+ | Rear Panel White | | | | | | |
| V+ | Rear Panel Red | | | | | | |
| V- | Rear Panel Green | | | | | | |
| RX Frequency | | | | | | | |
| Video Out | Rear Panel | | | | | | |
| Audio 1 Out | Rear Panel | | | | | | |
| Audio 2 Out | Rear Panel | | | | | | |
| Rcvr IF | RG-6 Coax | | | | | | |
| Gunn Current | Front Panel LED | | | | | | |
| Power | Front Panel LED | | | | | | |
| RX Carrier | Level from Graph | | | | | | |
| RX Fade to threshold | | | | | | | |

**ANTENNA AND SUPPORT STRUCTURE INSPECTION**

| Condition Good or Poor ( G or P ) | | NOTES/TICKET # |
|---|---|---|
| Antenna & Shroud | | |
| Mounting Hardware | | |
| Transmission Lines Flex | | |
| Control Cables | | |
| RF heads | | |

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| **Location:** | **GENERATOR SEMI-ANNUAL PM** | **Date:** |
|---|---|---|
| With Generator On. Freq.: Cycles | | |
| With Generator On AC: Volts Amps | | |
| Status of the Safety Ear Muffs Good ☐ Fair ☐ Poor ☐ Qty ☐ | | |

| Battery Check | Cell Inspection | Comments |
|---|---|---|
| | | |
| | | |

| | | |
|---|---|---|
| Generator Oil Level | | |
| Fuel Tank Level | | |
| Generator Total Hours Run Time: | | |
| Any Fluid/Fuel Leaks: Yes ☐ No ☐ (If Yes, Please Comment) | | |

| | |
|---|---|
| Air cleaner restrictor (air filter) | Exhaust system |
| Block heater operation | Coolant level/don't check with block heater hot |
| Battery charging system | Drain condensation trap |
| Meters, gauges, and indicator lamps | Control panel and transfer switch operation |
| Run generator for 15 minutes | |

| |
|---|
| Comments: |
| **Semi-Annual Engine Maintenance** |
| 1. Check and change oil |
| 2. Check and change the following: filters in coolant condition-circuit, crank case breather, air filter, fuel, oil filter, and bypass filters. |
| 3. Check and change belts and coolant |
| 4. Check for hub, pulley and water pump |
| 5. Clean any debris on set |
| 6. Check and operate circuit breaker |
| 7. Check and operate transfer switch |

**EQUIPMENT RENTAL RATES (BDE)**
Effective: August 2, 2007 Revised: January 2, 2008

Replace the second and third paragraphs of Article 105.07(b)(4)a. of the Standard Specifications with the following:

"Equipment idled which cannot be used on other work, and which is authorized to standby on the project site by the Engineer, will be paid for according to Article 109.04(b)(4)."

Replace Article 109.04(b)(4) of the Standard Specifications with the following:

"(4) Equipment. Equipment used for extra work shall be authorized by the Engineer. The equipment shall be specifically described, be of suitable size and capacity for the work to be performed, and be in good operating condition. For such equipment, the Contractor will be paid as follows.

a. Contractor Owned Equipment. Contractor owned equipment will be paid for by the hour using the applicable FHWA hourly rate from the "Equipment Watch Rental Rate Blue Book" (Blue Book) in effect when the force account work begins. The FHWA hourly rate is calculated as follows.

FHWA hourly rate = (monthly rate/176) x (model year adj.) x (Illinois adj.) + EOC

Where: EOC = Estimated Operating Costs per hour (from the Blue Book)

The time allowed will be the actual time the equipment is operating on the extra work. For the time required to move the equipment to and from the site of the extra work and any authorized idle (standby) time, payment will be made at the following hourly rate: 0.5 x (FHWA hourly rate - EOC).

All time allowed shall fall within the working hours authorized for the extra work.

The rates above include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs, overhaul and maintenance of any kind, depreciation, storage, overhead, profits, insurance, and all incidentals. The rates do not include labor.

The Contractor shall submit to the Engineer sufficient information for each piece of equipment and its attachments to enable the Engineer to determine the proper equipment category. If a rate is not established in the Blue Book for a particular piece of equipment, the Engineer will establish a rate for that piece of equipment that is consistent with its cost and use in the industry.

b. Rented Equipment. Whenever it is necessary for the Contractor to rent equipment to perform extra work, the rental and transportation costs of the equipment plus five percent for overhead will be paid. In no case shall the rental rates exceed those of established distributors or equipment rental agencies.

All prices shall be agreed to in writing before the equipment is used."

**PAYMENTS TO SUBCONTRACTORS (BDE)**
Effective: June 1, 2000 Revised: January 1, 2006

Federal regulations found at 49 CFR §26.29 mandate the Department to establish a contract clause to require Contractors to pay subcontractors for satisfactory performance of their subcontracts and to set the time for such payments.

State law also addresses the timing of payments to be made to subcontractors and material suppliers. Section 7 of the Prompt Payment Act, 30 ILCS 540/7, requires that when a Contractor receives any payment from the Department, the Contractor shall make corresponding, proportional payments to each subcontractor and material supplier performing work or supplying material within 15 calendar days after receipt of the Department payment. Section 7 of the Act further provides that interest in the amount of two percent per month, in addition to the payment due, shall be paid to any subcontractor or material supplier by the Contractor if the payment required by the Act is withheld or delayed without reasonable cause. The Act also provides that the time for payment required and the calculation of any interest due applies to transactions between subcontractors and lower-tier subcontractors and material suppliers throughout the contracting chain.

This Special Provision establishes the required federal contract clause, and adopts the 15 calendar day requirement of the State Prompt Payment Act for purposes of compliance with the federal regulation regarding payments to subcontractors. This contract is subject to the following payment obligations.

When progress payments are made to the Contractor according to Article 109.07 of the Standard Specifications, the Contractor shall make a corresponding payment to each subcontractor and material supplier in proportion to the work satisfactorily completed by each subcontractor and for the material supplied to perform any work of the contract. The proportionate amount of partial payment due to each subcontractor and material supplier throughout the contracting chain shall be determined by the quantities measured or otherwise determined as eligible for payment by the Department and included in the progress payment to the Contractor. Subcontractors and material suppliers shall be paid by the Contractor within 15 calendar days after the receipt of payment from the Department. The Contractor shall not hold retainage from the subcontractors. These obligations shall also apply to any payments made by subcontractors and material suppliers to their subcontractors and material suppliers; and to all payments made to lower tier subcontractors and material suppliers throughout the contracting chain. Any payment or portion of a payment subject to this provision may only be withheld from the subcontractor or material supplier to whom it is due for reasonable cause.

This Special Provision does not create any rights in favor of any subcontractor or material supplier against the State or authorize any cause of action against the State on account of any payment, nonpayment, delayed payment, or interest claimed by application of the State Prompt Payment Act. The Department will not approve any delay or postponement of the 15 day requirement except for reasonable cause shown after notice and hearing pursuant to Section 7(b) of the State Prompt Payment Act. State law creates other and additional remedies

available to any subcontractor or material supplier, regardless of tier, who has not been paid for work properly performed or material furnished. These remedies are a lien against public funds set forth in Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c), and a recovery on the Contractor's payment bond according to the Public Construction Bond Act, 30 ILCS 550.

**REFLECTIVE SHEETING ON CHANNELIZING DEVICES (BDE)**
Effective: April 1, 2007

Revise the seventh paragraph of Article 1106.02 of the Standard Specifications to read:

"At the time of manufacturing, the retroreflective prismatic sheeting used on channelizing devices shall meet or exceed the initial minimum coefficient of retroreflection as specified in the following table. Measurements shall be conducted according to ASTM E 810, without averaging. Sheeting used on cones, drums and flexible delineators shall be reboundable as tested according to ASTM D 4956. Prestriped sheeting for rigid substrates on barricades shall be white and orange.

| Initial Minimum Coefficient of Retroreflection candelas/foot candle/sq ft (candelas/lux/sq m) of material | | | | |
|---|---|---|---|---|
| Observation Angle (deg.) | Entrance Angle (deg.) | White | Orange | Fluorescent Orange |
| 0.2 | -4 | 365 | 160 | 150 |
| 0.2 | +30 | 175 | 80 | 70 |
| 0.5 | -4 | 245 | 100 | 95 |
| 0.5 | +30 | 100 | 50 | 40" |

Revise the first sentence of the first paragraph of Article 1106.02(c) of the Standard Specifications to read:

"Barricades and vertical panels shall have alternating white and orange stripes sloping downward at 45 degrees toward the side on which traffic will pass."

Revise the third sentence of the first paragraph of Article 1106.02(d) of the Standard Specifications to read:

"The bottom panels shall be 8 x 24 in. (200 x 600 mm) with alternating white and orange stripes sloping downward at 45 degrees toward the side on which traffic will pass."

**SUBCONTRACTOR MOBILIZATION PAYMENTS (BDE)**
Effective: April 2, 2005

To account for the preparatory work and operations necessary for the movement of subcontractor personnel, equipment, supplies, and incidentals to the project site and for all other work or operations that must be performed or costs incurred when beginning work approved for subcontracting in accordance with Article 108.01 of the Standard Specifications, the Contractor shall make a mobilization payment to each subcontractor.

This mobilization payment shall be made at least 14 days prior to the subcontractor starting work. The amount paid shall be equal to 3 percent of the amount of the subcontract reported on form BC 260A submitted for the approval of the subcontractor's work.

This provision shall be incorporated directly or by reference into each subcontract approved by the Department.

# ILLINOIS DEPARTMENT OF LABOR

## PREVAILING WAGES FOR VARIOUS COUNTIES EFFECTIVE DECEMBER 2007

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.

# Cook County Prevailing Wage for December 2007

| Trade Name | RG | TYP | C | Base | FRMAN | *M-F>8 | OSA | OSH | H/W | Pensn | Vac | Trng |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ASBESTOS ABT-GEN | | ALL | | 33.150 | 33.650 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| ASBESTOS ABT-MEC | | BLD | | 23.300 | 24.800 | 1.5 | 1.5 | 2.0 | 7.860 | 4.910 | 0.000 | 0.000 |
| BOILERMAKER | | BLD | | 38.540 | 42.000 | 2.0 | 2.0 | 2.0 | 6.720 | 7.440 | 0.000 | 0.300 |
| BRICK MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| CARPENTER | | ALL | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.910 | 0.000 | 0.490 |
| CEMENT MASON | | ALL | | 39.850 | 41.850 | 2.0 | 1.5 | 2.0 | 7.490 | 6.520 | 0.000 | 0.170 |
| CERAMIC TILE FNSHER | | BLD | | 30.150 | 0.000 | 1.5 | 1.5 | 2.0 | 5.850 | 6.600 | 0.000 | 0.340 |
| COMM. ELECT. | | BLD | | 33.940 | 36.440 | 1.5 | 1.5 | 2.0 | 7.200 | 5.590 | 0.000 | 0.700 |
| ELECTRIC PWR EQMT OP | | ALL | | 37.300 | 43.450 | 1.5 | 1.5 | 2.0 | 8.310 | 10.77 | 0.000 | 0.280 |
| ELECTRIC PWR GRNDMAN | | ALL | | 29.090 | 43.450 | 1.5 | 1.5 | 2.0 | 6.450 | 8.390 | 0.000 | 0.220 |
| ELECTRIC PWR LINEMAN | | ALL | | 37.300 | 43.450 | 1.5 | 1.5 | 2.0 | 8.310 | 10.77 | 0.000 | 0.280 |
| ELECTRICIAN | | ALL | | 37.800 | 40.400 | 1.5 | 1.5 | 2.0 | 10.00 | 7.650 | 0.000 | 0.750 |
| ELEVATOR CONSTRUCTOR | | BLD | | 42.045 | 47.300 | 2.0 | 2.0 | 2.0 | 8.275 | 6.060 | 2.520 | 0.550 |
| FENCE ERECTOR | | ALL | | 28.640 | 30.140 | 1.5 | 1.5 | 2.0 | 7.750 | 5.970 | 0.000 | 0.350 |
| GLAZIER | | BLD | | 33.000 | 34.500 | 1.5 | 2.0 | 2.0 | 6.740 | 10.15 | 0.000 | 0.600 |
| HT/FROST INSULATOR | | BLD | | 33.300 | 35.050 | 1.5 | 1.5 | 2.0 | 7.860 | 8.610 | 0.000 | 0.310 |
| IRON WORKER | | ALL | | 39.250 | 41.250 | 2.0 | 2.0 | 2.0 | 9.950 | 12.74 | 0.000 | 0.300 |
| LABORER | | ALL | | 33.150 | 33.900 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| LATHER | | BLD | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.910 | 0.000 | 0.490 |
| MACHINIST | | BLD | | 38.390 | 40.390 | 2.0 | 2.0 | 2.0 | 4.880 | 6.550 | 2.650 | 0.000 |
| MARBLE FINISHERS | | ALL | | 27.680 | 0.000 | 1.5 | 1.5 | 2.0 | 7.520 | 8.770 | 0.000 | 0.440 |
| MARBLE MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| MATERIAL TESTER I | | ALL | | 23.150 | 0.000 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| MATERIALS TESTER II | | ALL | | 28.150 | 0.000 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| MILLWRIGHT | | ALL | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.910 | 0.000 | 0.490 |
| OPERATING ENGINEER | | BLD | 1 | 41.550 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 2 | 40.250 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 3 | 37.700 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 4 | 35.950 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | FLT | 1 | 47.250 | 47.250 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.000 |
| OPERATING ENGINEER | | FLT | 2 | 45.750 | 47.250 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.000 |
| OPERATING ENGINEER | | FLT | 3 | 40.700 | 47.250 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.000 |
| OPERATING ENGINEER | | FLT | 4 | 33.850 | 47.250 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.000 |
| OPERATING ENGINEER | | HWY | 1 | 39.750 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 2 | 39.200 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 3 | 37.150 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 4 | 35.750 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 5 | 34.550 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| ORNAMNTL IRON WORKER | | ALL | | 37.350 | 39.600 | 2.0 | 2.0 | 2.0 | 7.750 | 11.58 | 0.000 | 0.500 |
| PAINTER | | ALL | | 35.400 | 39.820 | 1.5 | 1.5 | 1.5 | 6.550 | 7.400 | 0.000 | 0.420 |
| PAINTER SIGNS | | BLD | | 28.970 | 32.520 | 1.5 | 1.5 | 1.5 | 2.600 | 2.310 | 0.000 | 0.000 |
| PILEDRIVER | | ALL | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.910 | 0.000 | 0.490 |
| PIPEFITTER | | BLD | | 40.000 | 42.000 | 1.5 | 1.5 | 2.0 | 8.660 | 7.550 | 0.000 | 1.120 |
| PLASTERER | | BLD | | 36.100 | 38.270 | 1.5 | 1.5 | 2.0 | 7.000 | 7.740 | 0.000 | 0.400 |
| PLUMBER | | BLD | | 39.700 | 41.700 | 1.5 | 1.5 | 2.0 | 8.170 | 4.560 | 0.000 | 0.940 |
| ROOFER | | BLD | | 35.000 | 37.000 | 1.5 | 1.5 | 2.0 | 6.460 | 3.310 | 0.000 | 0.330 |
| SHEETMETAL WORKER | | BLD | | 33.400 | 36.070 | 1.5 | 1.5 | 2.0 | 6.460 | 7.850 | 0.000 | 0.590 |
| SIGN HANGER | | BLD | | 26.510 | 27.360 | 1.5 | 1.5 | 2.0 | 4.200 | 2.280 | 0.000 | 0.000 |
| SPRINKLER FITTER | | BLD | | 40.500 | 42.500 | 1.5 | 1.5 | 2.0 | 8.500 | 6.850 | 0.000 | 0.500 |
| STEEL ERECTOR | | ALL | | 36.250 | 37.750 | 2.0 | 2.0 | 2.0 | 8.970 | 10.77 | 0.000 | 0.300 |
| STONE MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| TERRAZZO FINISHER | | BLD | | 31.810 | 0.000 | 1.5 | 1.5 | 2.0 | 5.850 | 9.200 | 0.000 | 0.280 |
| TERRAZZO MASON | | BLD | | 35.390 | 38.390 | 1.5 | 1.5 | 2.0 | 5.850 | 10.05 | 0.000 | 0.320 |
| TILE MASON | | BLD | | 36.630 | 40.630 | 1.5 | 1.5 | 2.0 | 5.850 | 7.850 | 0.000 | 0.480 |
| TRAFFIC SAFETY WRKR | | HWY | | 24.300 | 25.900 | 1.5 | 1.5 | 2.0 | 3.780 | 1.875 | 0.000 | 0.000 |
| TRUCK DRIVER | E | ALL | 1 | 29.950 | 30.600 | 1.5 | 1.5 | 2.0 | 6.150 | 4.800 | 0.000 | 0.150 |
| TRUCK DRIVER | E | ALL | 2 | 30.200 | 30.600 | 1.5 | 1.5 | 2.0 | 6.150 | 4.800 | 0.000 | 0.150 |
| TRUCK DRIVER | E | ALL | 3 | 30.400 | 30.600 | 1.5 | 1.5 | 2.0 | 6.150 | 4.800 | 0.000 | 0.150 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRUCK DRIVER | E | ALL | 4 | 30.600 | 30.600 | 1.5 | 1.5 | 2.0 | 6.150 | 4.800 | 0.000 | 0.150 |
| TRUCK DRIVER | W | ALL | 1 | 30.950 | 31.500 | 1.5 | 1.5 | 2.0 | 6.500 | 3.950 | 0.000 | 0.000 |
| TRUCK DRIVER | W | ALL | 2 | 31.100 | 31.500 | 1.5 | 1.5 | 2.0 | 6.500 | 3.950 | 0.000 | 0.000 |
| TRUCK DRIVER | W | ALL | 3 | 31.300 | 31.500 | 1.5 | 1.5 | 2.0 | 6.500 | 3.950 | 0.000 | 0.000 |
| TRUCK DRIVER | W | ALL | 4 | 31.500 | 31.500 | 1.5 | 1.5 | 2.0 | 6.500 | 3.950 | 0.000 | 0.000 |
| TUCKPOINTER | | BLD | | 36.900 | 37.900 | 1.5 | 1.5 | 2.0 | 5.910 | 8.350 | 0.000 | 0.400 |

Legend:

M-F>8 (Overtime is required for any hour greater than 8 worked each day, Monday through Friday.

OSA (Overtime is required for every hour worked on Saturday)

OSH (Overtime is required for every hour worked on Sunday and Holidays)

H/W (Health & Welfare Insurance)

Pensn (Pension)

Vac (Vacation)

Trng (Training)

# Explanations

COOK COUNTY

TRUCK DRIVERS (WEST) - That part of the county West of Barrington Road.

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial/Decoration Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration such as the day after Thanksgiving for Veterans Day. If in doubt, please check with IDOL.

EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.
ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed products; all composition materials, granite tiles, warning detectable tiles, cement tiles, epoxy composite materials, pavers, glass, mosaics, fiberglass, and all substitute materials, for tile made in

tile-like units; all mixtures in tile like form of cement, metals, and other materials that are for and intended for use as a finished floor surface, stair treads, promenade roofs, walks, walls, ceilings, swimming pools, and all other places where tile is to form a finished interior or exterior. The mixing of all setting mortars including but not limited to thin-set mortars, epoxies, wall mud, and any other sand and cement mixtures or adhesives when used in the preparation, installation, repair, or maintenance of tile and/or similar materials. The handling and unloading of all sand, cement, lime, tile, fixtures, equipment, adhesives, or any other materials to be used in the preparation, installation, repair, or maintenance of tile and/or similar materials. Ceramic Tile Finishers shall fill all joints and voids regardless of method on all tile work, particularly and especially after installation of said tile work. Application of any and all protective coverings to all types of tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

COMMUNICATIONS ELECTRICIAN - Installation, operation, inspection, maintenance, repair and service of radio, television, recording, voice sound vision production and reproduction, telephone and telephone interconnect, facsimile, data apparatus, coaxial, fibre optic and wireless equipment, appliances and systems used for the transmission and reception of signals of any nature, business, domestic, commercial, education, entertainment, and residential purposes, including but not limited to, communication and telephone, electronic and sound equipment, fibre optic and data communication systems, and the performance of any task directly related to such installation or service whether at new or existing sites, such tasks to include the placing of wire and cable and electrical power conduit or other raceway work within the equipment room and pulling wire and/or cable through conduit and the installation of any incidental conduit, such that the employees covered hereby can complete any job in full.

MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all rigging for heavy work, the handling of all mateiral that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters cutting, use of tub saw or any other saw needed for preparation of material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installatin of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and experiors and customarily known as stone in the trade), carrara, sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior

and experior which sare installed in a similar manner.

MATERIAL TESTER I: Hand coring and drilling for testing of materials; field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel, fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

TERRAZZO FINISHER

The handling of sand, cement, marble chips, and all other materials that may be used by the Mosaic Terrazzo Mechanic, and the mixing, grinding, grouting, cleaning and sealing of all Marble, Mosaic, and Terrazzo work, floors, base, stairs, and wainscoting by hand or machine, and in addition, assisting and aiding Marble, Masonic, and Terrazzo Mechanics.

OPERATING ENGINEERS - BUILDING

Class 1. Mechanic; Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson attachment; Batch Plant; Benoto; Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver; Concrete Placer; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader, Elevating; Grouting Machines; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, one, two and three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes; Squeeze Cretes-screw Type Pumps; Raised and Blind Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-form Paver; Straddle Buggies; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Greaser Engineer; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, inside Freight Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill self-propelled); Rock Drill (truck mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination - Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators - (Rheostat Manual Controlled); Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 small Electric Drill Winches; Bobcat (up to and including 3/4 cu. yd.).

Class 4. Bobcats and/or other Skid Steer Loaders; Oilers; and Brick Forklift.

OPERATING ENGINEERS - FLOATING

Class 1. Craft foreman (Master Mechanic), diver/wet tender, engineer (hydraulic dredge).

Class 2. Crane/backhoe operator, mechanic/welder, assistant engineer (hydraulic dredge), leverman (hydraulic dredge), and diver tender.

Class 3. Deck equipment operator (machineryman), maintenance of crane (over 50 ton capacity) or backhoe (96,000 pounds or more), tug/launch operator, loader, dozer and like equipment on barge, breakwater wall,
slip/dock or scow, deck machinery, etc.

Class 4. Deck equipment operator machineryman/fireman), (4 equipment units or more) and crane maintenance 50 ton capacity and under or backhoe weighing 96,000 pounds or less, assistant tug operator.

OPERATING ENGINEERS - HEAVY AND HIGHWAY CONSTRUCTION

Class 1. Craft Foreman; Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines; ABG Paver; Backhoes with Caisson attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted): Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Hammerhead, Linden, Peco & Machines of a like nature; Crete Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dowell machine with Air Compressor; Dredges; Field Mechanic-Welder; Formless Curb and Gutter Machine; Gradall and Machines of a like nature; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Mounted; Hoists, One, Two and Three Drum; Hydraulic Backhoes; Backhoes with shear attachments; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Roto Mill Grinder; Slip-Form Paver; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Trenching Machine; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole; Drills (Tunnel Shaft); Underground Boring and/or Mining Machines; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.; Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Greaser Engineer; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; All Locomotives, Dinky; Pump Cretes; Squeeze Cretes-Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotory Snow Plows; Rototiller, Seaman, etc., self-propelled; Scoops - Tractor Drawn; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper; Scraper - Prime Mover in Tandem (Regardless of Size); Tank Car Heater; Tractors, Push, Pulling Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

Class 3. Boilers; Brooms, All Power Propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer (Two Bag and Over); Conveyor, Portable; Farm-Type Tractors Used for Mowing, Seeding, etc.; Fireman on Boilers; Forklift Trucks; Grouting Machine; Hoists, Automatic; Hoists, All Elevators; Hoists, Tugger Single Drum; Jeep Diggers; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete Power Driven; Pug Mills; Rollers, other than asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with "A" Frame; Work Boats; Tamper - Form-Motor Driven.

Class 4. Air Compressor; Combination - Small Equipment Operator; Directional Boring Machine; Generators; Heaters, Mechanical; Hydraulic Power Unit (Pile Driving, Extracting, or Drilling); Hydro-Blaster; Light Plants, All (1 through 5); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Tractaire; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 5. Bobcats (all); Brick Forklifts, Oilers.

TRAFFIC SAFETY

Work associated with barricades, horses and drums used to reduce lane usage on highway work, the installation and removal of temporary lane markings, and the installation and removal of temporary road signs.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION - EAST & WEST

Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; TEamsters Unskilled dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-mix Plant Hopper Operator, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnatrailers or turnapulls when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, 1-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch trucks, 3 axles or more; Mechanic--Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 618/993-7271 for wage rates or clarifications.

LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the classifications of operating engineer. The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.

# Du Page County Prevailing Wage for December 2007

| Trade Name | RG | TYP | C | Base | FRMAN | *M-F>8 | OSA | OSH | H/W | Pensn | Vac | Trng |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ASBESTOS ABT-GEN | | ALL | | 33.150 | 33.650 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| ASBESTOS ABT-MEC | | BLD | | 23.300 | 24.800 | 1.5 | 1.5 | 2.0 | 7.860 | 4.910 | 0.000 | 0.000 |
| BOILERMAKER | | BLD | | 38.540 | 42.000 | 2.0 | 2.0 | 2.0 | 6.720 | 7.440 | 0.000 | 0.300 |
| BRICK MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| CARPENTER | | ALL | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.910 | 0.000 | 0.490 |
| CEMENT MASON | | ALL | | 36.000 | 38.000 | 2.0 | 1.5 | 2.0 | 6.950 | 10.95 | 0.000 | 0.180 |
| CERAMIC TILE FNSHER | | BLD | | 30.150 | 0.000 | 1.5 | 1.5 | 2.0 | 5.850 | 6.600 | 0.000 | 0.340 |
| COMMUNICATION TECH | | BLD | | 31.000 | 33.100 | 1.5 | 1.5 | 2.0 | 7.300 | 11.11 | 0.000 | 0.470 |
| ELECTRIC PWR EQMT OP | | ALL | | 29.180 | 37.490 | 1.5 | 1.5 | 2.0 | 4.750 | 8.180 | 0.000 | 0.220 |
| ELECTRIC PWR GRNDMAN | | ALL | | 22.610 | 37.490 | 1.5 | 1.5 | 2.0 | 4.750 | 6.330 | 0.000 | 0.170 |
| ELECTRIC PWR LINEMAN | | ALL | | 34.710 | 37.490 | 1.5 | 1.5 | 2.0 | 4.750 | 9.720 | 0.000 | 0.260 |
| ELECTRIC PWR TRK DRV | | ALL | | 23.350 | 37.490 | 1.5 | 1.5 | 2.0 | 4.750 | 6.540 | 0.000 | 0.180 |
| ELECTRICIAN | | BLD | | 34.250 | 37.680 | 1.5 | 1.5 | 2.0 | 8.300 | 13.15 | 3.770 | 0.510 |
| ELEVATOR CONSTRUCTOR | | BLD | | 42.045 | 47.300 | 2.0 | 2.0 | 2.0 | 8.275 | 6.060 | 2.520 | 0.550 |
| FENCE ERECTOR | NE | ALL | | 28.640 | 30.140 | 1.5 | 1.5 | 2.0 | 7.750 | 5.970 | 0.000 | 0.350 |
| FENCE ERECTOR | W | ALL | | 38.120 | 40.030 | 2.0 | 2.0 | 2.0 | 8.140 | 14.49 | 0.000 | 0.230 |
| GLAZIER | | BLD | | 33.000 | 34.500 | 1.5 | 2.0 | 2.0 | 6.740 | 10.15 | 0.000 | 0.600 |
| HT/FROST INSULATOR | | BLD | | 33.300 | 35.050 | 1.5 | 1.5 | 2.0 | 7.860 | 8.610 | 0.000 | 0.310 |
| IRON WORKER | E | ALL | | 39.250 | 41.250 | 2.0 | 2.0 | 2.0 | 9.950 | 12.74 | 0.000 | 0.300 |
| IRON WORKER | W | ALL | | 38.120 | 40.030 | 2.0 | 2.0 | 2.0 | 8.140 | 14.49 | 0.000 | 0.230 |
| LABORER | | ALL | | 33.150 | 33.900 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| LATHER | | BLD | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.910 | 0.000 | 0.490 |
| MACHINIST | | BLD | | 38.390 | 40.390 | 2.0 | 2.0 | 2.0 | 4.880 | 6.550 | 2.650 | 0.000 |
| MARBLE FINISHERS | | ALL | | 27.680 | 0.000 | 1.5 | 1.5 | 2.0 | 7.520 | 8.770 | 0.000 | 0.440 |
| MARBLE MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| MATERIAL TESTER I | | ALL | | 23.150 | 0.000 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| MATERIALS TESTER II | | ALL | | 28.150 | 0.000 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| MILLWRIGHT | | ALL | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.910 | 0.000 | 0.490 |
| OPERATING ENGINEER | | BLD | 1 | 41.550 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 2 | 40.250 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 3 | 37.700 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 4 | 35.950 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 1 | 39.750 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 2 | 39.200 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 3 | 37.150 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 4 | 35.750 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 5 | 34.550 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| ORNAMNTL IRON WORKER | E | ALL | | 37.350 | 39.600 | 2.0 | 2.0 | 2.0 | 7.750 | 11.58 | 0.000 | 0.500 |
| ORNAMNTL IRON WORKER | W | ALL | | 38.120 | 40.030 | 2.0 | 2.0 | 2.0 | 8.140 | 14.49 | 0.000 | 0.230 |
| PAINTER | | ALL | | 35.330 | 36.330 | 1.5 | 1.5 | 1.5 | 6.400 | 6.500 | 0.000 | 0.500 |
| PAINTER SIGNS | | BLD | | 28.970 | 32.520 | 1.5 | 1.5 | 1.5 | 2.600 | 2.310 | 0.000 | 0.000 |
| PILEDRIVER | | ALL | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.910 | 0.000 | 0.490 |
| PIPEFITTER | | BLD | | 37.260 | 39.260 | 1.5 | 1.5 | 2.0 | 8.950 | 9.990 | 0.000 | 1.000 |
| PLASTERER | | BLD | | 32.000 | 33.500 | 1.5 | 1.5 | 2.0 | 6.450 | 6.770 | 0.000 | 0.570 |
| PLUMBER | | BLD | | 37.260 | 39.260 | 1.5 | 1.5 | 2.0 | 8.950 | 9.990 | 0.000 | 1.000 |
| ROOFER | | BLD | | 35.000 | 37.000 | 1.5 | 1.5 | 2.0 | 6.460 | 3.310 | 0.000 | 0.330 |
| SHEETMETAL WORKER | | BLD | | 38.210 | 40.210 | 1.5 | 1.5 | 2.0 | 6.900 | 8.870 | 0.000 | 0.640 |
| SPRINKLER FITTER | | BLD | | 40.500 | 42.500 | 1.5 | 1.5 | 2.0 | 8.500 | 6.850 | 0.000 | 0.500 |
| STEEL ERECTOR | E | ALL | | 36.250 | 37.750 | 2.0 | 2.0 | 2.0 | 8.970 | 10.77 | 0.000 | 0.300 |
| STEEL ERECTOR | W | ALL | | 38.120 | 40.030 | 2.0 | 2.0 | 2.0 | 8.140 | 14.49 | 0.000 | 0.230 |
| STONE MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| TERRAZZO FINISHER | | BLD | | 31.810 | 0.000 | 1.5 | 1.5 | 2.0 | 5.850 | 9.200 | 0.000 | 0.280 |
| TERRAZZO MASON | | BLD | | 35.390 | 38.390 | 1.5 | 1.5 | 2.0 | 5.850 | 10.05 | 0.000 | 0.320 |
| TILE MASON | | BLD | | 36.630 | 40.630 | 1.5 | 1.5 | 2.0 | 5.850 | 7.850 | 0.000 | 0.480 |
| TRAFFIC SAFETY WRKR | | HWY | | 24.300 | 25.900 | 1.5 | 1.5 | 2.0 | 3.780 | 1.875 | 0.000 | 0.000 |
| TRUCK DRIVER | | ALL | 1 | 30.950 | 31.500 | 1.5 | 1.5 | 2.0 | 6.500 | 3.950 | 0.000 | 0.150 |
| TRUCK DRIVER | | ALL | 2 | 31.100 | 31.500 | 1.5 | 1.5 | 2.0 | 6.500 | 3.950 | 0.000 | 0.150 |
| TRUCK DRIVER | | ALL | 3 | 31.300 | 31.500 | 1.5 | 1.5 | 2.0 | 6.500 | 3.950 | 0.000 | 0.150 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TRUCK DRIVER | ALL | 4 | 31.500 | 31.500 | 1.5 | 1.5 | 2.0 | 6.500 | 3.950 | 0.000 | 0.150 |
| TUCKPOINTER | BLD | | 36.900 | 37.900 | 1.5 | 1.5 | 2.0 | 5.910 | 8.350 | 0.000 | 0.400 |

Legend:

M-F>8 (Overtime is required for any hour greater than 8 worked each day, Monday through Friday.

OSA (Overtime is required for every hour worked on Saturday)

OSH (Overtime is required for every hour worked on Sunday and Holidays)

H/W (Health & Welfare Insurance)

Pensn (Pension)

Vac (Vacation)

Trng (Training)

# Explanations

DUPAGE COUNTY

IRON WORKERS AND FENCE ERECTOR (WEST) - West of Route 53.

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial/Decoration Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration such as the day after Thanksgiving for Veterans Day. If in doubt, please check with IDOL.

EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.
ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

TRAFFIC SAFETY - work associated with barricades, horses and drums used to reduce lane usage on highway work, the installation and removal of temporary lane markings, and the installation and removal of temporary road signs.

CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed products; all composition materials, granite tiles, warning detectable tiles, cement tiles, epoxy composite materials, pavers, glass, mosaics, fiberglass, and all substitute materials, for tile made in

tile-like units; all mixtures in tile like form of cement, metals, and other materials that are for and intended for use as a finished floor surface, stair treads, promenade roofs, walks, walls, ceilings, swimming pools, and all other places where tile is to form a finished interior or exterior. The mixing of all setting mortars including but not limited to thin-set mortars, epoxies, wall mud, and any other sand and cement mixtures or adhesives when used in the preparation, installation, repair, or maintenance of tile and/or similar materials. The handling and unloading of all sand, cement, lime, tile, fixtures, equipment, adhesives, or any other materials to be used in the preparation, installation, repair, or maintenance of tile and/or similar materials. Ceramic Tile Finishers shall fill all joints and voids regardless of method on all tile work, particularly and especially after installation of said tile work. Application of any and all protective coverings to all types of tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

COMMUNICATIONS TECHNICIAN

Low voltage installation, maintenance and removal of telecommunication facilities (voice, sound, data and video) including telephone and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, micro waves, V-SAT, bypass, CATV, WAN (wide area networks), LAN (local area networks), and ISDN (integrated system digital network), pulling of wire in raceways, but not the installation of raceways.

MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all rigging for heavy work, the handling of all mateiral that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters cutting, use of tub saw or any other saw needed for preparation of material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installatin of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and experiors and customarily known as stone in the trade), carrara, sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior and experior which sare installed in a similar manner.

MATERIAL TESTER I: Hand coring and drilling for testing of materials; field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel,

fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION

Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; Teamsters Unskilled dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yeards; Ready-mix Plant Hopper Operator, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnatrailers or turnapulls when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, 1-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch trucks, 3 axles or more; Mechanic--Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

OPERATING ENGINEERS - BUILDING

Class 1. Mechanic; Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson attachment; Batch Plant; Benoto; Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver; Concrete Placer; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader, Elevating; Grouting Machines; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, one, two and three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes; Squeeze Cretes-screw Type Pumps; Raised and Blind Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-form Paver; Straddle Buggies; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Fortlist Trucks; Greaser Engineer; Highlift Shovels or Front Endloaders under 2-1/4

yd.; Hoists, Automatic; Hoists, inside Freight Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill (self-propelled); Rock Drill (truck mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination - Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators - (Rheostat Manual Controlled); Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 small Electric Drill Winches; Bobcat (up to and including 3/4 cu. yd.).
Class 4. Bobcats and/or other Skid Steer Loaders; Oilers; and Brick Forklift.

OPERATING ENGINEERS - HEAVY AND HIGHWAY CONSTRUCTION
Class 1. Craft Foreman; Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines; ABG Paver; Backhoes with Caisson attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted): Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Hammerhead, Linden, Peco & Machines of a like nature; Crete Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dowell machine with Air Compressor; Dredges; Field Mechanic-Welder; Formless Curb and Gutter Machine; Gradall and Machines of a like nature; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Mounted; Hoists, One, Two and Three Drum; Hydraulic Backhoes; Backhoes with shear attachments; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Roto Mill Grinder; Slip-Form Paver; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Trenching Machine; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole; Drills (Tunnel Shaft); Underground Boring and/or Mining Machines; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.; Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Greaser Engineer; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; All Locomotives, Dinky; Pump Cretes; Squeeze Cretes-Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotory Snow Plows; Rototiller, Seaman, etc., self-propelled; Scoops - Tractor Drawn; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper; Scraper - Prime Mover in Tandem (Regardless of Size); Tank Car Heater; Tractors, Push, Pulling Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

Class 3. Boilers; Brooms, All Power Propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer (Two Bag and Over); Conveyor, Portable; Farm-Type Tractors Used for Mowing, Seeding, etc.; Fireman on Boilers; Forklift Trucks; Grouting Machine; Hoists, Automatic; Hoists, All Elevators; Hoists, Tugger Single Drum; Jeep Diggers; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete Power Driven; Pug Mills; Rollers, other than asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with "A" Frame; Work Boats; Tamper - Form-Motor Driven.

Class 4. Air Compressor; Combination - Small Equipment Operator; Directional Boring Machine; Generators; Heaters, Mechanical; Hydraulic Power Unit (Pile Driving, Extracting, or Drilling); Hydro-Blaster; Light Plants, All (1 through 5); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Tractaire; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 5. Bobcats (all); Brick Forklifts, Oilers.

TERRAZZO FINISHER

The handling of sand, cement, marble chips, and all other materials that may be used by the Mosaic Terrazzo Mechanic, and the mixing, grinding, grouting, cleaning and sealing of all Marble, Mosaic, and Terrazzo work, floors, base, stairs, and wainscoting by hand or machine, and in addition, assisting and aiding Marble, Masonic, and Terrazzo Mechanics.

Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 618/993-7271 for wage rates or clarifications.

LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the classifications of operating engineer. The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.

# Kane County Prevailing Wage for December 2007

| Trade Name | RG | TYP | C | Base | FRMAN | *M-F>8 | OSA | OSH | H/W | Pensn | Vac | Trng |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ASBESTOS ABT-GEN | | ALL | | 33.150 | 33.650 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| ASBESTOS ABT-MEC | | BLD | | 23.300 | 24.800 | 1.5 | 1.5 | 2.0 | 7.860 | 4.910 | 0.000 | 0.000 |
| BOILERMAKER | | BLD | | 38.540 | 42.000 | 2.0 | 2.0 | 2.0 | 6.720 | 7.440 | 0.000 | 0.300 |
| BRICK MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| CARPENTER | | ALL | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.920 | 0.000 | 0.490 |
| CEMENT MASON | | ALL | | 37.300 | 39.300 | 2.0 | 1.5 | 2.0 | 7.000 | 9.510 | 0.000 | 0.150 |
| CERAMIC TILE FNSHER | | BLD | | 30.150 | 0.000 | 1.5 | 1.5 | 2.0 | 5.850 | 6.600 | 0.000 | 0.340 |
| COMMUNICATION TECH | N | BLD | | 29.960 | 31.760 | 1.5 | 1.5 | 2.0 | 5.842 | 6.290 | 0.000 | 0.375 |
| COMMUNICATION TECH | S | BLD | | 32.440 | 34.540 | 1.5 | 1.5 | 2.0 | 8.890 | 8.110 | 0.000 | 0.650 |
| ELECTRIC PWR EQMT OP | | ALL | | 29.180 | 37.490 | 1.5 | 1.5 | 2.0 | 4.750 | 8.180 | 0.000 | 0.220 |
| ELECTRIC PWR GRNDMAN | | ALL | | 22.610 | 37.490 | 1.5 | 1.5 | 2.0 | 4.750 | 6.330 | 0.000 | 0.170 |
| ELECTRIC PWR LINEMAN | | ALL | | 34.710 | 37.490 | 1.5 | 1.5 | 2.0 | 4.750 | 9.720 | 0.000 | 0.260 |
| ELECTRIC PWR TRK DRV | | ALL | | 23.350 | 37.490 | 1.5 | 1.5 | 2.0 | 4.750 | 6.540 | 0.000 | 0.180 |
| ELECTRICIAN | N | ALL | | 40.470 | 44.510 | 1.5 | 1.5 | 2.0 | 9.920 | 9.300 | 0.000 | 0.500 |
| ELECTRICIAN | S | BLD | | 40.390 | 44.430 | 1.5 | 1.5 | 2.0 | 8.890 | 10.10 | 0.000 | 0.810 |
| ELEVATOR CONSTRUCTOR | | BLD | | 42.045 | 47.300 | 2.0 | 2.0 | 2.0 | 8.275 | 6.060 | 2.520 | 0.550 |
| FENCE ERECTOR | | ALL | | 38.120 | 40.030 | 2.0 | 2.0 | 2.0 | 8.140 | 14.49 | 0.000 | 0.230 |
| GLAZIER | | BLD | | 33.000 | 34.500 | 1.5 | 2.0 | 2.0 | 6.740 | 10.15 | 0.000 | 0.600 |
| HT/FROST INSULATOR | | BLD | | 33.300 | 35.050 | 1.5 | 1.5 | 2.0 | 7.860 | 8.610 | 0.000 | 0.310 |
| IRON WORKER | | ALL | | 38.120 | 40.030 | 2.0 | 2.0 | 2.0 | 8.140 | 14.49 | 0.000 | 0.230 |
| LABORER | | ALL | | 33.150 | 33.900 | 1.5 | 1.5 | 2.0 | 8.050 | 5.600 | 0.000 | 0.220 |
| LATHER | | BLD | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.920 | 0.000 | 0.490 |
| MACHINIST | | BLD | | 38.390 | 40.390 | 2.0 | 2.0 | 2.0 | 4.880 | 6.550 | 2.650 | 0.000 |
| MARBLE FINISHERS | | ALL | | 27.680 | 0.000 | 1.5 | 1.5 | 2.0 | 7.520 | 8.770 | 0.000 | 0.440 |
| MARBLE MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| MATERIAL TESTER I | | ALL | | 23.150 | 0.000 | 1.5 | 1.5 | 2.0 | 8.050 | 5.600 | 0.000 | 0.220 |
| MATERIALS TESTER II | | ALL | | 28.150 | 0.000 | 1.5 | 1.5 | 2.0 | 8.050 | 5.600 | 0.000 | 0.220 |
| MILLWRIGHT | | ALL | | 36.520 | 38.520 | 1.5 | 1.5 | 2.0 | 7.960 | 5.920 | 0.000 | 0.490 |
| OPERATING ENGINEER | | BLD | 1 | 41.550 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 2 | 40.250 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 3 | 37.700 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 4 | 35.950 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 1 | 39.750 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 2 | 39.200 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 3 | 37.150 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 4 | 35.750 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 5 | 34.550 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| ORNAMNTL IRON WORKER | | ALL | | 38.120 | 40.030 | 2.0 | 2.0 | 2.0 | 8.140 | 14.49 | 0.000 | 0.230 |
| PAINTER | | ALL | | 35.330 | 36.330 | 1.5 | 1.5 | 1.5 | 6.400 | 6.500 | 0.000 | 0.500 |
| PAINTER SIGNS | | BLD | | 28.970 | 32.520 | 1.5 | 1.5 | 1.5 | 2.600 | 2.310 | 0.000 | 0.000 |
| PILEDRIVER | | ALL | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.920 | 0.000 | 0.490 |
| PIPEFITTER | | BLD | | 37.260 | 39.260 | 1.5 | 1.5 | 2.0 | 8.950 | 9.990 | 0.000 | 1.000 |
| PLASTERER | | BLD | | 36.100 | 38.270 | 1.5 | 1.5 | 2.0 | 7.000 | 7.740 | 0.000 | 0.400 |
| PLUMBER | | BLD | | 37.260 | 39.260 | 1.5 | 1.5 | 2.0 | 8.950 | 9.990 | 0.000 | 1.000 |
| ROOFER | | BLD | | 35.000 | 37.000 | 1.5 | 1.5 | 2.0 | 6.460 | 3.310 | 0.000 | 0.330 |
| SHEETMETAL WORKER | | BLD | | 38.210 | 40.210 | 1.5 | 1.5 | 2.0 | 6.900 | 8.870 | 0.000 | 0.640 |
| SIGN HANGER | | BLD | | 26.070 | 27.570 | 1.5 | 1.5 | 2.0 | 3.800 | 3.550 | 0.000 | 0.000 |
| SPRINKLER FITTER | | BLD | | 40.500 | 42.500 | 1.5 | 1.5 | 2.0 | 8.500 | 6.850 | 0.000 | 0.500 |
| STEEL ERECTOR | | ALL | | 38.120 | 40.030 | 2.0 | 2.0 | 2.0 | 8.140 | 14.49 | 0.000 | 0.230 |
| STONE MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| TERRAZZO FINISHER | | BLD | | 31.810 | 0.000 | 1.5 | 1.5 | 2.0 | 5.850 | 9.200 | 0.000 | 0.280 |
| TERRAZZO MASON | | BLD | | 35.390 | 38.390 | 1.5 | 1.5 | 2.0 | 5.850 | 10.05 | 0.000 | 0.320 |
| TILE MASON | | BLD | | 36.630 | 40.630 | 1.5 | 1.5 | 2.0 | 5.850 | 7.850 | 0.000 | 0.480 |
| TRAFFIC SAFETY WRKR | | HWY | | 24.300 | 25.900 | 1.5 | 1.5 | 2.0 | 3.780 | 1.875 | 0.000 | 0.000 |
| TRUCK DRIVER | | ALL | 1 | 30.950 | 31.500 | 1.5 | 1.5 | 2.0 | 6.500 | 3.950 | 0.000 | 0.150 |
| TRUCK DRIVER | | ALL | 2 | 31.100 | 31.500 | 1.5 | 1.5 | 2.0 | 6.500 | 3.950 | 0.000 | 0.150 |
| TRUCK DRIVER | | ALL | 3 | 31.300 | 31.500 | 1.5 | 1.5 | 2.0 | 6.500 | 3.950 | 0.000 | 0.150 |
| TRUCK DRIVER | | ALL | 4 | 31.500 | 31.500 | 1.5 | 1.5 | 2.0 | 6.500 | 3.950 | 0.000 | 0.150 |

TUCKPOINTER BLD 36.900 37.900 1.5 1.5 2.0 5.910 8.350 0.000 0.400

Legend:

M-F>8 (Overtime is required for any hour greater than 8 worked each day, Monday through Friday.

OSA (Overtime is required for every hour worked on Saturday)

OSH (Overtime is required for every hour worked on Sunday and Holidays)

H/W (Health & Welfare Insurance)

Pensn (Pension)

Vac (Vacation)

Trng (Training)

# Explanations

KANE COUNTY

ELECTRICIANS AND COMMUNICATIONS TECHNICIAN (NORTH) - Townships of Burlington, Campton, Dundee, Elgin, Hampshire, Plato, Rutland, St. Charles (except the West half of Sec. 26, all of Secs. 27, 33, and 34, South half of Sec. 28, West half of Sec. 35), Virgil and Valley View CCC and Elgin Mental Health Center.

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial/Decoration Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration such as the day after Thanksgiving for Veterans Day. If in doubt, please check with IDOL.

EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.

ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed products; all composition materials, granite tiles, warning detectable tiles, cement tiles, epoxy composite materials, pavers, glass,

mosaics, fiberglass, and all substitute materials, for tile made in tile-like units; all mixtures in tile like form of cement, metals, and other materials that are for and intended for use as a finished floor surface, stair treads, promenade roofs, walks, walls, ceilings, swimming pools, and all other places where tile is to form a finished interior or exterior. The mixing of all setting mortars including but not limited to thin-set mortars, epoxies, wall mud, and any other sand and cement mixtures or adhesives when used in the preparation, installation, repair, or maintenance of tile and/or similar materials. The handling and unloading of all sand, cement, lime, tile, fixtures, equipment, adhesives, or any other materials to be used in the preparation, installation, repair, or maintenance of tile and/or similar materials. Ceramic Tile Finishers shall fill all joints and voids regardless of method on all tile work, particularly and especially after installation of said tile work. Application of any and all protective coverings to all types of tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

COMMUNICATIONS TECHNICIAN

Construction, installation, maintenance and removal of telecommunication facilities (voice, sound, data and video), telephone, security systems, fire alarm systems that are a component of a multiplex system and share a common cable, and data inside wire, interconnect, terminal equipment, central offices, PABX and equipment, micro waves, V-SAT, bypass, CATV, WAN (wide area network), LAN (local area networks), and ISDN (integrated system digital network), pulling of wire in raceways, but not the installation of raceways.

MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all rigging for heavy work, the handling of all mateiral that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters cutting, use of tub saw or any other saw needed for preparation of material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installatin of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and experiors and customarily known as stone in the trade), carrara, sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior and experior which sare installed in a similar manner.

MATERIAL TESTER I: Hand coring and drilling for testing of materials;

field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel, fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

TRAFFIC SAFETY - work associated with barricades, horses and drums used to reduce lane usage on highway work, the installation and removal of temporary lane markings, and the installation and removal of temporary road signs.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION
Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; Teamsters; Unskilled dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yeards; Ready-mix Plant Hopper Operator, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnatrailers or turnapulls when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, 1-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch trucks, 3 axles or more; Mechanic--Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

OPERATING ENGINEERS - BUILDING

Class 1. Mechanic; Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson attachment; Batch Plant; Benoto; Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver; Concrete Placer; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader, Elevating; Grouting Machines; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, one, two and three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes; Squeeze Cretes-screw Type Pumps; Raised and Blind

Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-form Paver; Straddle Buggies; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Greaser Engineer; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, inside Freight Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill (self-propelled); Rock Drill (truck mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination - Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators - (Rheostat Manual Controlled); Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 small Electric Drill Winches; Bobcat (up to and including 3/4 cu. yd.).

Class 4. Bobcats and/or other Skid Steer Loaders; Oilers; and Brick Forklift.

OPERATING ENGINEERS - HEAVY AND HIGHWAY CONSTRUCTION

Class 1. Craft Foreman; Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines; ABG Paver; Backhoes with Caisson attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted): Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Hammerhead, Linden, Peco & Machines of a like nature; Crete Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dowell machine with Air Compressor; Dredges; Field Mechanic-Welder; Formless Curb and Gutter Machine; Gradall and Machines of a like nature; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Mounted; Hoists, One, Two and Three Drum; Hydraulic Backhoes; Backhoes with shear attachments; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Roto Mill Grinder; Slip-Form Paver; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Trenching Machine; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole; Drills (Tunnel Shaft); Underground Boring and/or Mining Machines; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.; Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Greaser Engineer; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All

Attachments); Hydro-Blaster; All Locomotives, Dinky; Pump Cretes; Squeeze Cretes-Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotory Snow Plows; Rototiller, Seaman, etc., self-propelled; Scoops - Tractor Drawn; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper; Scraper - Prime Mover in Tandem (Regardless of Size); Tank Car Heater; Tractors, Push, Pulling Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

Class 3. Boilers; Brooms, All Power Propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer (Two Bag and Over); Conveyor, Portable; Farm-Type Tractors Used for Mowing, Seeding, etc.; Fireman on Boilers; Forklift Trucks; Grouting Machine; Hoists, Automatic; Hoists, All Elevators; Hoists, Tugger Single Drum; Jeep Diggers; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete Power Driven; Pug Mills; Rollers, other than asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with "A" Frame; Work Boats; Tamper - Form-Motor Driven.

Class 4. Air Compressor; Combination - Small Equipment Operator; Directional Boring Machine; Generators; Heaters, Mechanical; Hydraulic Power Unit (Pile Driving, Extracting, or Drilling); Hydro-Blaster; Light Plants, All (1 through 5); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Tractaire; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 5. Bobcats (all); Brick Forklifts; Oilers.

TERRAZZO FINISHER

The handling of sand, cement, marble chips, and all other materials that may be used by the Mosaic Terrazzo Mechanic, and the mixing, grinding, grouting, cleaning and sealing of all Marble, Mosaic, and Terrazzo work, floors, base, stairs, and wainscoting by hand or machine, and in addition, assisting and aiding Marble, Masonic, and Terrazzo Mechanics.

Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 618/993-7271 for wage rates or clarifications.

LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the classifications of operating engineer. The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.

# Lake County Prevailing Wage for December 2007

| Trade Name | RG | TYP | C | Base | FRMAN | *M-F>8 | OSA | OSH | H/W | Pensn | Vac | Trng |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ASBESTOS ABT-GEN | | ALL | | 33.150 | 33.650 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| ASBESTOS ABT-MEC | | BLD | | 23.300 | 24.800 | 1.5 | 1.5 | 2.0 | 7.860 | 4.910 | 0.000 | 0.000 |
| BOILERMAKER | | BLD | | 38.540 | 42.000 | 2.0 | 2.0 | 2.0 | 6.720 | 7.440 | 0.000 | 0.300 |
| BRICK MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| CARPENTER | | ALL | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.910 | 0.000 | 0.490 |
| CEMENT MASON | | ALL | | 37.000 | 39.000 | 2.0 | 1.5 | 2.0 | 7.680 | 9.150 | 0.000 | 0.150 |
| CERAMIC TILE FNSHER | | BLD | | 30.150 | 0.000 | 1.5 | 1.5 | 2.0 | 5.850 | 6.600 | 0.000 | 0.340 |
| COMMUNICATION TECH | | BLD | | 31.400 | 33.500 | 1.5 | 1.5 | 2.0 | 8.170 | 8.480 | 1.570 | 0.460 |
| ELECTRIC PWR EQMT OP | | ALL | | 29.180 | 37.490 | 1.5 | 1.5 | 2.0 | 4.750 | 8.180 | 0.000 | 0.220 |
| ELECTRIC PWR GRNDMAN | | ALL | | 22.610 | 37.490 | 1.5 | 1.5 | 2.0 | 4.750 | 6.330 | 0.000 | 0.170 |
| ELECTRIC PWR LINEMAN | | ALL | | 34.710 | 37.490 | 1.5 | 1.5 | 2.0 | 4.750 | 9.720 | 0.000 | 0.260 |
| ELECTRIC PWR TRK DRV | | ALL | | 23.350 | 37.490 | 1.5 | 1.5 | 2.0 | 4.750 | 6.540 | 0.000 | 0.180 |
| ELECTRICIAN | | BLD | | 36.680 | 40.350 | 1.5 | 1.5 | 2.0 | 10.27 | 11.01 | 1.470 | 0.520 |
| ELEVATOR CONSTRUCTOR | | BLD | | 42.045 | 47.300 | 2.0 | 2.0 | 2.0 | 8.275 | 6.060 | 2.520 | 0.550 |
| FENCE ERECTOR | | ALL | | 28.640 | 30.140 | 1.5 | 1.5 | 2.0 | 7.750 | 5.970 | 0.000 | 0.350 |
| GLAZIER | | BLD | | 33.000 | 34.500 | 1.5 | 2.0 | 2.0 | 6.740 | 10.15 | 0.000 | 0.600 |
| HT/FROST INSULATOR | | BLD | | 33.300 | 35.050 | 1.5 | 1.5 | 2.0 | 7.860 | 8.610 | 0.000 | 0.310 |
| IRON WORKER | | ALL | | 39.250 | 41.250 | 2.0 | 2.0 | 2.0 | 9.950 | 12.74 | 0.000 | 0.300 |
| LABORER | | ALL | | 33.150 | 33.900 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| LATHER | | BLD | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.910 | 0.000 | 0.490 |
| MACHINIST | | BLD | | 38.390 | 40.390 | 2.0 | 2.0 | 2.0 | 4.880 | 6.550 | 2.650 | 0.000 |
| MARBLE FINISHERS | | ALL | | 27.680 | 0.000 | 1.5 | 1.5 | 2.0 | 7.520 | 8.770 | 0.000 | 0.440 |
| MARBLE MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| MATERIAL TESTER I | | ALL | | 23.150 | 0.000 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| MATERIALS TESTER II | | ALL | | 28.150 | 0.000 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| MILLWRIGHT | | ALL | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.910 | 0.000 | 0.490 |
| OPERATING ENGINEER | | BLD | 1 | 41.550 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 2 | 40.250 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 3 | 37.700 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 4 | 35.950 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | FLT | 1 | 47.250 | 47.250 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.000 |
| OPERATING ENGINEER | | FLT | 2 | 45.750 | 47.250 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.000 |
| OPERATING ENGINEER | | FLT | 3 | 40.700 | 47.250 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.000 |
| OPERATING ENGINEER | | FLT | 4 | 33.850 | 47.250 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.000 |
| OPERATING ENGINEER | | HWY | 1 | 39.750 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 2 | 39.200 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 3 | 37.150 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 4 | 35.750 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 5 | 34.550 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| ORNAMNTL IRON WORKER | | ALL | | 37.350 | 39.600 | 2.0 | 2.0 | 2.0 | 7.750 | 11.58 | 0.000 | 0.500 |
| PAINTER | | ALL | | 35.400 | 39.820 | 1.5 | 1.5 | 1.5 | 6.550 | 7.400 | 0.000 | 0.420 |
| PAINTER SIGNS | | BLD | | 28.970 | 32.520 | 1.5 | 1.5 | 1.5 | 2.600 | 2.310 | 0.000 | 0.000 |
| PILEDRIVER | | ALL | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.910 | 0.000 | 0.490 |
| PIPEFITTER | | BLD | | 40.000 | 42.000 | 1.5 | 1.5 | 2.0 | 8.660 | 7.550 | 0.000 | 1.120 |
| PLASTERER | | BLD | | 31.700 | 32.700 | 1.5 | 1.5 | 2.0 | 6.130 | 8.590 | 0.000 | 0.050 |
| PLUMBER | | BLD | | 39.500 | 41.500 | 1.5 | 1.5 | 2.0 | 9.040 | 8.250 | 0.000 | 0.400 |
| ROOFER | | BLD | | 35.000 | 37.000 | 1.5 | 1.5 | 2.0 | 6.460 | 3.310 | 0.000 | 0.330 |
| SHEETMETAL WORKER | | BLD | | 33.400 | 36.070 | 1.5 | 1.5 | 2.0 | 6.460 | 7.850 | 0.000 | 0.590 |
| SIGN HANGER | | BLD | | 26.510 | 27.360 | 1.5 | 1.5 | 2.0 | 4.200 | 2.280 | 0.000 | 0.000 |
| SPRINKLER FITTER | | BLD | | 40.500 | 42.500 | 1.5 | 1.5 | 2.0 | 8.500 | 6.850 | 0.000 | 0.500 |
| STEEL ERECTOR | | ALL | | 36.250 | 37.750 | 2.0 | 2.0 | 2.0 | 8.970 | 10.77 | 0.000 | 0.300 |
| STONE MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| TERRAZZO FINISHER | | BLD | | 31.810 | 0.000 | 1.5 | 1.5 | 2.0 | 5.850 | 9.200 | 0.000 | 0.280 |
| TERRAZZO MASON | | BLD | | 35.390 | 38.390 | 1.5 | 1.5 | 2.0 | 5.850 | 10.05 | 0.000 | 0.320 |
| TILE MASON | | BLD | | 36.630 | 40.630 | 1.5 | 1.5 | 2.0 | 5.850 | 7.850 | 0.000 | 0.480 |
| TRAFFIC SAFETY WRKR | | HWY | | 24.300 | 25.900 | 1.5 | 1.5 | 2.0 | 3.780 | 1.875 | 0.000 | 0.000 |
| TRUCK DRIVER | | ALL | 1 | 30.700 | 31.250 | 1.5 | 1.5 | 2.0 | 5.450 | 5.250 | 0.000 | 0.150 |
| TRUCK DRIVER | | ALL | 2 | 30.850 | 31.250 | 1.5 | 1.5 | 2.0 | 5.450 | 5.250 | 0.000 | 0.150 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TRUCK DRIVER | ALL | 3 | 31.050 | 31.250 | 1.5 | 1.5 | 2.0 | 5.450 | 5.250 | 0.000 | 0.150 |
| TRUCK DRIVER | ALL | 4 | 31.250 | 31.250 | 1.5 | 1.5 | 2.0 | 5.450 | 5.250 | 0.000 | 0.150 |
| TUCKPOINTER | BLD | | 36.900 | 37.900 | 1.5 | 1.5 | 2.0 | 5.910 | 8.350 | 0.000 | 0.400 |

Legend:

M-F>8 (Overtime is required for any hour greater than 8 worked each day, Monday through Friday.

OSA (Overtime is required for every hour worked on Saturday)

OSH (Overtime is required for every hour worked on Sunday and Holidays)

H/W (Health & Welfare Insurance)

Pensn (Pension)

Vac (Vacation)

Trng (Training)

# Explanations

LAKE COUNTY

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial/Decoration Day, Fourth of July, Day, Veterans Day, Thanksgiving Day, Christmas Day. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration such as the day after Thanksgiving for Veterans Day. If in doubt, please check with IDOL.

EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.

ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed products; all composition materials, granite tiles, warning detectable tiles, cement tiles, epoxy composite materials, pavers, glass, mosaics, fiberglass, and all substitute materials, for tile made in tile-like units; all mixtures in tile like form of cement, metals, and other materials that are for and intended for use as a finished floor surface, stair treads, promenade roofs, walks, walls, ceilings, swimming pools, and all other places where tile is to form a finished

interior or exterior. The mixing of all setting mortars including but not limited to thin-set mortars, epoxies, wall mud, and any other sand and cement mixtures or adhesives when used in the preparation, installation, repair, or maintenance of tile and/or similar materials. The handling and unloading of all sand, cement, lime, tile, fixtures, equipment, adhesives, or any other materials to be used in the preparation, installation, repair, or maintenance of tile and/or similar materials. Ceramic Tile Finishers shall fill all joints and voids regardless of method on all tile work, particularly and especially after installation of said tile work. Application of any and all protective coverings to all types of tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

COMMUNICATION TECHNICIAN

Low voltage construction, installation, maintenance and removal of telecommunication facilities (voice, sound, data and video) including outside plant, telephone, security systems and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, micro waves, V-SAT, bypass, CATV, WAN (wide area network), LAN (local area networks), and ISDN (integrated system digital network), pulling of wire in raceways, but not the installation of raceways.

MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all rigging for heavy work, the handling of all mateiral that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters cutting, use of tub saw or any other saw needed for preparation of material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installatin of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and experiors and customarily known as stone in the trade), carrara, sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior and experior which sare installed in a similar manner.

MATERIAL TESTER I: Hand coring and drilling for testing of materials; field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel, fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

TRAFFIC SAFETY - work associated with barricades, horses and drums used to reduce lane usage on highway work, the installation and removal of temporary lane markings, and the installation and removal of temporary road signs.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION
Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; Teamsters; Unskilled dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-mix Plant Hopper Operator, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnatrailers or turnapulls when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, 1-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch trucks, 3 axles or more; Mechanic--Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

OPERATING ENGINEERS - BUILDING

Class 1. Mechanic; Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson attachment; Batch Plant; Benoto; Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver; Concrete Placer; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader, Elevating; Grouting Machines; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, one, two and three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes; Squeeze Cretes-screw Type Pumps; Raised and Blind Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-form Paver; Straddle Buggies; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Greaser Engineer; Highlift Shovels or Front Endloaders under 2-1/4

yd.; Hoists, Automatic; Hoists, inside Freight Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill (self-propelled); Rock Drill (truck mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination - Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators - (Rheostat Manual Controlled); Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 small Electric Drill Winches; Bobcat (up to and including 3/4 cu. yd.).

Class 4. Bobcats and/or other Skid Steer Loaders; Oilers; and Brick Forklift.

OPERATING ENGINEERS - FLOATING

Class 1. Craft foreman (Master Mechanic), diver/wet tender, engineer (hydraulic dredge).

Class 2. Crane/backhoe operator, mechanic/welder, assistant engineer (hydraulic dredge), leverman (hydraulic dredge), and diver tender.

Class 3. Deck equipment operator (machineryman), maintenance of crane (over 50 ton capacity) or backhoe (96,000 pounds or more), tug/launch operator, loader, dozer and like equipment on barge, breakwater wall, slip/dock or scow, deck machinery, etc.

Class 4. Deck equipment operator (machineryman/fireman), (4 equipment units or more) and crane maintenance 50 ton capacity and under or backhoe weighing 96,000 pounds or less, assistant tug operator.
OPERATING ENGINEERS - HEAVY AND HIGHWAY CONSTRUCTION
Class 1. Craft Foreman; Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines; ABG Paver; Backhoes with Caisson attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted): Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Hammerhead, Linden, Peco & Machines of a like nature; Crete Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dowell machine with Air Compressor; Dredges; Field Mechanic-Welder; Formless Curb and Gutter Machine; Gradall and Machines of a like nature; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Mounted; Hoists, One, Two and Three Drum; Hydraulic Backhoes; Backhoes with shear attachments; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Roto Mill Grinder; Slip-Form Paver; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Trenching Machine; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole; Drills (Tunnel Shaft); Underground Boring and/or Mining Machines; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (less than 1 cu. yd. Backhoe Bucket or over or with

attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.; Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Greaser Engineer; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; All Locomotives, Dinky; Pump Cretes; Squeeze Cretes-Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotory Snow Plows; Rototiller, Seaman, etc., self-propelled; Scoops - Tractor Drawn; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper; Scraper - Prime Mover in Tandem (Regardless of Size); Tank Car Heater; Tractors, Push, Pulling Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

Class 3. Boilers; Brooms, All Power Propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer (Two Bag and Over); Conveyor, Portable; Farm-Type Tractors Used for Mowing, Seeding, etc.; Fireman on Boilers; Forklift Trucks; Grouting Machine; Hoists, Automatic; Hoists, All Elevators; Hoists, Tugger Single Drum; Jeep Diggers; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete Power Driven; Pug Mills; Rollers, other than asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with "A" Frame; Work Boats; Tamper - Form-Motor Driven.

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Class 5. Bobcats (all); Brick Forklifts; Oilers.

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LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape

plantsman and  landscape laborer is covered by the existing classification of laborer.  The work performed by landscape operators (regardless of equipment used or its size) is  covered by the classifications of operating engineer.  The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the  classifications of truck driver.

# Mchenry County Prevailing Wage for December 2007

| Trade Name | RG | TYP | C | Base | FRMAN | *M-F>8 | OSA | OSH | H/W | Pensn | Vac | Trng |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ASBESTOS ABT-GEN | | ALL | | 33.150 | 33.650 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| ASBESTOS ABT-MEC | | BLD | | 23.300 | 24.800 | 1.5 | 1.5 | 2.0 | 7.860 | 4.910 | 0.000 | 0.000 |
| BOILERMAKER | | BLD | | 38.540 | 42.000 | 2.0 | 2.0 | 2.0 | 6.720 | 7.440 | 0.000 | 0.300 |
| BRICK MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| CARPENTER | | ALL | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.920 | 0.000 | 0.490 |
| CEMENT MASON | | ALL | | 37.300 | 39.300 | 2.0 | 1.5 | 2.0 | 7.000 | 9.510 | 0.000 | 0.150 |
| CERAMIC TILE FNSHER | | BLD | | 30.150 | 0.000 | 1.5 | 1.5 | 2.0 | 5.850 | 6.600 | 0.000 | 0.340 |
| COMMUNICATION TECH | | BLD | | 29.960 | 31.760 | 1.5 | 1.5 | 2.0 | 5.842 | 6.290 | 0.000 | 0.375 |
| ELECTRIC PWR EQMT OP | | ALL | | 29.180 | 37.490 | 1.5 | 1.5 | 2.0 | 4.750 | 8.180 | 0.000 | 0.220 |
| ELECTRIC PWR GRNDMAN | | ALL | | 22.610 | 37.490 | 1.5 | 1.5 | 2.0 | 4.750 | 6.330 | 0.000 | 0.170 |
| ELECTRIC PWR LINEMAN | | ALL | | 34.710 | 37.490 | 1.5 | 1.5 | 2.0 | 4.750 | 9.720 | 0.000 | 0.260 |
| ELECTRIC PWR TRK DRV | | ALL | | 23.350 | 37.490 | 1.5 | 1.5 | 2.0 | 4.750 | 6.540 | 0.000 | 0.180 |
| ELECTRICIAN | | ALL | | 40.470 | 44.510 | 1.5 | 1.5 | 2.0 | 9.920 | 9.300 | 0.000 | 0.500 |
| ELEVATOR CONSTRUCTOR | | BLD | | 42.045 | 47.300 | 2.0 | 2.0 | 2.0 | 8.275 | 6.060 | 2.520 | 0.550 |
| FENCE ERECTOR | E | ALL | | 28.640 | 30.140 | 1.5 | 1.5 | 2.0 | 7.750 | 5.970 | 0.000 | 0.350 |
| FENCE ERECTOR | S | ALL | | 38.120 | 40.030 | 2.0 | 2.0 | 2.0 | 8.140 | 14.49 | 0.000 | 0.230 |
| GLAZIER | | BLD | | 33.000 | 34.500 | 1.5 | 2.0 | 2.0 | 6.740 | 10.15 | 0.000 | 0.600 |
| HT/FROST INSULATOR | | BLD | | 33.300 | 35.050 | 1.5 | 1.5 | 2.0 | 7.860 | 8.610 | 0.000 | 0.310 |
| IRON WORKER | E | ALL | | 39.250 | 41.250 | 2.0 | 2.0 | 2.0 | 9.950 | 12.74 | 0.000 | 0.300 |
| IRON WORKER | S | ALL | | 38.120 | 40.030 | 2.0 | 2.0 | 2.0 | 8.140 | 14.49 | 0.000 | 0.230 |
| IRON WORKER | W | ALL | | 31.190 | 32.790 | 2.0 | 2.0 | 2.0 | 7.200 | 16.97 | 0.000 | 1.200 |
| LABORER | | ALL | | 33.150 | 33.900 | 1.5 | 1.5 | 2.0 | 8.050 | 5.600 | 0.000 | 0.220 |
| LATHER | | BLD | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.920 | 0.000 | 0.490 |
| MACHINIST | | BLD | | 38.390 | 40.390 | 2.0 | 2.0 | 2.0 | 4.880 | 6.550 | 2.650 | 0.000 |
| MARBLE FINISHERS | | ALL | | 27.680 | 0.000 | 1.5 | 1.5 | 2.0 | 7.520 | 8.770 | 0.000 | 0.440 |
| MARBLE MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| MATERIAL TESTER I | | ALL | | 23.150 | 0.000 | 1.5 | 1.5 | 2.0 | 8.050 | 5.600 | 0.000 | 0.220 |
| MATERIALS TESTER II | | ALL | | 28.150 | 0.000 | 1.5 | 1.5 | 2.0 | 8.050 | 5.600 | 0.000 | 0.220 |
| MILLWRIGHT | | ALL | | 36.520 | 38.520 | 1.5 | 1.5 | 2.0 | 7.960 | 5.920 | 0.000 | 0.490 |
| OPERATING ENGINEER | | BLD | 1 | 41.550 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 2 | 40.250 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 3 | 37.700 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 4 | 35.950 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 1 | 39.750 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 2 | 39.200 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 3 | 37.150 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 4 | 35.750 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 5 | 34.550 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| ORNAMNTL IRON WORKER | E | ALL | | 37.350 | 39.600 | 2.0 | 2.0 | 2.0 | 7.750 | 11.58 | 0.000 | 0.500 |
| ORNAMNTL IRON WORKER | S | ALL | | 38.120 | 40.030 | 2.0 | 2.0 | 2.0 | 8.140 | 14.49 | 0.000 | 0.230 |
| PAINTER | | ALL | | 35.330 | 36.330 | 1.5 | 1.5 | 1.5 | 6.400 | 6.500 | 0.000 | 0.500 |
| PAINTER SIGNS | | BLD | | 28.970 | 32.520 | 1.5 | 1.5 | 1.5 | 2.600 | 2.310 | 0.000 | 0.000 |
| PILEDRIVER | | ALL | | 37.770 | 39.770 | 1.5 | 1.5 | 2.0 | 8.960 | 6.920 | 0.000 | 0.490 |
| PIPEFITTER | | BLD | | 40.000 | 42.000 | 1.5 | 1.5 | 2.0 | 8.660 | 7.550 | 0.000 | 1.120 |
| PLASTERER | | BLD | | 36.100 | 38.270 | 1.5 | 1.5 | 2.0 | 7.000 | 7.740 | 0.000 | 0.400 |
| PLUMBER | | BLD | | 39.500 | 41.500 | 1.5 | 1.5 | 2.0 | 9.040 | 8.250 | 0.000 | 0.400 |
| ROOFER | | BLD | | 35.000 | 37.000 | 1.5 | 1.5 | 2.0 | 6.460 | 3.310 | 0.000 | 0.330 |
| SHEETMETAL WORKER | | BLD | | 38.210 | 40.210 | 1.5 | 1.5 | 2.0 | 6.900 | 8.870 | 0.000 | 0.640 |
| SIGN HANGER | | BLD | | 26.070 | 27.570 | 1.5 | 1.5 | 2.0 | 3.800 | 3.550 | 0.000 | 0.000 |
| SPRINKLER FITTER | | BLD | | 40.500 | 42.500 | 1.5 | 1.5 | 2.0 | 8.500 | 6.850 | 0.000 | 0.500 |
| STEEL ERECTOR | E | ALL | | 36.250 | 37.750 | 2.0 | 2.0 | 2.0 | 8.970 | 10.77 | 0.000 | 0.300 |
| STEEL ERECTOR | S | ALL | | 38.120 | 40.030 | 2.0 | 2.0 | 2.0 | 8.140 | 14.49 | 0.000 | 0.230 |
| STONE MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| TERRAZZO FINISHER | | BLD | | 31.810 | 0.000 | 1.5 | 1.5 | 2.0 | 5.850 | 9.200 | 0.000 | 0.280 |
| TERRAZZO MASON | | BLD | | 35.390 | 38.390 | 1.5 | 1.5 | 2.0 | 5.850 | 10.05 | 0.000 | 0.320 |
| TILE MASON | | BLD | | 36.630 | 40.630 | 1.5 | 1.5 | 2.0 | 5.850 | 7.850 | 0.000 | 0.480 |
| TRAFFIC SAFETY WRKR | | HWY | | 24.300 | 25.900 | 1.5 | 1.5 | 2.0 | 3.780 | 1.875 | 0.000 | 0.000 |
| TRUCK DRIVER | | ALL | 1 | 30.700 | 31.250 | 1.5 | 1.5 | 2.0 | 5.450 | 5.250 | 0.000 | 0.150 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TRUCK DRIVER | ALL | 2 | 30.850 | 31.250 | 1.5 | 1.5 | 2.0 | 5.450 | 5.250 | 0.000 | 0.150 |
| TRUCK DRIVER | ALL | 3 | 31.050 | 31.250 | 1.5 | 1.5 | 2.0 | 5.450 | 5.250 | 0.000 | 0.150 |
| TRUCK DRIVER | ALL | 4 | 31.250 | 31.250 | 1.5 | 1.5 | 2.0 | 5.450 | 5.250 | 0.000 | 0.150 |
| TUCKPOINTER | BLD | | 36.900 | 37.900 | 1.5 | 1.5 | 2.0 | 5.910 | 8.350 | 0.000 | 0.400 |

Legend:

M-F>8 (Overtime is required for any hour greater than 8 worked each day, Monday through Friday.

OSA (Overtime is required for every hour worked on Saturday)

OSH (Overtime is required for every hour worked on Sunday and Holidays)

H/W (Health & Welfare Insurance)

Pensn (Pension)

Vac (Vacation)

Trng (Training)

# Explanations

MCHENRY COUNTY

FENCE ERECTOR (EAST) - That part of the county East and Northeast of a line following Route 31 North to Route 14, northwest to Route 47 north to the Wisconsin State Line.

IRONWORKERS (EAST) - That part of the county East of Rts. 47 and 14.

IRONWORKERS (SOUTH) - That part of the county South of Route 14 and East of Route 47.

IRONWORKERS (WEST) - That part of the county West of Route 47.

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial/Decoration Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration such as the day after Thanksgiving for Veterans Day. If in doubt, please check with IDOL.

EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.

ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed products; all composition materials, granite tiles, warning detectable tiles, cement tiles, epoxy composite materials, pavers, glass, mosaics, fiberglass, and all substitute materials, for tile made in tile-like units; all mixtures in tile like form of cement, metals, and other materials that are for and intended for use as a finished floor surface, stair treads, promenade roofs, walks, walls, ceilings, swimming pools, and all other places where tile is to form a finished interior or exterior. The mixing of all setting mortars including but not limited to thin-set mortars, epoxies, wall mud, and any other sand and cement mixtures or adhesives when used in the preparation, installation, repair, or maintenance of tile and/or similar materials. The handling and unloading of all sand, cement, lime, tile, fixtures, equipment, adhesives, or any other materials to be used in the preparation, installation, repair, or maintenance of tile and/or similar materials. Ceramic Tile Finishers shall fill all joints and voids regardless of method on all tile work, particularly and especially after installation of said tile work. Application of any and all protective coverings to all types of tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

COMMUNICATIONS TECHNICIAN

Construction, installation, maintenance and removal of telecommunication facilities (voice, sound, data and video), telephone, security systems, fire alarm systems that are a component of a multiplex system and share a common cable, and data inside wire, interconnect, terminal equipment, central offices, PABX and equipment, micro waves, V-SAT, bypass, CATV, WAN (wide area network), LAN (local area networks), and ISDN (integrated system digital network), pulling of wire in raceways, but not the installation of raceways.

MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all rigging for heavy work, the handling of all mateiral that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters cutting, use of tub saw or any other saw needed for preparation of material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installatin of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and experiors and customarily known as stone in the trade), carrara,

sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior and experior which sare installed in a similar manner.

MATERIAL TESTER I: Hand coring and drilling for testing of materials; field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel, fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

TRAFFIC SAFETY - work associated with barricades, horses and drums used to reduce lane usage on highway work, the installation and removal of temporary lane markings, and the installation and removal of temporary road signs.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION
Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; Teamsters; Unskilled dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yeards; Ready-mix Plant Hopper Operator, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnatrailers or turnapulls when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, 1-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch trucks, 3 axles or more; Mechanic--Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

OPERATING ENGINEERS - BUILDING

Class 1. Mechanic; Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson attachment; Batch Plant; Benoto; Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver; Concrete Placer; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader,

Elevating; Grouting Machines; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, one, two and three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes; Squeeze Cretes-screw Type Pumps; Raised and Blind Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-form Paver; Straddle Buggies; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Greaser Engineer; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, inside Freight Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill (self-propelled); Rock Drill (truck mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination - Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators - (Rheostat Manual Controlled); Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 small Electric Drill Winches; Bobcat (up to and including 3/4 cu. yd.).

Class 4. Bobcats and/or other Skid Steer Loaders; Oilers; and Brick Forklift.

OPERATING ENGINEERS - HEAVY AND HIGHWAY CONSTRUCTION

Class 1. Craft Foreman; Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines; ABG Paver; Backhoes with Caisson attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted): Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Hammerhead, Linden, Peco & Machines of a like nature; Crete Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dowell machine with Air Compressor; Dredges; Field Mechanic-Welder; Formless Curb and Gutter Machine; Gradall and Machines of a like nature; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Mounted; Hoists, One, Two and Three Drum; Hydraulic Backhoes; Backhoes with shear attachments; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Roto Mill Grinder; Slip-Form Paver; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Trenching Machine; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole; Drills (Tunnel Shaft); Underground Boring and/or Mining Machines; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common

Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.; Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Greaser Engineer; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; All Locomotives, Dinky; Pump Cretes; Squeeze Cretes-Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotory Snow Plows; Rototiller, Seaman, etc., self-propelled; Scoops - Tractor Drawn; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper; Scraper - Prime Mover in Tandem (Regardless of Size); Tank Car Heater; Tractors, Push, Pulling Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

Class 3. Boilers; Brooms, All Power Propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer (Two Bag and Over); Conveyor, Portable; Farm-Type Tractors Used for Mowing, Seeding, etc.; Fireman on Boilers; Forklift Trucks; Grouting Machine; Hoists, Automatic; Hoists, All Elevators; Hoists, Tugger Single Drum; Jeep Diggers; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete Power Driven; Pug Mills; Rollers, other than asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with "A" Frame; Work Boats; Tamper - Form-Motor Driven.

Class 4. Air Compressor; Combination - Small Equipment Operator; Directional Boring Machine; Generators; Heaters, Mechanical; Hydraulic Power Unit (Pile Driving, Extracting, or Drilling); Hydro-Blaster; Light Plants, All (1 through 5); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Tractaire; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 5. Bobcats (all); Brick Forklifts; Oilers.

TERRAZZO FINISHER

The handling of sand, cement, marble chips, and all other materials that may be used by the Mosaic Terrazzo Mechanic, and the mixing, grinding, grouting, cleaning and sealing of all Marble, Mosaic, and Terrazzo work, floors, base, stairs, and wainscoting by hand or machine, and in addition, assisting and aiding Marble, Masonic, and Terrazzo Mechanics.

Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 618/993-7271 for wage rates or clarifications.

LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing

classification of laborer.  The work performed by landscape operators (regardless of equipment used or its size) is  covered by the classifications of operating engineer.  The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the  classifications of truck driver.

# Will County Prevailing Wage for December 2007

| Trade Name | RG | TYP | C | Base | FRMAN | *M-F>8 | OSA | OSH | H/W | Pensn | Vac | Trng |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ASBESTOS ABT-GEN | | ALL | | 33.150 | 33.650 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| ASBESTOS ABT-MEC | | BLD | | 23.300 | 24.800 | 1.5 | 1.5 | 2.0 | 7.860 | 4.910 | 0.000 | 0.000 |
| BOILERMAKER | | BLD | | 38.540 | 42.000 | 2.0 | 2.0 | 2.0 | 6.720 | 7.440 | 0.000 | 0.300 |
| BRICK MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| CARPENTER | | ALL | | 37.550 | 41.310 | 1.5 | 1.5 | 2.0 | 7.850 | 10.56 | 0.000 | 0.490 |
| CEMENT MASON | | ALL | | 37.500 | 39.500 | 2.0 | 2.0 | 2.0 | 7.000 | 9.430 | 0.000 | 0.150 |
| CERAMIC TILE FNSHER | | BLD | | 30.150 | 0.000 | 1.5 | 1.5 | 2.0 | 5.850 | 6.600 | 0.000 | 0.340 |
| COMMUNICATION TECH | | BLD | | 31.000 | 32.500 | 1.5 | 1.5 | 2.0 | 8.770 | 8.930 | 0.000 | 0.310 |
| ELECTRIC PWR EQMT OP | | ALL | | 37.300 | 43.450 | 1.5 | 1.5 | 2.0 | 8.310 | 10.77 | 0.000 | 0.280 |
| ELECTRIC PWR GRNDMAN | | ALL | | 29.090 | 43.450 | 1.5 | 1.5 | 2.0 | 6.450 | 8.390 | 0.000 | 0.220 |
| ELECTRIC PWR LINEMAN | | ALL | | 37.300 | 43.450 | 1.5 | 1.5 | 2.0 | 8.310 | 10.77 | 0.000 | 0.280 |
| ELECTRICIAN | | BLD | | 36.500 | 39.790 | 1.5 | 1.5 | 2.0 | 9.170 | 11.84 | 0.000 | 0.370 |
| ELEVATOR CONSTRUCTOR | | BLD | | 42.045 | 47.300 | 2.0 | 2.0 | 2.0 | 8.275 | 6.060 | 2.520 | 0.550 |
| GLAZIER | | BLD | | 33.000 | 34.500 | 1.5 | 2.0 | 2.0 | 6.740 | 10.15 | 0.000 | 0.600 |
| HT/FROST INSULATOR | | BLD | | 33.300 | 35.050 | 1.5 | 1.5 | 2.0 | 7.860 | 8.610 | 0.000 | 0.310 |
| IRON WORKER | | ALL | | 32.000 | 33.000 | 2.0 | 2.0 | 2.0 | 8.040 | 13.92 | 0.000 | 0.550 |
| LABORER | | ALL | | 33.150 | 33.900 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| LATHER | | ALL | | 37.550 | 41.310 | 1.5 | 1.5 | 2.0 | 7.850 | 10.56 | 0.000 | 0.490 |
| MACHINIST | | BLD | | 38.390 | 40.390 | 2.0 | 2.0 | 2.0 | 4.880 | 6.550 | 2.650 | 0.000 |
| MARBLE FINISHERS | | ALL | | 27.680 | 0.000 | 1.5 | 1.5 | 2.0 | 7.520 | 8.770 | 0.000 | 0.440 |
| MARBLE MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| MATERIAL TESTER I | | ALL | | 23.150 | 0.000 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| MATERIALS TESTER II | | ALL | | 28.150 | 0.000 | 1.5 | 1.5 | 2.0 | 7.970 | 5.680 | 0.000 | 0.220 |
| MILLWRIGHT | | ALL | | 37.550 | 41.310 | 1.5 | 1.5 | 2.0 | 7.850 | 10.56 | 0.000 | 0.490 |
| OPERATING ENGINEER | | BLD | 1 | 41.550 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 2 | 40.250 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 3 | 37.700 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | BLD | 4 | 35.950 | 45.550 | 2.0 | 2.0 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | FLT | 1 | 47.250 | 47.250 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.000 |
| OPERATING ENGINEER | | FLT | 2 | 45.750 | 47.250 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.000 |
| OPERATING ENGINEER | | FLT | 3 | 40.700 | 47.250 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.000 |
| OPERATING ENGINEER | | FLT | 4 | 33.850 | 47.250 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.000 |
| OPERATING ENGINEER | | HWY | 1 | 39.750 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 2 | 39.200 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 3 | 37.150 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 4 | 35.750 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| OPERATING ENGINEER | | HWY | 5 | 34.550 | 43.750 | 1.5 | 1.5 | 2.0 | 6.850 | 5.600 | 1.900 | 0.700 |
| PAINTER | | ALL | | 35.400 | 39.820 | 1.5 | 1.5 | 2.0 | 6.550 | 7.400 | 0.000 | 0.340 |
| PAINTER SIGNS | | BLD | | 28.970 | 32.520 | 1.5 | 1.5 | 1.5 | 2.600 | 2.310 | 0.000 | 0.000 |
| PILEDRIVER | | ALL | | 37.550 | 41.310 | 1.5 | 1.5 | 2.0 | 7.850 | 10.56 | 0.000 | 0.490 |
| PIPEFITTER | | BLD | | 37.600 | 39.600 | 1.5 | 1.5 | 2.0 | 8.660 | 6.900 | 0.000 | 0.940 |
| PLASTERER | | BLD | | 36.100 | 38.270 | 1.5 | 1.5 | 2.0 | 7.000 | 7.740 | 0.000 | 0.400 |
| PLUMBER | | BLD | | 40.000 | 42.000 | 1.5 | 1.5 | 2.0 | 8.000 | 8.500 | 0.000 | 0.760 |
| ROOFER | | BLD | | 35.000 | 37.000 | 1.5 | 1.5 | 2.0 | 6.460 | 3.310 | 0.000 | 0.330 |
| SHEETMETAL WORKER | | BLD | | 38.210 | 40.210 | 1.5 | 1.5 | 2.0 | 6.900 | 8.870 | 0.000 | 0.640 |
| SPRINKLER FITTER | | BLD | | 40.500 | 42.500 | 1.5 | 1.5 | 2.0 | 8.500 | 6.850 | 0.000 | 0.500 |
| STONE MASON | | BLD | | 36.430 | 40.070 | 1.5 | 1.5 | 2.0 | 7.700 | 8.770 | 0.000 | 0.440 |
| TERRAZZO FINISHER | | BLD | | 31.810 | 0.000 | 1.5 | 1.5 | 2.0 | 5.850 | 9.200 | 0.000 | 0.280 |
| TERRAZZO MASON | | BLD | | 35.390 | 38.390 | 1.5 | 1.5 | 2.0 | 5.850 | 10.05 | 0.000 | 0.320 |
| TILE MASON | | BLD | | 36.630 | 40.630 | 1.5 | 1.5 | 2.0 | 5.850 | 7.850 | 0.000 | 0.480 |
| TRAFFIC SAFETY WRKR | | HWY | | 24.300 | 25.900 | 1.5 | 1.5 | 2.0 | 3.780 | 1.875 | 0.000 | 0.000 |
| TRUCK DRIVER | | ALL | 1 | 34.200 | 34.750 | 1.5 | 1.5 | 2.0 | 6.000 | 4.075 | 0.000 | 0.250 |
| TRUCK DRIVER | | ALL | 2 | 34.350 | 34.750 | 1.5 | 1.5 | 2.0 | 6.000 | 4.075 | 0.000 | 0.250 |
| TRUCK DRIVER | | ALL | 3 | 34.550 | 34.750 | 1.5 | 1.5 | 2.0 | 6.000 | 4.075 | 0.000 | 0.250 |
| TRUCK DRIVER | | ALL | 4 | 34.750 | 34.750 | 1.5 | 1.5 | 2.0 | 6.000 | 4.075 | 0.000 | 0.250 |
| TUCKPOINTER | | BLD | | 36.900 | 37.900 | 1.5 | 1.5 | 2.0 | 5.910 | 8.350 | 0.000 | 0.400 |

Legend:

M-F>8 (Overtime is required for any hour greater than 8 worked each day, Monday through Friday.

OSA (Overtime is required for every hour worked on Saturday)

OSH (Overtime is required for every hour worked on Sunday and Holidays)

H/W (Health & Welfare Insurance)

Pensn (Pension)

Vac (Vacation)

Trng (Training)

# Explanations

WILL COUNTY

IRONWORKERS (SOUTH) - That part of the county South of a diagonal line through Braidwood and Goodenow.

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial/Decoration Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration such as the day after Thanksgiving for Veterans Day. If in doubt, please check with IDOL.

EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.

ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed products; all composition materials, granite tiles, warning detectable tiles, cement tiles, epoxy composite materials, pavers, glass, mosaics, fiberglass, and all substitute materials, for tile made in tile-like units; all mixtures in tile like form of cement, metals, and other materials that are for and intended for use as a finished floor surface, stair treads, promenade roofs, walks, walls, ceilings, swimming pools, and all other places where tile is to form a finished interior or exterior. The mixing of all setting mortars including but not limited to thin-set mortars, epoxies, wall mud, and any other sand and cement mixtures or adhesives when used in the preparation,

installation, repair, or maintenance of tile and/or similar materials. The handling and unloading of all sand, cement, lime, tile, fixtures, equipment, adhesives, or any other materials to be used in the preparation, installation, repair, or maintenance of tile and/or similar materials. Ceramic Tile Finishers shall fill all joints and voids regardless of method on all tile work, particularly and especially after installation of said tile work. Application of any and all protective coverings to all types of tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

COMMUNICATIONS TECHNICIAN

Installation, operation, inspection, maintenance, repair and service of radio, television, recording, voice, sound and vision production and reproduction, telephone and telephone interconnect, facsimile, equipment and appliances used for domestic, commercial, educational and entertainment purposes, pulling of wire through conduit but not the installation of conduit.

MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all rigging for heavy work, the handling of all mateiral that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters cutting, use of tub saw or any other saw needed for preparation of material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installatin of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and experiors and customarily known as stone in the trade), carrara, sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior and experior which sare installed in a similar manner.

MATERIAL TESTER I: Hand coring and drilling for testing of materials; field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel, fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

TRAFFIC SAFETY - work associated with barricades, horses and drums used to reduce lane usage on highway work, the installation and removal of temporary lane markings, and the installation and removal of temporary road signs.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION

Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; Teamsters; Unskilled dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yeards; Ready-mix Plant Hopper Operator, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnatrailers or turnapulls when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, 1-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch trucks, 3 axles or more; Mechanic--Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

OPERATING ENGINEERS - BUILDING

Class 1. Mechanic; Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson attachment; Batch Plant; Benoto; Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver; Concrete Placer; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader, Elevating; Grouting Machines; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, one, two and three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes; Squeeze Cretes-screw Type Pumps; Raised and Blind Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-form Paver; Straddle Buggies; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklist Trucks; Greaser Engineer; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, inside Freight Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill (self-propelled); Rock Drill (truck mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller;

Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination - Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators - (Rheostat Manual Controlled); Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 small Electric Drill Winches; Bobcat (up to and including 3/4 cu. yd.).

Class 4. Bobcats and/or other Skid Steer Loaders; Oilers; and Brick Forklift.

OPERATING ENGINEERS - FLOATING

Class 1. Craft foreman (Master Mechanic), diver/wet tender, engineer (hydraulic dredge).

Class 2. Crane/backhoe operator, mechanic/welder, assistant engineer (hydraulic dredge), leverman (hydraulic dredge), and diver tender.

Class 3. Deck equipment operator (machineryman), maintenance of crane (over 50 ton capacity) or backhoe (96,000 pounds or more), tug/launch operator, loader, dozer and like equipment on barge, breakwater wall, slip/dock or scow, deck machinery, etc.

Class 4. Deck equipment operator (machineryman/fireman), (4 equipment units or more) and crane maintenance 50 ton capacity and under or backhoe weighing 96,000 pounds or less, assistant tug operator.

OPERATING ENGINEERS - HEAVY AND HIGHWAY CONSTRUCTION
Class 1. Craft Foreman; Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines; ABG Paver; Backhoes with Caisson attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted): Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Hammerhead, Linden, Peco & Machines of a like nature; Crete Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dowell machine with Air Compressor; Dredges; Field Mechanic-Welder; Formless Curb and Gutter Machine; Gradall and Machines of a like nature; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Mounted; Hoists, One, Two and Three Drum; Hydraulic Backhoes; Backhoes with shear attachments; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Roto Mill Grinder; Slip-Form Paver; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Trenching Machine; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole; Drills (Tunnel Shaft); Underground Boring and/or Mining Machines; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu.

ft.; Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Greaser Engineer; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; All Locomotives, Dinky; Pump Cretes; Squeeze Cretes-Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotory Snow Plows; Rototiller, Seaman, etc., self-propelled; Scoops - Tractor Drawn; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper; Scraper - Prime Mover in Tandem (Regardless of Size); Tank Car Heater; Tractors, Push, Pulling Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

Class 3. Boilers; Brooms, All Power Propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer (Two Bag and Over); Conveyor, Portable; Farm-Type Tractors Used for Mowing, Seeding, etc.; Fireman on Boilers; Forklift Trucks; Grouting Machine; Hoists, Automatic; Hoists, All Elevators; Hoists, Tugger Single Drum; Jeep Diggers; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete Power Driven; Pug Mills; Rollers, other than asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with "A" Frame; Work Boats; Tamper - Form-Motor Driven.

Class 4. Air Compressor; Combination - Small Equipment Operator; Directional Boring Machine; Generators; Heaters, Mechanical; Hydraulic Power Unit (Pile Driving, Extracting, or Drilling); Hydro-Blaster; Light Plants, All (1 through 5); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Tractaire; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 5. Bobcats (all); Brick Forklifts; Oilers.

TERRAZZO FINISHER

The handling of sand, cement, marble chips, and all other materials that may be used by the Mosaic Terrazzo Mechanic, and the mixing, grinding, grouting, cleaning and sealing of all Marble, Mosaic, and Terrazzo work, floors, base, stairs, and wainscoting by hand or machine, and in addition, assisting and aiding Marble, Masonic, and Terrazzo Mechanics.

Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 618/993-7271 for wage rates or clarifications.

LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the

classifications of operating engineer.  The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the  classifications of truck driver.