

**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 than 4:30 p.m. prevailing time twenty-one days prior to the letting of interest. This pre-qualification requirement applies to first time contractors, contractors renewing expired ratings, contractors maintaining continuous pre-qualification or contractors requesting revised ratings. To be eligible to bid, existing pre-qualification ratings must be effective through the date of letting.

**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](mailto: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](mailto: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?**

<b>Questions Regarding</b>	<b>Call</b>
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.

# 116

RETURN WITH BID

Proposal Submitted By
Name
Address
City

Letting August 3, 2007

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. 66712  
IROQUOIS County  
Section (2SB-FAGH)I  
District 3 Construction Funds  
Route FAP 332

PLEASE MARK THE APPROPRIATE BOX BELOW:

- A Bid Bond is included.
- A Cashier's Check or a Certified Check is included.

Prepared by

S

Checked by

(Printed by authority of the State of Illinois)

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## 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

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Questions Regarding	Call
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Preparation and submittal of bids	217/782-7806
Mailing of CD-ROMS	217/782-7806

RETURN WITH BID



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. 66712  
IROQUOIS County  
Section (2SB-FAGH)  
Route FAP 332  
District 3 Construction Funds**

**This project consists of the removal and replacement of the pumping systems located on Illinois Route 1 on the north edge of Milford at the CSX Railroad Viaduct.**

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:

<u>Amount of Bid</u>	<u>Proposal Guaranty</u>	<u>Amount of Bid</u>	<u>Proposal Guaranty</u>
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)

**RETURN WITH BID**

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 - 66712

State Job # - C-93-050-07  
 PPS NBR - 0-00858-3009  
 County Name - IROQUOIS- -  
 Code - 75 - -  
 District - 3 - -  
 Section Number - (2SB-FAGH)I

Project Number

Route  
 FAP 332

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
X0301578	REM EXIST EQUIP	L SUM	1.000				
X0323880	COMP SPARE M-PUMP ASM	L SUM	1.000				
X0324582	PLUMB EQ, ACCESS & RS	L SUM	1.000				
X0335700	P.S. GENERAL WORK	L SUM	1.000				
X0393750	HEAT/VENT/AIR WK COMP	L SUM	1.000				
X0783300	P.S. ELECTRICAL WORK	L SUM	1.000				
67100100	MOBILIZATION	L SUM	1.000				



**CONTRACT NUMBER**

**66712**

**THIS IS THE TOTAL BID**

**\$ \_\_\_\_\_**

**NOTES:**

- 1. Each PAY ITEM should have a UNIT PRICE and a TOTAL PRICE.**
- 2. The UNIT PRICE shall govern if no TOTAL PRICE is shown or if there is a discrepancy between the product of the UNIT PRICE multiplied by the QUANTITY.**
- 3. If a UNIT PRICE is omitted, the TOTAL PRICE will be divided by the QUANTITY in order to establish a UNIT PRICE.**

## 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 \$150,700.00. Sixty percent of the salary is \$90,420.00.

## RETURN WITH BID

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.

## RETURN WITH BID

(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.**

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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.

**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 sign the following certification statement indicating that the information previously submitted by the bidder is, as of the date of signature, current and accurate. The Certification must be signed and dated by a person who is authorized to execute contracts for the bidding company. Before signing this certification, the bidder should carefully review its prior submissions to ensure the Certification is correct. If the Bidder signs 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)

\_\_\_\_\_  
Name of Authorized Representative (type or print)

\_\_\_\_\_  
Title of Authorized Representative (type or print)

\_\_\_\_\_  
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 \$90,420.00? YES \_\_\_ NO \_\_\_
3. Does anyone in your organization receive more than \$90,420.00 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 \$90,420.00? 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. It must be signed by an individual who is authorized to execute contracts for the bidding entity. *Note: Signing the NOT APPLICABLE STATEMENT on Form A does not allow the bidder to ignore Form B. Form B must be completed, signed 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 signature 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:

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**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 \$90,420.00 (60% of the Governor's salary as of 7/1/01). **(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 \$90,420.00, (60% of the Governor's salary as of 7/1/01) provide the name the State agency for which you are employed and your annual salary. \_\_\_\_\_

**RETURN WITH BID/OFFER**

- 3. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds \$90,420.00, (60% of the Governor's salary as of 7/1/01) 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 \$90,420.00, (60% of the Governor's salary as of 7/1/01) 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 \_\_\_

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(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 \$90,420.00, (60 % of the Governor's salary as of 7/1/01) 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 \$90,420.00, (60% of the salary of the Governor as of 7/1/01) 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 \$90,420.00, (60% of the Governor's salary as of 7/1/01) 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 \_\_\_

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(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 \_\_\_

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(d) Relationship to anyone holding elective office currently or in the previous 2 years; spouse, father, mother, son, or daughter.

Yes \_\_\_ No \_\_\_

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(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 \_\_\_

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(f) Relationship to anyone holding appointive office currently or in the previous 2 years; spouse, father, mother, son, or daughter.

Yes \_\_\_ No \_\_\_

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(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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**RETURN WITH BID/OFFER**

(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: \_\_\_\_\_  
Name of Authorized Representative (type or print)

Completed by: \_\_\_\_\_  
Title of Authorized Representative (type or print)

Completed by: \_\_\_\_\_ Date \_\_\_\_\_  
Signature of Individual or Authorized Representative

**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.**

\_\_\_\_\_  
Name of Authorized Representative (type or print)

\_\_\_\_\_  
Title of Authorized Representative (type or print)

\_\_\_\_\_  
Signature of Authorized Representative Date \_\_\_\_\_

RETURN WITH BID/OFFER

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 SIGNED**

_____	
Name of Authorized Representative (type or print)	
_____	
Title of Authorized Representative (type or print)	
_____	_____
Signature of Authorized Representative	Date

## **RETURN WITH BID**

### **SPECIAL NOTICE TO CONTRACTORS**

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

#### **CONSTRUCTION EMPLOYEE UTILIZATION PROJECTION**

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

RETURN WITH BID



**Contract No. 66712**  
**IROQUOIS County**  
**Section (2SB-FAGH)**  
**Route FAP 332**  
**District 3 Construction Funds**

**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			
JOB CATEGORIES	TOTAL EMPLOYEES		MINORITY EMPLOYEES						TRAINEES				TOTAL EMPLOYEES		MINORITY EMPLOYEES	
			BLACK		HISPANIC		*OTHER MINOR.		APPRENTICES		ON THE JOB TRAINEES					
	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								

FOR DEPARTMENT USE ONLY

\*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**

**RETURN WITH BID**

**Contract No. 66712  
IROQUOIS County  
Section (2SB-FAGH)  
Route FAP 332  
District 3 Construction Funds**

**PART II. WORKFORCE PROJECTION - continued**

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

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

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

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

**PART III. AFFIRMATIVE ACTION PLAN**

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

B. The undersigned bidder understands and agrees that the minority and female employee utilization projection submitted herein, and the goals and timetable included under an Affirmative Action Plan if required, are deemed to be part of the contract specifications.

Company \_\_\_\_\_ Telephone Number \_\_\_\_\_  
\_\_\_\_\_  
Address \_\_\_\_\_

**NOTICE REGARDING SIGNATURE**

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

**RETURN WITH BID**

**Contract No. 66712  
IROQUOIS County  
Section (2SB-FAGH)  
Route FAP 332  
District 3 Construction Funds**

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

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

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 SURETY
(Company Name) (Company Name)
By: (Signature & Title) 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



## 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

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## 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. 66712  
IROQUOIS County  
Section (2SB-FAGH)  
Route FAP 332  
District 3 Construction Funds**



**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., August 3, 2007. 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. 66712  
IROQUOIS County  
Section (2SB-FAGH)  
Route FAP 332  
District 3 Construction Funds**

**This project consists of the removal and replacement of the pumping systems located on Illinois Route 1 on the north edge of Milford at the CSX Railroad Viaduct.**

**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, Acting Secretary

BD 351 (Rev. 01/2003)

INDEX  
FOR  
SUPPLEMENTAL SPECIFICATIONS  
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2007

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

SUPPLEMENTAL SPECIFICATIONS

Std. Spec. Sec.

Page No.

No Supplemental Specifications this year.

RECURRING SPECIAL PROVISIONS

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

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## STATE OF ILLINOIS

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### SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2007, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," and the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of FAP 332 (IL 1), Section (2SB-FAGH)I, in Iroquois County, and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

Contract #66712

### LOCATION OF PROJECT

This project is located on FAP Route 332 (IL Route 1) on the north edge of Milford in Iroquois County.

This work is associated with the "Milford Pump Station" at the CSX Railroad Viaduct (S.N. 038-0024).

### DESCRIPTION OF PROJECT

This work consists of all labor, materials and equipment necessary to complete the work as described in the following items.

1. Removal and replacement of existing pump motors and associated electrical located in the motor house.
2. Removal and replacement of all the electrical devices at the facility.
3. Removal and replacement of existing pumps and all suction and discharge piping associated with the pumps.
4. Removal and replacement of the electrical service.
5. Removal and replacement of existing dry pit sump pump and associated discharge piping.
6. Removal and replacement of the existing float controls and associated piping.
7. Removal and replacement of areaway drains.
8. Removal and replacement of the existing entrance door, including all frame and trim work.
9. Cleaning and painting the exterior (walls), interior, (walls, ceiling and floor) of the Motor House.



Drawings of the existing building and equipment layout are included for informational purposes only and may or may not depict actual installation. The Contractor shall make an on-sight inspection to verify actual dimensions and equipment installed prior to the removal of any equipment.

### **KEEPING ROADWAY CLEAR OF WATER**

The Contractor shall conduct his work so that one (1) main pump is in service at all times during construction operations or in lieu of this requirement a portable pump must be provided at the jobsite and operational twenty four (24) hours per day during construction operations.

In addition the existing dry pit sump pump as indicated on plan details shall remain in operation at all times during construction operations.

The Contractor shall be responsible for maintaining operation of the station 24 hours per day upon commencement of construction and shall upon request, receive a key to the station.

All work associated with this requirement will not be paid for separately but will be included in the cost of the related construction items.

### **REMOVE EXISTING EQUIPMENT**

Description. This work will consist of the removal of existing equipment located in the motor room, wet and dry pit areas as shown on plan details. Any concrete repair work required in the removal of existing equipment will not be paid for separately.

All removed equipment or materials shall become the property of the Contractor and shall be disposed of off the right of way.

Removed equipment will include the following;

1. All the electrical items at the pump station including but not limited to electrical enclosures, lights, receptacle, switches, conduit and raceway, conductors, service entrance equipment and conductors. The only exception shall be the RACO "Chatterbox" remote alarm.
2. Motor(s),
3. Motor shafts including all shaft bearings assemblies.
4. Pump(s), and all related suction and discharge piping associated with the pump system including gate valve(s).
5. Sump pump(s), and all discharge piping associated with the sump pump system.
6. Float control(s), and all related piping associated with the float controls.
7. Drain pipes associated with the areaway(s).

Existing discharge piping cast through the concrete walls shall remain in place.

Method of Measurement. This work will be measured for payment as lump sum.

Basis of Payment. This work will be paid for at the contract unit price per lump sum for REMOVE EXISTING EQUIPMENT, which price will be payment in full to remove the equipment as stated and the satisfactory disposal off the right of way plus temporary work required to complete this work.

## **PLUMBING EQUIPMENT, ACCESSORIES AND RELATED SYSTEMS**

Description. This work shall consist of furnishing and installing pumping equipment with all accessories including piping, fittings, brackets, fasteners for two complete pumping systems and all related systems. In addition, field testing of all pumping systems and related systems shall be required.

Refer to Section 11310 - Submersible Pumps for further requirements.

Installation of plumbing equipment will consist of the following:

Furnish and install dry pit submersible solids handling wastewater pumps with 10" suction and 10" diameter discharge for two pump systems.

Furnish and install one dry pit sump pump.

Furnish and install 10" gate valves for two pump systems.

Installation of accessories will consist of the following:

Furnishing and installing 10" diameter cast iron steel pipe and fittings for suction and discharge lines for two pump systems.

Furnishing and installing 2" diameter cast iron steel pipe and fittings for discharge line for dry pit sump pump.

Furnishing and installing 8" and 2" diameter cast iron steel pipe and fittings for float control for two pump systems.

Installation of related systems will consist of the following:

Furnishing and installing 2" diameter cast iron steel pipe and fittings for two areaway drains.

Field testing of pump systems, related accessories, and alarm systems:

Field testing shall include testing of the operation of the installed pumps and related systems including field testing of the existing "Chatter Box" alarm system. The Contractor shall coordinate with the Engineer and a service representative of the alarm system manufacturer to ensure proper operation and compatibility of the new pump systems with the existing alarm system.

Contact Information of Service Representative:

RACO Remote Alarms & Controls  
RACO Manufacturing & Engineering Co.  
1400 62<sup>nd</sup> Street  
Emeryville, CA 94608  
Phone: (800) 722-6999  
Phone: (510) 658-6713  
Fax: (510) 658-3153

Costs incurred due to the service representative technical assistance or presence at the job site shall not be paid for separately, but shall be included in the cost of the related plumbing and accessory installations.

Installation of Pumps

Pumps shall be set in strict accordance with the manufacturer's instruction and shall be performed in a workman like manner. All equipment shall be carefully set and aligned so that it operates without undue vibrations and stresses.

Piping and valves shall be supported independently of the pump so that no strain will be imparted to the pump members. The setting, alignment and operation of the pumps shall be supervised and approved by the pump manufacturer's representative, prior to station start-up.

A certification of compliance shall be furnished by the manufacturer's representative prior to final inspection.

New Pipes and Fittings

New pipes and fittings will be of standard cast iron strength steel pipe of welding grade, and shall be in accordance with ASTM Designation A53 for welded and seamless steel pipe. Manufacturer's Certification shall be submitted and the pipe and fittings shall be visibly inspected by the Engineer prior to installation.

Any welding shall be done by a welder certified under the ASME Code for unfired pressure vessels. All welds shall be in accordance with AWWA Specifications No. C-206 for field welding of steel water pipe joints. All welded joints will withstand generated water pressure without leakage.

Flanges will be free from leaks and gasketed with 1/16" thickness material across the entire flange face.

Gate Valves

This work shall consist of the removal and replacement of the existing gate valves associated with the pumping system.

The Contractor shall exercise care in removing the gate valves so that damage does not occur to the valves. The east valve shall be removed and become the property of the Contractor. The west valve shall be removed and delivered to the Department's Watseka Maintenance Yard.

The valves shall be suitable for ordinary waterworks service, intended to be installed in a normal position on buried pipe lines for water distribution systems.

The minimum requirements for all gate valves shall, in design, shell wall thickness, material and workmanship, conform to the standards of the latest AWWA C500 and AWWA C509 for resilient-seated gate valves. All materials used in the manufacture of waterworks gate valves shall conform to the AWWA standards designed for each material listed.

Manufacture and Marking: The gate valves shall be standard pattern and shall have the name or mark of the manufacturer, size and working pressure plainly cast in raised letters on the valve body.

Type and Mounting: The valve bodies shall be cast iron, mounted with approved non-corrosive metals. All wearing surfaces shall be bronze or other approved non-corrosive material and there shall be no moving bearing or contact surfaces of iron in contact with iron. Contact surfaces shall be machined and finished in the best workmanlike manner, and all wearing surfaces shall be easily renewable. All gate valves shall be two-faced, non-rising stem, double disc, with parallel seats of bronze or other approved wedging devices placed between them. The stem shall be of high tensile strength bronze or other approved non-corrosive metal. All nonferrous bushing shall be of substantial thickness tightly fitted and pressed into machined seats. All valves shall open by turning to the left counter-clockwise, unless otherwise specified. Consideration shall be given to types of bronze used where high galvanic waters (high pH or specific conductance) are present. See AWWA C500, Paragraph 2.2.3.4 and AWWA C509 paragraph 2.2.4.4.

End Connections: End connections of gate valves shall consist of one of the following types as provided in the Special Provisions or shown on the Plans.

- A. Mechanical Joints
- B. Push-On (rubber gasket) Joints
- C. Bell End Joints, lead (only where required for special conditions)
- D. Flange Joints
- E. Screwed or Threaded Joints

Gate Valve Stem Seals: All gate valves of size through twelve (12) inches shall be furnished with three (3) pressure actuated O-ring stem seals, with one (1) O-ring below the stem thrust collar and bearing surfaces and two (2) O-ring above. The area between the O-rings shall be filled with a lubricant to give continuous lubrication to the stem collar and bearing surfaces so as to provide long-term ease of operation.

Wrench Nuts: Wrench nuts shall be made of cast iron and shall be one and fifteen-sixteenths (1 15/16) inches square at the top, two (2) inches square at the base, one and three-fourths (1 ¾) inches high, unless otherwise designated in the Special Provisions. Nuts shall have a flanged

base upon which shall be cast an arrow at least two (2) inches long showing the direction of opening. The word "Open" in one-half (1/2) inch or larger letters shall be cast on the nut to clearly indicate the direction of opening the valve.

Tapping Valves : Tapping valves shall be furnished with flanged inlet end connections having a machined projection on the flanges to mate with a machined recess on the outlet flanges of the tapping sleeves and crosses. The outlet end shall conform in dimensions to the AWWA standards for hub or mechanical joint conditions, except that the outside of the hub shall have a large flange for attaching a drilling machine. The seat opening of the valves shall be larger than normal size to permit full diameter cuts. Tapping sleeve or cross shall be of the same manufacture as the tapping valve. It shall conform to MSS SP 111 and 113.

Hydrostatic Test Pressure at Factory: Each gate valve shall be tested at the factory for performance and operation prior to painting and shall be subjected to the following hydrostatic pressure tests: each three (3) inch to twelve (12) inch valve, inclusive, shall be subjected to hydrostatic pressure test under pressures of both three hundred (300) psi and one-hundred seventy-five (175) psi, and sixteen (16) inch to forty-eight (48) inch valve, inclusive, shall be subjected to test pressures of three hundred (300) psi and one-hundred fifty (150) psi. These tests shall be conducted in accordance with provisions of AWWA C500 and/or AWWA C509. Tests for special valves shall be made as provided in the Special Provisions.

Painting at Factory: Before leaving the factory, all ferrous parts of the valves except finished or bearing surfaces shall be painted inside and out as specified in Section 3.21 in AWWA C500 and Section 5.2 of AWWA C509.

Installation of Gate Valves: All gate valves shall be inspected upon delivery in the field to insure proper working order before installation. They shall be set and jointed to the pipe in the manner as set forth in the AWWA Standards for the type of connection ends furnished.

After installation, all valves shall be subjected to a field test. Should any defects in materials or workmanship appear during these tests, the Contractor shall correct such defects with the least possible delay and to the satisfaction of the Engineer. Should the Contractor fail to do this within a reasonable period of time in the judgment of the owner, he may cause such defects to be corrected and deduct the cost thereof from any money or payments due or to become due the Contractor.

### **Additional Requirements**

Shop Drawings: Within thirty (30) days after award of contract and before any work is done, the Contractor shall submit for approval, five (5) copies of the complete drawings of all equipment which he is to furnish, and complete working drawings showing location and general arrangement of all equipment, anchor bolts and supports for same. All drawings furnished by the Contractor shall be subject to approval by the Engineer for compliance with the Engineer's plan and specifications. Approval of shop drawings will not relieve the Contractor from full responsibility for the successful operations of units and compliance with the specifications in all respects.

Tools and Appurtenances: Contractor shall furnish at his expense two (2) complete sets of all special wrenches and tools required for dismantling, maintaining or adjusting each unit. The wrenches shall be suitably mounted upon wrench boards. Tools shall be properly labeled and placed in a suitable metal box approved by the Engineer.

Equipment Guarantee The Contractor shall furnish a warranty in which he guarantees the design and workmanship of the machinery to be as specified herein; that it will accomplish the work herein specified; that it is in accordance with the drawings and specifications accompanying the Contractor's bid, and that all work and material in said machinery is of the best and first-class in every particular. The Contractor shall further agree to replace said machinery or any part thereof shown deficient by the test herein described. If any repairs shall become necessary due to defective material or unskilled workmanship, the Contractor shall furnish all necessary materials or parts and shall make such repairs as necessary at his/her expense.

The Contractor shall furnish a written guarantee from the manufacturer. The Manufacturer shall furnish a statement of overall efficiency which he guarantees as rated capacity and rated head.

Field Tests: The Contractor shall, in the presence of the Engineer, conduct field tests on all pumping equipment. All preparations for such tests shall be made by the Contractor. The Contractor shall furnish all materials, electric meters, taps, gauges, etc., including the water. The Contractor shall submit a detailed description of the test procedure he proposes to use to the Engineer for approval.

The average head during the test should be calculated from measured elevations of the water surface in the wet well both before and after each test. The discharge elevation should be taken to be the invert of the discharge elbow.

The tests shall be conducted in order to determine if the equipment meets the warranties and guarantees as specified.

If on official field tests, the guaranteed deliveries and heads are guaranteed overall efficiencies are not obtained, the equipment shall be subject to rejection.

The term "efficiency" is hereby defined as the ratio of the useful work performed by the unit to the electrical energy input to the meters, said work being computed in like units.

The useful work performed by the units shall be based on the weight of water pumped against the total head. Total head is defined as the difference in elevation between water in the wet well and the invert of the discharge elbow.

Cost incurred for water trucked to the site as necessary and pumped into the wet pit to facilitate testing shall not be paid for separately, but shall be included in the cost of PLUMBING EQUIPMENT, ACCESSORIES AND RELATED SYSTEMS.

KNOWN SUPPLIERS:

CHICAGO PUMP  
Mailing Address  
P.O. Box 6620  
Aurora, IL 60595

FAIRBANKS MORSE  
Mailing Address  
3601 Fairbanks Ave.  
Kansas City, KS 66106

YEOMANS PUMP  
Mailing Address  
P.O. Box 6620  
Aurora, IL 60595

Street Address  
3905 Enterprise Ct.  
Aurora, IL 60504  
Phone: 1-630-236-5700  
Fax: 1-630-236-5779

Street Address  
3601 Fairbanks Ave.  
Kansas City, KS 66106  
Phone; 1-913-371-5000  
Fax: 1-913-748-4025

Street Address  
3905 Enterprise Ct.  
Aurora, IL 60504  
Phone: 1-630-236-5700  
Fax: 1-630-236-5779

Method of Measurement. This work will be measured for payment as L Sum.

Basis of Payment. This work will be paid for at the contract unit price per lump sum for PLUMBING EQUIPMENT, ACCESSORIES AND RELATED SYSTEMS, which price shall be payment in full to furnish all labor, materials and equipment to complete all permanent and temporary work and associated testing required to complete this work.

**PUMP STATION ELECTRICAL WORK**

Description. This work will consist of installing or relocating, electrical components including new electrical service, motor controls, electrical panels, safety switches, transformers, conduit, wiring, switches, outlets, lighting fixtures, and related items located in the Motor House and Dry Pit Area.

Refer to Section 16530 – General Electrical Requirements and Section 16535 – Pump Control Panel for further information.

Method of Measurement. This work will be measured for payment as lump sum.

Basis of Payment. This work will be paid for at the contract unit price per lump sum for PUMP STATION ELECTRICAL WORK, which price shall be payment in full to furnish all labor, materials and equipment to complete all permanent and temporary work and associated testing required to complete this work.

**PUMP STATION GENERAL WORK**

Description. This work shall consist of removing and replacement of the existing entrance door to the motor room, removal and replacement of frame work, trim work, associated hardware, and the priming/painting of the new door and trim work. In addition this work shall consist of any miscellaneous concrete repair that is required for the removal of the existing door and door frame.

Removal. Removal shall consist of the complete removal of the door, door frame and associated trim work and all hardware on the inside and outside of the entranceway.

Replacement. The entrance door shall be replaced with a commercial grade, steel entrance door with grade 1 mortise lock set and self closing hinges. The new door, frame work and associated trim shall be primed and painted to match the existing building color. Included with this work is any repair to the existing masonry door frame required to complete the installation of the entrance door.

Shop drawings and proposal of materials shall be submitted to the Engineer for approval prior to ordering materials.

The installation of the entrance door, including frame work, trim work, associated hardware, and painting shall be according to the manufacturer's recommendations and as directed by the Engineer.

Repair of the existing masonry door frame, when required, shall be according to the following:

Structural Repair of Concrete

Materials. Materials shall be according to the following.

Item	Article/Section
(a) Portland Cement Concrete (Note 1) .....	1020
(b) R1 Mortar (Note2)	
(c) Normal Weight Concrete (Note 3)	
(d) Shotcrete (High Performance) (Note 4)	
(e) Reinforcement Bars .....	1006.10
(f) Anchor Bolts .....	1006.09
(g) Water .....	1002
(h) Curing Compound (Type I) .....	1022
(i) Cotton Mats .....	1020.13 (a) (5)
(j) Protective Coat .....	1023.01
(k) Epoxy (Note 5) .....	1025.03
(l) Mechanical Bar Splicers (Note 6)	

Note 1. The concrete shall be Class SI, except the cement factor shall be a minimum 6.65 cwt/cu yd, the coarse aggregate shall be a CA 16, and the strength shall be a minimum 4000 psi)compressive or 675 psi flexural at 14 days. A high range water-reducing admixture shall be used to obtain a 5-7 in. slump, but the cement factor shall not be reduced. This cement factor restriction shall also apply if a water-reducing admixture is used.

Note 2. The R1 Mortar shall be from the Department's approved list of Packaged, Dry, Rapid Hardening, Cementitious Materials for Concrete Repairs with coarse aggregate added. The amount of coarse aggregate added to the R1 Mortar shall be per the manufacturer's recommendations. The coarse aggregate gradation shall be CA 16



from an Aggregate Gradation Control System source or a packaged aggregate meeting Article 1004.02 with a maximum size of 1/2 in. The R1 Mortar and coarse aggregate mixture shall comply with the air content and strength requirements for Class SI concrete. Mixing shall be per the manufacturer's recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete. A high range water-reducing admixture shall be used to obtain a 5-7 in. slump.

Note 3. The packaged concrete mixture shall be from the Department's approved list of Packaged, Dry, Formed, Concrete Repair Mixtures. The materials and preparation of aggregate shall be according to ASTM C 387. Proportioning shall be according to ASTM C 387, except the minimum cement factor shall be 6.65 cwt/cu yd. Cement replacement with fly ash or ground granulated blast-furnace slag shall be according to Section 1020. The coarse aggregate shall be a maximum size of 1/2 in. The packaged concrete mixture shall comply with the air content and strength requirements for Class SI concrete. Mixing shall be per the manufacturer's recommendations, except the water/cement ratio shall not exceed the value specified for Class SI concrete. A high range water-reducing admixture shall be used to obtain a 5-7 in. slump.

Note 4. A packaged, pre-blended, and dry combination of materials, for the wet-mix shotcrete method shall be provided according to ASTM C 1480. An accelerator is prohibited, except the shotcrete may be modified at the nozzle with a non-chloride accelerator for overhead applications. The shotcrete shall be Type FA, Grade FR, and Class I. The fibers shall be Type III synthetic according to ASTM C 1116.

The 7 and 28 day compressive strength requirements in ASTM C 1480 shall not apply. Instead the shotcrete shall obtain a minimum compressive strength of 4000 psi at 14 days.

The packaged shotcrete shall be limited to the following proportions:

The cement and finely divided minerals shall be 6.05 cwt/cy. to 7.50 cwt/cy and the cement shall not be below 4.70 cwt/cy.

Class F fly ash is optional and the maximum shall be 15 percent by mass (weight) of cement.

Class C fly ash is optional and the maximum shall be 20 percent by mass (weight) of cement.

Ground granulated blast-furnace slag is optional and the maximum shall be 25 percent by mass (weight) of cement.

Microsilica is required and shall be a minimum of 5 percent by mass (weight) of cement, and a maximum of 10 percent. As an alternative to microsilica, high-reactivity metakaolin may be used at a minimum of 5 percent by mass (weight) of cement, and a maximum of 10 percent.

Fly ash shall not be used in combination with ground granulated blast-furnace slag. Class F fly ash shall not be used in combination with Class C fly ash. Microsilica shall not be used in combination with high-reactivity metakaolin. A finely divided mineral shall not be used in combination with a blended hydraulic cement, except for microsilica or high-reactivity metakaolin.

The water/cement ratio shall be a maximum of 0.42.

The air content as shot shall be 4.0 – 8.0 percent.

Note 5. In addition ASTM C 881, Type IV, Grade 2 or 3, Class A, B, or C may be used.

Note 6. Mechanical bar splicers shall be from the approved list of Mechanical Reinforcing Bar Splicers / Coupler Systems, and shall be capable of developing in tension at least 125 percent of the yield strength of the existing reinforcement bar.

Equipment. Equipment shall be according to Article 503.03 and the following.

Chipping Hammer – The chipping hammer for removing concrete shall be a light-duty pneumatic or electric tool with a 7 kg (15 lb) maximum class or less.

Blast Cleaning Equipment – Blast cleaning equipment for concrete surface preparation shall be the abrasive type, and the equipment shall have oil traps.

Hydrodemolition Equipment – Hydrodemolition equipment for removing concrete shall be calibrated, and shall use water according to Section 1002.

High Performance Shotcrete Equipment – The batching, mixing, pumping, hose, nozzle, and auxiliary equipment shall be for the wet-mix shotcrete method, and shall meet the requirements of ACI 506R.

### Construction Requirements

General. The repair methods shall be either formed concrete repair or shotcrete. The repair method shall be selected by the Contractor with the following rules.

- (a) Rule 1. For formed concrete repair, a subsequent patch to repair the placement point after initial concrete placement will not be allowed. As an example, this may occur in a vertical location located at the top of the repair.
- (b) Rule 2. Formed concrete repair shall not be used for overhead applications.
- (c) Rule 3. Shotcrete shall not be used for column repairs greater than 4 in. in depth, or any repair location greater than 8 in. in depth. The only exception to this rule would be for a horizontal application, where the shotcrete may be placed from above in one lift.

- (d) Rule 4. If formed concrete repair is used for locations that have reinforcement with less than 19 mm (0.75 in.) of concrete cover, the concrete mixture shall contain fly ash or ground granulated blast-furnace slag at the maximum cement replacement allowed.

Temporary Shoring or Cribbing. When a temporary shoring or cribbing support system is required, the Contractor shall provide details and computations, prepared and sealed by an Illinois licensed Structural Engineer, to the Department for review and approval. When ever possible the support system shall be installed prior to starting the associated concrete removal. If no system is specified, but during the course of removal the need for temporary shoring or cribbing becomes apparent or is directed by the Engineer due to a structural concern, the Contractor shall not proceed with any further removal work until an appropriate and approved support system is installed.

Concrete Removal. The Contractor shall provide ladders or other appropriate equipment for the Engineer to mark the removal areas. Repair configurations will be kept simple, and squared corners will be preferred. The repair perimeter shall be sawed a depth of 1/2 in. or less, as required to avoid cutting the reinforcement. If the concrete is broken or removed beyond the limits of the initial saw cut, the new repair perimeter shall be recut. The areas to be repaired shall have all loose, unsound concrete removed completely by the use of chipping hammers, hydrodemolition equipment, or other methods approved by the Engineer. The concrete removal shall extend along the reinforcement bar until the reinforcement is free of bond inhibiting corrosion. The outermost layer of reinforcement bar within the repair area shall be undercut to a depth of 3/4 in. or the diameter of the reinforcement bar, whichever value is larger. The underlying transverse reinforcement bar shall also be undercut as previously described, unless the reinforcement is not corroded, and the reinforcement bar is encased and well bonded to the surrounding concrete.

If sound concrete is encountered before existing reinforcement bars are exposed, further removal of concrete shall not be performed unless the minimum repair depth is not met.

The repair depth shall be a minimum of 1 in. The substrate profile shall be  $\pm 1/16$  in. The perimeter of the repair area shall have a vertical face.

If a repair is located at the ground line, any excavation required below the ground line to complete the repair shall be included in this work.

The Contractor shall have a maximum of 14 calendar days to complete each repair location with concrete or shotcrete, once concrete removal has started for the repair.

The Engineer shall be notified of concrete removal that exceeds 6 in. in depth, one fourth the cross section of a structural member, more than half the vertical column reinforcement is exposed in a cross section, more than 6 consecutive reinforcement bars are exposed in any direction, within 1.5 in. of a bearing area, or other structural concern. Excessive deterioration or removal may require further evaluation of the structure or installation of temporary shoring and cribbing support system.

Surface Preparation. Prior to placing the concrete or shotcrete, the Contractor shall prepare the repair area and exposed reinforcement by blast cleaning. The blast cleaning shall provide a surface that is free of oil, dirt, and loose material.

If a succeeding layer of shotcrete is to be applied, the initial shotcrete surface and remaining exposed reinforcement shall be free of curing compound, oil, dirt, loose material, rebound (i.e. shotcrete material leaner than the original mixture which ricochets off the receiving surface), and overspray. Preparation may be by lightly brushing or blast cleaning if the previous shotcrete surface is less than 36 hours old. If more than 36 hours old, the surface shall be prepared by blast cleaning.

The repair area and perimeter vertical face shall have a rough surface. Care shall be taken to ensure the perimeter sawcut is roughened. Just prior to concrete or shotcrete placement, saturate the repair area with water to a saturated surface-dry condition. Any standing water shall be removed.

Concrete or shotcrete placement shall be done within 3 calendar days of the surface preparation or the repair area shall be prepared again.

Reinforcement. Exposed reinforcement bars shall be cleaned of concrete and corrosion by blast cleaning. After cleaning, all exposed reinforcement shall be carefully evaluated to determine if replacement or additional reinforcement bars are required.

Reinforcing bars that have been cut or have lost 25 percent or more of their original cross sectional area shall be supplemented by new in kind reinforcement bars. New bars shall be lapped a minimum of 32 bar diameters to existing bars. A mechanical bar splicer shall be used when it is not feasible to provide the minimum bar lap. No welding of bars shall be performed.

Intersecting reinforcement bars shall be tightly secured to each other using 0.006 in. or heavier gauge tie wire, and shall be adequately supported to minimize vibration during concrete placement or application of shotcrete.

For reinforcement bar locations with less than 0.75 in. of cover, protective coat shall be applied to the completed repair. The application of the protective coat shall be according to Article 503.19, 2nd paragraph, except blast cleaning shall be performed to remove curing compound.

The Contractor shall anchor the new concrete to the existing concrete with 3/4 in. diameter hook bolts for all repair areas where the depth of concrete removal is greater than 8 in. and there is no existing reinforcement extending into the repair area. The hook bolts shall be spaced at 15 in maximum centers both vertically and horizontally, and shall be a minimum of 12 in. away from the perimeter of the repair. The hook bolts shall be installed according to Section 584.

Repair Methods. All repair areas shall be inspected and approved by the Engineer prior to placement of the concrete or application of the shotcrete.

- (a) Formed Concrete Repair. Falsework shall be according to Article 503.05. Forms shall be according to Article 503.06. Formwork shall provide a smooth and uniform concrete finish,

and shall approximately match the existing concrete structure. Formwork shall be mortar tight and closely fitted where they adjoin the existing concrete surface to prevent leakage. Air vents may be provided to reduce voids and improve surface appearance. The Contractor may use exterior mechanical vibration, as approved by the Engineer, to release air pockets that may be entrapped.

The concrete for formed concrete repair shall be a Class SI Concrete, or a packaged R1 Mortar with coarse aggregate added, or a package Normal Weight Concrete at the Contractor's option. The concrete shall be placed and consolidated according to Article 503.07. The concrete shall not be placed when frost is present on the surface of the repair area, or the surface temperature of the repair area is less than 40 °F. All repaired members shall be restored as close as practicable to their original dimensions.

Curing shall be done according to Article 1020.13.

If temperatures below 45 °F are forecast during the curing period, protection methods shall be used. Protection Method I according to Article 1020.13(e)(1), or Protection Method II according to Article 1020.13(e)(2) shall be used during the curing period.

The surfaces of the completed repair shall be finished according to Article 503.16.

- (b) Shotcrete. Shotcrete shall be tested by the Engineer for air content according to Illinois Modified AASHTO T 152. Obtain the sample in a damp, non-absorbent container from the discharge end of the nozzle.

For compressive strength of shotcrete, a 18 x 18 x 3.5 in. test panel shall be shot by the Contractor for testing by the Engineer. A steel form test panel shall have a minimum thickness of 3/16 in. for the bottom and sides. A wood form test panel shall have a minimum 3/4 in. thick bottom, and a minimum 1.5 in. thickness for the sides. The test panel shall be cured according to Article 1020.13 (a) (3) or (5) while stored at the jobsite and during delivery to the laboratory. After delivery to the laboratory for testing, curing and testing shall be according to ASTM C 1140.

The method of alignment control (i.e. ground wires, guide strips, depth gages, depth probes, and formwork) to ensure the specified shotcrete thickness and reinforcing bar cover is obtained shall be according to ACI 506R. Ground wires shall be removed after completion of cutting operations. Guide strips and formwork shall be of dimensions and a configuration that do not prevent proper application of shotcrete. Metal depth gauges shall be cut 1/4 in. below the finished surface. All repaired members shall be restored as close as practicable to their original dimensions.

The shotcrete shall not be applied when the air temperature is below 45 °F and falling or below 40 °F. Shotcrete shall not be applied when the air temperature is greater than 90 °F. The applied shotcrete shall have a minimum temperature of 50 °F and a maximum temperature of 90 °F. The shotcrete shall not be applied during periods of rain unless protective covers or enclosures are installed. The shotcrete shall not be applied when

frost is present on the surface of the repair area, or the surface temperature of the repair area is less than 40 °F. If necessary, lighting shall be provided to provide a clear view of the shooting area.

The shotcrete shall be applied according to ACI 506R, and shall be done in a manner that does not result in cold joints, laminations, sandy areas, voids, sags, or separations. In addition, the shotcrete shall be applied in a manner that results in maximum densification of the shotcrete. Shotcrete which is identified as being unacceptable while still plastic shall be removed and re-applied.

The nozzle shall normally be at a distance of 2-5 ft from the receiving surface, and shall be oriented at right angles to the receiving surface. Exceptions to this requirement will be permitted to fill corners, encase large diameter reinforcing bars, or as approved by the Engineer. For any exception, the nozzle shall never be oriented more than 45 degrees from the surface. Care shall be taken to keep the front face of the reinforcement bar clean during shooting operations. Shotcrete shall be built up from behind the reinforcement bar. Accumulations of rebound and overspray shall be continuously removed prior to application of new shotcrete. Rebound material shall not be incorporated in the work.

Whenever possible, shotcrete shall be applied to the full thickness in a single layer. The maximum thickness shall be 4 in. unless the shotcrete is applied from above on a horizontal surface, or a thicker application is approved by the Engineer. When two or more layers are required, the minimum number shall be used and shall be done in a manner without sagging or separation. A flash coat (i.e. a thin layer of up to 1/4 in. applied shotcrete) may be used as the final lift for overhead applications.

Prior to application of a succeeding layer of shotcrete, the initial layer of shotcrete shall be prepared according to the surface preparation and reinforcement bar cleaning requirements. Upon completion of the surface preparation and reinforcement bar treatment, water shall be applied according to the surface preparation requirements unless the surface is moist. The second layer of shotcrete shall then be applied within 30 minutes.

Shotcrete shall be cut back to line and grade using trowels, cutting rods, screeds or other suitable devices. The shotcrete shall be allowed to stiffen sufficiently before cutting. Cutting shall not cause cracks or delaminations in the shotcrete. For depressions, cut material may be used for small areas. Rebound material shall not be incorporated in the work. For the final finish, a wood float shall be used to approximately match the existing concrete texture. All repaired members shall be restored as close as practicable to their original dimensions.

Cotton mats shall be applied to the exposed layer of shotcrete within 10 minutes after finishing, and wet curing shall begin immediately. As an alternative, Type I curing compound shall be applied within 10 minutes and moist curing with cotton mats shall begin within 3 hours.

When a shotcrete layer is to be covered by a succeeding shotcrete layer within 36 hours, the repair area shall be protected with intermittent hand fogging, or wet curing with either burlap or cotton mats shall begin within 10 minutes. Intermittent hand fogging may be used only for the first hour. Thereafter, wet curing with burlap or cotton mats shall be used until the succeeding shotcrete layer is applied. Intermittent hand fogging may be extended to the first hour and a half if the succeeding shotcrete layer is applied by the end of this time.

The curing period shall be for 7 days, except when there is a succeeding layer of shotcrete. In this instance, the initial shotcrete layer shall be cured until the surface preparation and reinforcement bar treatment is started.

If temperatures below 45 °F are forecast during the curing period, protection methods shall be used. Protection Method I according to Article 1020.13(e)(1), or Protection Method II according to Article 1020.13(e)(2) shall be used during the curing period

Inspection of Completed Work. The Contractor shall provide ladders or other appropriate equipment for the Engineer to inspect the repaired areas. After curing but no sooner than 28 days after placement of concrete or shooting of shotcrete, the repair shall be examined for conformance with original dimensions, cracks, voids, and delaminations. Sounding for delaminations will be done with a hammer or by other methods determined by the Engineer.

The repaired area shall be removed and replaced, as determined by the Engineer, for nonconformance with original dimensions, surface cracks greater than 0.01 in. in width, map cracking with a crack spacing in any direction of 18 in. or less, voids, or delaminations.

If a nonconforming repair is allowed to remain in place, cracks 0.01 in. or less shall be repaired with epoxy according to Section 590. For cracks less than 0.007 in., the epoxy may be applied to the surface of the crack. Voids shall be repaired according to Article 503.16.

Publications and Personnel Requirements. The Contractor shall provide a current copy of ACI 506R to the Engineer a minimum of one week prior to start of construction.

The shotcrete crew foreman shall have current American Concrete Institute (ACI) nozzle men certification for vertical wet and overhead wet applications. A copy of the certificate shall be given to the Engineer. An exception to this requirement will be allowed until June 30, 2006, if it can be shown that the individual is in the process of obtaining nozzle men certification.

Method of Measurement. This work shall be measured for payment as lump sum

Basis of Payment. This work shall be paid for at the contract unit bid price per lump sum for PUMP STATION GENERAL WORK which will be payment in full to furnish all labor, materials and equipment to complete this work.

## **COMPLETE SPARE MAIN PUMP ASSEMBLY**

Description. This work will consist of furnishing and transporting a spare main pump assembly to be stored at the Department's Watseka Maintenance Facility.

The spare main pump assembly will be according the Special Provision for Plumbing Equipment, Accessories and related systems. The spare main pump assembly will include the pump and motor assembly and all related accessories and fittings to install the spare pump when required.

The Contractor will furnish, transport and unload the spare main pump assembly to the Department's Watseka Maintenance Facility located at, 111 Yount Avenue, Watseka, IL 60970. Contact person is Rick Flessner (815) 739-2180.

The contractor shall provide heavy treated timbers to set the pump onto and moved to a location as directed by the maintenance field engineer.

Method of Measurement. This work shall be measured for payment as lump sum.

Basis of Payment. This work shall be paid for at the contract unit bid price per lump sum for COMPLETE SPARE MAIN PUMP ASSEMBLY which will be payment in full to furnish all labor, materials and equipment to complete this work.

## **CONFINED SPACE**

The Contractor is advised that the dry pit and wet pit area(s) are considered confined space(s) and shall take necessary precautions. The Contractor shall comply with the requirements of this Specification and all applicable Federal, State, and Local laws, codes, and regulations, including, but not limited to the regulations of the Occupational Safety and Health Administration (OSHA) and Illinois Department of Labor.

The Contractor shall comply with all applicable regulations even if the regulation is not specifically referenced herein. If a Federal, State, or Local regulation is more restrictive than the requirements of this Specification, the more restrictive requirements shall prevail.

Compliance with these requirements shall not relieve the Contractor of the health and safety of the workers involved.

Compliance with this Special Provision will not be paid for but shall be included in the cost of the related construction items involved and no additional compensation for work derived from this compliance will be allowed.

## **FINAL CLEANUP**

Upon completion of the work, all surplus material, excavated and useless materials, etc., shall be removed from within the limits of the right of way.



## **HEATING, VENTILATION AND AIR CONDITIONING WORK COMPLETE**

Description. This work will consist of the removal of existing louvers and the installation of HVAC equipment as shown on the plans.

Method of Measurement. This work will be measured for payment as lump sum.

Basis of Payment. This work will be paid for at the contract unit price per lump sum for HEATING, VENTILATION AND AIR CONDITIONING WORK COMPLETE, which price shall be payment in full to furnish all labor, materials and equipment to complete all permanent and temporary work and associated testing required to remove the equipment as stated and install a complete new HVAC system.

## **SECTION 11310 - SUBMERSIBLE PUMPS**

### **PART 1 GENERAL**

#### **1.01 DESCRIPTION OF THE WORK**

- A. Under this item, the Contractor shall furnish and install two (2) submersible non-clog pumps with appurtenances as required and specified.
- B. Guide Rails and Installation/Removal Assembly.
- C. Anchors.

#### **1.02 RELATED WORK**

- A. Division 16 - Electrical.

#### **1.03 QUALITY ASSURANCE**

- A. The pump manufacturer shall perform the following inspections and tests on the pumps before shipment from the factory.
  - 1. Impeller, motor rating and electrical connections shall first be checked for compliance to the customer's purchase order.
  - 2. A motor and cable insulation test for moisture content or insulation defects.
  - 3. Prior to submergence, the pump shall be run dry to establish correct rotation and mechanical integrity.
  - 4. The pump shall be run for 30 minutes submerged, a minimum of 6 feet under water.
  - 5. After operational test No. 4, the insulation test (No. 2) is to be performed again.

A written report stating the foregoing has been done shall be supplied with each pump at the time of shipment.

#### 1.04 REFERENCE TO STANDARDS (RESERVED)

#### 1.05 SUBMITTAL REQUIREMENTS

- A. Submit under the provisions of Special Conditions - Section 01300.
- B. The submittals for the pumps and accessories shall include but not be limited to the following:
  - 1. Equipment Layout (plan and elevation)
  - 2. Overall Dimensions
  - 3. Anchor Bolt or Mounting Hole Dimensions
  - 4. Weight Total and Weights of Shipping Units
  - 5. Detail Dimensions
  - 6. Materials of Construction
  - 7. Capacity
  - 8. Performance Curves
  - 9. Nameplate Data
  - 10. Wiring Diagrams and Schematics Diagrams
  - 11. Interconnection Diagram (Electrical)
  - 12. Mounting Details
  - 13. Bill of Materials
  - 14. Ambient Conditions Necessary for Efficient Operation

#### 1.06 WARRANTY

- A. The manufacturer shall warrant the units being supplied to the Owner against defects in workmanship and materials for a period of two (2) years.
- B. The Contractor shall warrant the units being supplied to the Owner for a period of two (2) years.

### PART 2 PRODUCTS

#### 2.01 MANUFACTURERS

- A. Flygt, Model NT-3171.181

#### 2.02 SUBMERSIBLE PUMPS

- A. General Design Criteria
  - 1. The pumps shall be capable of handling raw sewage and shall be capable of passing 3" spherical solids and Design Duty as indicated in 3.05 – SCHEDULE. The design criteria for each pump are given in the Schedule at the end of this Section. The pump unit shall automatically and firmly connect to the discharge piping when lowered into place on its mating discharge connection, permanently installed in the dry well. The pump shall be easily removable for inspection or service, requiring no bolts, nuts or other fastenings to be disconnected. Each pump shall have

a fixed positions lifting bail for pump removal. All submersible pumps shall be by the same manufacturer. All major parts, such as the stator casing, oil casing, sliding bracket, volute and impeller shall be of gray iron. All surfaces coming into contact with sewage shall be protected by a coating resistant to sewage. All exposed bolts and nuts shall be of stainless steel.

2. Pump shall be designed for use in a dry pit application. Provisions shall be included so that the pump and motor will maintain proper cooling.

B. Impeller

1. The impeller(s) shall be of gray cast iron, Class 35B, dynamically balanced, double shrouded non-clogging design having a long throughlet without acute turns. The impellers shall be capable of handling solids, fibrous materials, heavy sludge and other matter found in wastewater. A full vaned, not vortex, impeller shall be used for maximum hydraulic efficiency. Mass moment of inertia calculations shall be provided by the pump manufacturer upon request. Impellers shall be keyed to the shaft, retained with an Allen head bolt and shall be capable of passing a minimum 3 inch diameter solid. All impellers shall be coated with an acrylic dispersion zinc phosphate primer.

C. Pump Shaft

1. Pump and motor shaft shall be the same unit. The pump shaft shall be an extension of the motor shaft. Couplings shall not be acceptable. The shaft shall be C1035 Carbon Steel and shall be completely isolated from the pumped liquid.

D. Shaft Seal System

1. Each pump shall be provided with a tandem mechanical shaft seal system consisting of two totally independent seal assemblies. The seals shall operate in a lubricant reservoir that hydrodynamically lubricates the lapped seal faces at a constant rate. The lower, primary seal unit, located between the pump and the lubricant chamber, shall contain one stationary and one positively driven rotating, corrosion resistant tungsten-carbide ring. The upper, secondary seal unit, located between the lubricant chamber and the motor housing, shall contain one stationary and one positively driven rotating, corrosion resistant tungsten-carbide seal ring. Each seal interface shall be held in contact by its own spring system. The seals shall require neither maintenance nor adjustment nor depend on direction of rotation for sealing. For special applications, other seal face materials shall be available.
2. The following seal types shall not be considered acceptable nor equal to the dual independent seal specified: shaft seals without positively driven rotating members, or conventional double mechanical seals containing either a common single or double spring acting between the upper and lower seal faces. No system requiring a pressure differential to offset pressure and to effect sealing shall be used.

3. Each pump shall be provided with a lubricant chamber for the shaft sealing system. The lubricant chamber shall be designed to prevent overfilling and to provide lubricant expansion capacity. The drain and inspection plug, with positive anti-leak seal shall be easily accessible from the outside. The seal system shall not rely upon the pumped media for lubrication. The motor shall be able to operate dry without damage while pumping under load.
  4. Seal lubricant shall be FDA Approved, nontoxic.
- E. Bearings
1. The pump shall rotate on two (2) permanently lubricated bearings. The upper bearing shall be a single row deep groove ball bearing or roller bearing. For pumps greater than 2 HP, the lower bearing shall be a two row angular contact ball bearing, single row lower bearings not being acceptable.
  2. No other motion of the pump unit, such as tilting or rotating, shall be required. Sealing of the discharge interface by means of a diaphragm, O-ring or other devices will not be considered acceptable or equal to a metal to metal contact of the pump discharge flange and mating discharge connection specified and required. No portion of the pump unit shall bear directly on the floor of the dry pit. There shall be no more than one 90 degree bend allowed between the volute discharge flange and station piping.
- F. Pump Motor
1. The pump motor shall be a NEMA B design, induction type with a squirrel cage rotor, shell type design, housed in an air filled, watertight chamber. The motor shall be inverter duty rated in accordance with NEMA MG1, Part 31. The stator windings shall be insulated with moisture resistant Class H insulation rated for 180°C (356°F). The stator shall be insulated by the trickle impregnation method using Class H monomer-free polyester resin resulting in a winding fill factor of at least 95%. The stator shall be heat-shrink fitted into the cast iron stator housing. The use of multiple step dip and bake-type stator insulation process is not acceptable. The use of bolts, pins or other fastening devices requiring penetration of the stator housing is not acceptable. The motor shall be designed for continuous duty handling pumped media of 40°C (104°F) and capable of up to 15 evenly spaced starts per hour. The rotor bars and short circuit rings shall be made of cast aluminum. Thermal switches set to open at 120°C (260°F) shall be embedded in the stator lead coils to monitor the temperature of each phase winding. These thermal switches shall be used in conjunction with and supplemental to external motor overload protection and shall be connected to the control panel. The junction chamber shall be sealed off from the stator housing and shall contain a terminal board for connection of power and pilot sensor cables using threaded compression type terminals. The use of wire nuts or crimp-type connectors is not acceptable. The motor and the pump shall be produced by the same manufacturer.

2. The combined service factor (combined effect of voltage, frequency and specific gravity) shall be a minimum of 1.15. The motor shall have a voltage tolerance of plus or minus 10%. The motor shall be designed for operation up to 40°C (104°F) ambient and with a temperature rise not to exceed 80°C. A performance chart shall be provided upon request showing curves for torque, current, power factor, input/output kW and efficiency. This chart shall also include data on starting and no-load characteristics.
3. The power cable shall be sized according to the NEC and ICEA standards and shall be of sufficient length to reach the junction box without the need of any splices. The outer jacket of the cable shall be oil resistant chloroprene rubber. The motor and cable shall be capable of continuous submergence underwater without loss of watertight integrity to a depth of 65 feet.
4. The motor horsepower shall be adequate so that the pump is non-overloading throughout the entire pump performance curve from shut-off through run-out.

G. Pump Cable

1. The cable entry water seal design shall be such that precludes specific torque requirements to insure a watertight and submersible seal. The cable entry junction box and motor shall be separated by a watertight stator lead sealing gland or terminal board which shall isolate the motor interior from foreign materials and water gaining access through the pump top. If epoxy cable entry is used in lieu of a rubber grommet and secondary sealing system each pump control shall be provided with an independent ground fault detection system indicator and manual reset which will prevent a pump from operating if a ground fault is sensed.
2. Pump motor cable installed shall be suitable for submersible pump applications and this shall be indicated by a code or legend permanently embossed on the cable. Cable sizing shall conform to NEC specifications for pump motors and shall be of adequate size to allow motor voltage conversion without replacing the cable. A minimum of 40 feet of cable shall be supplied with the excess coiled and hung.
3. A suitable bracket shall be supplied and installed near top of the station to loop and hold cables within the stations. This is to prevent straining the cables at the sealing hub.

H. Seals

1. All mating surfaces of major parts shall be machined and fitted with nitrile O-rings where watertight sealing is required. Machining and fitting shall be such that sealing is accomplished by automatic compression in 2 planes and O-ring contact made on four surfaces, without the requirement of specific torque limits to affect this. Rectangular cross-sectioned gaskets requiring specific torque limits to achieve compression shall not be considered adequate or normal.

2. Tolerances of all parts shall be such that allows replacement of any part without additional machining required to insure sealing as described above. No secondary sealing compounds, greases or other devices shall be used.

I. Cooling System

1. Each unit shall be provided with an adequately designed cooling system. The water jacket shall encircle the stator housing; thus, providing heat dissipation for the motor regardless of the type of installation. Impeller back vanes shall provide the necessary circulation of the cooling liquid through the water jacket. The cooling media channels and ports shall be non-clogging by virtue of their dimensions. Provisions for external cooling and seal flushing shall also be provided. The cooling system shall provide for continuous pump operation in liquid temperature of up to 104 degrees F. Restrictions below this temperature are not acceptable.

J. Thermal Sensors

1. Thermal sensors shall be used to monitor stator temperatures for motors over 3 HP. There shall be one for each phase group in the motor. These shall be used in conjunction with and supplemental to external motor over current protection and available at the control panel. Sensors shall be set at 260 degree F to maintain Nema B design requirements. Thermal sensors monitoring pump stator shall turn pump off and activate an alarm if stator overheats. Sensors in excess of 260 degree F are not acceptable.

K. Leakage Sensor

1. A leakage sensor shall be used to monitor and detect water in the stator chamber. The leakage sensor shall be a float switch which when activated shall stop the motor and send an alarm. Leakage sensors that detect water in the oil chamber may be provided, however, those types of sensors shall be provided in addition to the leakage sensor in the motor chamber.

L. Pump Accessories

The submersible pump locations shall be furnished with the following accessories, by the pump manufacturer.

1. Cable holders. (also see paragraph G - Pump Cable).
2. Nameplate. Each unit to be complete with a stainless steel nameplate securely attached to pump itemizing pump data including model number, serial number, impeller diameter and part number.

M. Operation

1. The Owner shall operate the pumps and motors at a constant speed and be automatically turned on/off using wet well floats and/or manual controls.

## 2.03 INSTALLATION/REMOVAL ASSEMBLY

- A. Sliding Guide Bracket
  - 1. A sliding guide bracket shall be an integral part of the pump unit. The volute casing shall have a machined discharge flange to automatically and firmly connect with the cast iron discharge connection, which when bolted to the floor of the sump and discharge line, will receive the pump discharge connecting flange without the need of adjustment, fasteners, clamps, O rings, packing or similar devices.
- B. Guide Bars
  - 1. Installation of the pump unit to the discharge connection shall be the result of a simple linear downward motion of the pump guided by no less than two hot dipped galvanized steel guide bars. The guide bars shall be of the size recommended by the pump manufacturer and shall be made from Schedule 40 hot dipped galvanized steel pipe.
- C. Guide Bar Brackets
  - 1. Intermediate guide bar brackets - sized as required by the pump manufacturer, spaced as recommended by the manufacturer. Brackets shall be stainless steel.
  - 2. Upper Guide Bar Brackets - sized as required by the pump manufacturer. Brackets shall be stainless steel.
- D. Lifting Device
  - 1. The pump shall be provided with a lifting bail which permits the pump to be lifted with a single hook so that it hangs in true vertical position.
- E. Lifting Chain and Chain Holder
  - 1. Provide 40-feet of 3/16" diameter type 316 stainless steel lifting chain for each pump. One end of each chain shall be fitted to the lifting bail of each pump such that the pump may be raised and lowered along the guide bars. A 316 stainless steel chain holder shall be installed for each pump station. The chain holder shall be equipped with hooks appropriate for supporting the weight of the chain. All hardware used for installation of the chain holder shall be 316 stainless steel and sized to support the weight of the chains.

## 2.04 ANCHOR BOLTS

- A. Furnish and install Type 304 stainless steel epoxy anchor bolts of the size and number recommended by the pump manufacturer.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that anchor bolts are correct size and positioned properly.

3.02 PREPARATION (RESERVED)

3.03 INSTALLATION

- A. Install submersible pumps, installation/removal assembly, control equipment and accessories in accordance with manufacturer's instructions and as shown on the drawings.
- B. Install interconnecting electrical wiring, conduit, etc. between submersible pumps and control equipment so that when power and control wiring is brought to the control equipment, the submersible pump system will be a complete operational system.

3.04 MANUFACTURER'S SERVICES

- A. The Contractor shall include with his bid the services of the pump manufacturer's field service technician for a period of one 8-hour day at the site. This service shall be for the purpose of check-out, initial start-up, certification, and instruction of plant personnel. A written report covering the technician's findings and installation certification shall be submitted to the Engineer covering all inspections and outlining in detail any deficiencies noted.

3.05 TESTING

- A. Before final acceptance of the pumps specified herein, the Contractor shall submit five (5) copies of certified and properly identified performance curves which shall reflect the operating characteristics of each pump model and impeller combination being supplied. The curves shall indicate head, capacity, horsepower, efficiency and input KW.
- B. Prior to plant operation, all equipment shall be inspected for proper alignment, quiet operation, proper connection and satisfactory performance by means of a functional test.

3.05 SCHEDULES

- A. See pump schedule below.

SUBMERSIBLE PUMP SCHEDULE

Design Duty Points Condition

Service	Design Flow Per Pump (GPM)	No. of Pumps	Max. Pump Speed (RPM)	Freq. (Hz)	Min. Hydraulic Efficiency (%)	TDH (Ft.)	Static Head (Ft.)	Discharge Port (Inches)	Motor Size (HP)
Duty Point 1	2060	2	1750	60	71.0	30.5	29.0	10	25
Duty Point 2	3000	2	1750	60	75	24	29.0	10	25

It is anticipated that the proposed discharge piping will follow existing alignment. Any realignment must be approved by the engineer and the respective TDH and Duty points must be modified to reflect such changes.



## SECTION 16530 – GENERAL ELECTRICAL REQUIREMENTS

### PART 1-GENERAL

#### 1.01 WORK INCLUDES

- A. This work shall include Lift Station utility service, controls, power distribution, accessories and coordination and connection to electric utility wiring required for a complete and operational system.
- B. Work included in this section shall apply to installation and testing of all materials and equipment necessary to completely install electrical system as shown on drawings and as described herein in these specifications, or as may be necessary for a complete and operational electrical system.
- C. Drawings pertaining to this installation indicate general location of conduits, wiring, and other details necessary for installation of system.
- D. Electrical installation as shown on drawings and as specified herein is based upon best available information.
- E. Any minor changes in location of equipment, to include conduits, outlets, etc., from those shown on drawings, shall be made without extra charge if so directed by Engineer.
- F. All electrical equipment shall be installed in conformance with applicable sections of NPFA 70 - National Electrical Code, respective equipment manufacturer's directions, as detailed on drawings and as specified herein. Any installations which void U.L. listing (or other third party listing) and/or manufacturer's warranty of a device or equipment shall NOT be permitted.

#### 1.02 LAWS AND ORDINANCES

- A. In installation of this work, Contractor shall comply in every respect with requirements of National Electrical Code (NEC), National Board of Fire Underwriters, and any state and local requirements, laws and ordinances as may be applicable.
- B. If, in opinion of the Contractor, there is anything in drawings or specifications that will not strictly comply with above laws, ordinances and rules, the matter shall be referred to the attention of the Engineer for a decision before proceeding with that part of the work. No changes on drawings or in specifications shall be made without the full consent of Engineer.
- C. Contractor shall obtain and pay for all licenses, permits and inspections required by above laws, ordinances and rules for entire electric wiring job called for in these specifications and accompanying drawings.

#### 1.03 DRAWINGS

- A. Drawings and specifications are intended to be descriptive only, and any error or omissions of detail in either shall not relieve Contractor from obligations thereunder to install in correct detail any and all materials necessary for complete and operating electrical systems to extent shown on drawings and described in this specification.

- B. Contractor shall, during progress of job, record any and all changes or deviations from original drawings, and, at completion of project, shall deliver to Engineer a single marked-up set of "as-built" drawings.

#### 1.04 SHOP AND ERECTION DRAWINGS

- A. This Contractor shall prepare shop drawings for all parts of his work. Before commencing any work or providing any material, Contractor shall submit for approval of Engineer all drawings relating to construction, arrangement or disposition of equipment entering into contract, and show complete equipment with manufacturer's specifications of same.
- B. Shop drawings of all power and lighting systems, fixtures, wire, cables, devices, etc. shall be submitted for approval, as well as complete details of all systems not shown in detail on drawings.

#### 1.05 SERVICE ENTRANCE

- A. The existing service entrance to the facility shall be removed and replaced with a new service entrance.
- B. Contractor shall note that all "new service" or "one time charges" that may be billed by the serving utility shall be paid for by the Contractor and included with the base bid price under this item. They will not be paid for separately.
- C. Contractor shall furnish and install the new service entrance per serving utility requirements.

#### 1.06 TEST REPORTS

- A. Submit test reports of entire electrical system as noted herein. Submit to the Engineer in triplicate.

### PART 2-PRODUCTS AND EQUIPMENT SPECIFICATIONS

#### 2.01 ENCLOSURES

- A. NEMA 12

Enclosures shall be NEMA 12 rated, continuous hinge, gasketed, single or double door, with white interior mounting panel. Materials of construction shall be 16 or 14 gauge steel, depending on enclosure size, with polyester powder coating. Small enclosures shall be similar to Hoffman "CHQR" Series, or equivalent. Medium size enclosures shall include 1-point latch kits or quarter turn slotted latch kits replacing conventional external screw clamps. Large size enclosures shall include 3-point latch kits. Where noted, large enclosures shall include door operated light kits. Enclosure shall include grounding device kit or other means of positively grounding door to enclosure body.

B. NEMA 4X

Enclosures shall be NEMA 4/ NEMA 4X/ NEMA 12 rated, hinged, gasketed, single or double door, with easily released fast-operating clamp assemblies or quarter turn slotted latch kits replacing conventional screw clamps, white interior mounting panel and stainless steel hinge pin. Materials of construction shall be 16 or 14 gauge (depending on size) Type 304 stainless steel or Type 5052 H-32 aluminum. Interior mounting panel shall be steel, finish shall be white enamel. Where noted, enclosures shall include door operated light kits. Metallic enclosures shall include grounding device kit or other means of positively grounding door to enclosure body.

C. NEMA 7

Enclosures shall be NEMA 7 rated suitable for Class 1, Division 1, Group D hazardous locations. Materials of construction shall be copper-free aluminum and shall be either U.L. or F.M. listed and labeled for the application. Covers for small enclosures shall be threaded construction with minimum of 5 threads fully engaged after installation. Larger enclosures shall utilize bolted covers with all bolts torqued per manufacturer's requirements after installation.

2.02 CONDUIT

- A. Conduit shall be of heavy wall type fabricated from mild steel tubing and shall have a hot-dipped galvanized inner and outer coating, with a final coating of zinc chromate.
- B. Explosion proof conduit seals shall be suitable for use in Class I, Division 1, group D hazardous location. Explosion proof conduit seals shall be Crouse-Hinds EYS or EZS Series, Appleton EYS, ESU, or EY Series, Killark ENY, EYS or EY Series, or O-Z Gedney EYA, EY, EZS Series explosion proof sealing fitting.
- C. When in contact with direct earth, the conduit shall be coated with coal tar epoxy.

2.03 WIRE

A. RHW-2 / USE-2 WIRE

Unless otherwise noted on the drawings or specifications, all exterior cable shall be dual-rated type RHW-2/USE-2. Contractor should note that this applies to both direct buried cable and cable in conduit or duct.

Cable shall be 600 Volt rated, sized as indicated on the drawings. Cable shall comply with Underwriters Laboratories Standard U.L. 44 (for Type RHW-2) and U.L. 854 (for Type USE-2) and shall pass the IEEE 383, 70,000 BTU/hr and VW-1 Flame Tests. Cables shall be rated for use at 90°C in both wet and dry locations and be suitable for use in conduit, underground service entrance cable and direct burial applications.

B. THHN/THWN

Unless otherwise noted on the plans or specifications, all interior power wiring installed under this project shall be dual rated type THHN/THWN.

Cable shall be 600 Volt rated, sized as indicated on the drawings. Cable shall comply with Underwriters Laboratories Standard U.L. 83. Cables shall be rated 90°C in dry locations 75°C in wet locations.

2.04 WIRE MARKINGS

- A. All wire markers installed on electrical equipment above grade shall be weatherproof and water resistant. Wire identification labeling, whether factory applied or written in the field, shall utilize an adhesive that does not soften or weaken over time. Sleeve or tubing type labels may be utilized as an alternate. Paper adhesive-backed wire markers will be rejected and replaced at the Contractor's expense. Wire marker labels shall be as manufactured by Brady, or equivalent.

2.05 GROUNDING

- A. Ground rods shall be UL listed, 3/4" diameter by 10' long copper-clad steel with minimum 10 mil copper coating.
- B. All buried connections of ground components shall be via exothermic weld., Erico – Cadweld, Continental Industries – Therm-O-Weld, Hagar – Ultraweld. Clamp or compression grounding connectors below grade are not acceptable.
- C. Equipment grounding conductors shall be installed. Insulation shall be 600 volt, same type as phase conductors, green in color. Use yellow tracer stripes to distinguish different grounding systems.
- D. Ground electrode conductors in contact to earth shall be bare stranded annealed copper, sized as detailed on the drawings.

2.06. FLOATS (Mercury Free)

- A. Float shall be capable of tripping internal switch within two inches of specified elevation. Float housings shall be stainless steel "ball" approximately 5 inches in diameter.
- B. Floats shall be U.S. Filter (Consolidated Electric Company), Model 9G-EF; Anchor Scientific, RotoFloat-SST/NM Type P; or equivalent. Unless specified or indicated otherwise on the drawings, all floats shall be normally open, with contact closing on rising water level.
- C. Where floats are noted to be installed in a Class 1, Division 1, Group D environment wet-well, each float shall additionally be furnished with an intrinsically-safe barrier to provide the necessary interface between the classified and non-classified environments. Intrinsically safe barrier shall be F.M. or other third-party listed device.
- D. Cable length for float shall extend to the pump control panel with out any splices.

## 2.07 WIRING DEVICES

- A. Duplex receptacles with ground fault circuit interrupters (GFCI) shall be provided and installed where noted on drawings. Devices shall comply with U.L. Standard 498 and meet or exceed 2003 requirements for U.L. Standard 943 for Class A Ground Fault Circuit Interrupters. All receptacles shall be rated 20 amp with NEMA 5-20R receptacle configuration. To simplify locating the proper "reset" button after tripping, unless specifically noted on project drawings, DO NOT utilize "feed-thru" feature to protect downstream GFCI outlets. Provide self-protected GFCI receptacles at each required location. Receptacles shall be back and side wire compatible, feed-thru type (whether or not feed-thru feature is utilized on project): Leviton "SmartLock" 8899, or approved equal.
- B. Toggle switches shall be 20A, 120/277 VAC rated, back and side wired type, industrial specification grade. Switches shall be duty rated for 1 HP at 120 VAC., Leviton 1221-2, or approved equal.

## 2.08 ELECTRICAL IDENTIFICATION

- A. Nameplates and legend plates shall be engraved three-layer laminated plastic, black letters on white background. Legends (wording) shall be as detailed on drawings or as directed by Engineer.
- B. All wire markers installed on electrical equipment above grade shall be weatherproof and water resistant. Wire identification labeling, whether factory applied or written in the field, shall utilize an adhesive that does not soften or weaken over time. Sleeve or tubing type labels may be utilized as an alternate. Paper adhesive-backed wire markers will be rejected and replaced at the Contractor's expense. Wire marker labels shall be as manufactured by Brady, or equivalent.
- C. All wire markers installed below grade in manholes, handholes or vaults shall be waterproof. Markers shall be non-corroding plastic clip-on sleeve type construction. Markers shall be permanently factory-printed such that label identification will not deteriorate due to time or contact with water. Wire markers used below grade shall be Brady Clip-Sleeve, or equivalent.

## PART 3-EXECUTION

### 3.01 EQUIPMENT DEMOLITION

- A. The drawings are intended to indicate the scope of work required and not to indicate every box, conduit, or wire that must be removed.
- B. Where walls, ceilings, etc., are indicated as being removed on general plans, the Contractor shall be responsible for the removal of all electrical equipment, devices, fixtures, wiring, systems, etc., from the removed area.
- C. Coordinate scope of work and utility service with the Engineer and all other Contractors. Schedule removal of equipment and electrical service to avoid conflicts.
- D. Prior to beginning any work, the Contractor shall field determine all existing circuits and equipment powered by these circuits in the areas of demolition.

- E. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.
- F. Where possible, remove abandoned wiring and raceway to source of supply. Abandoned conduits which extend to below grade shall be removed to minimum of 1'-0" below grade and capped to prevent entry of water.
- G. Remove exposed abandoned raceway. Cut raceway flush with walls and floors, and patch surfaces. Remove all associated clamps, hangers, supports, etc. associated with raceway removal and patch surfaces.
- H. Disconnect abandoned outlets and toggle switches and remove devices. Remove abandoned outlets and toggle switches if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlet boxes which are not removed.
- I. Disconnect and remove abandoned panelboards and distribution equipment.
- J. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
- K. Disconnect and remove abandoned luminaires. Remove brackets, stems, hangers, and other accessories. Place existing fluorescent ballasts in E.P.A. approved containers for P.C.B.'s and dispose of them in an E.P.A. approved landfill. Provide documentation that P.C.B. disposal requirements have been met.
- L. Repair adjacent construction and finishes damaged during demolition and extension work.
- M. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.

### 3.02 EQUIPMENT MOUNTING

- A. Electrical Contractor shall be responsible for furnishing and setting all anchor bolts required to install Contractor's equipment.
- B. Where concrete mounting pads are required for equipment mounting or where concrete repair work is required, Electrical Contractor shall furnish all concrete and form work necessary to complete the installation.
- C. Enclosures for panelboards, switches or overcurrent devices shall not be used as junction boxes, auxiliary gutters or raceways for conductors feeding through or tapping-off to other switches or overcurrent devices, unless adequate space for this purpose is provided and the equipment is listed for this use.
- D. In order to maintain NEC ratings and classifications of cables, do not combine conduit contents or modify conduit materials of construction unless specifically directed or shown otherwise on project documents.
- E. Install Receptacles at 18" above finished floor and switches 48" above finished floor.

### 3.03 INSTALLATION

- A. Where metal conduit is embedded in concrete, it shall receive one coat, 8 dry mils, Coal Tar Epoxy, or equal. Include any primer coats as may be required.

- Apply coatings in conformance with manufacturer's directions and recommendations. At the Contractor's option, PVC coated galvanized rigid steel conduit may be used in lieu of tar coating.
- B. Conduit size and fill requirements shall comply with appropriate conduit fill tables in Annex C of NEC. It should be noted these are minimum requirements and larger conduit sizes or smaller fill requirements shall be used whenever specified or detailed on drawings.
  - C. Make all joints in underground conduit watertight with approved joint compound. Temporarily plug conduit openings to exclude water, concrete or any foreign materials during construction. Clean conduit runs before pulling in conductors.
  - D. Wire and cable shall be installed using accepted industry methods to prevent damage to conductors and insulation. Installation shall comply with all applicable sections of NEC regarding conduit fill.
  - E. No splices shall be permitted in conduit bodies. All splices shall be made in junction boxes, control panels and cabinets provided for that purpose as detailed or required by need.
  - F. All 120V circuits shall have individual neutral conductors. 120V circuits with "shared" neutral conductor shall not be permitted.
  - G. Minimum wire size shall be #12 unless otherwise noted. Where protected by 15A fuses, control wiring may be #14 AWG.
  - H. All conductors shall be continuous without splices except at locations approved for the purposes of splicing.
  - I. All wire sizes shall be stranded copper except where specifically approved otherwise.
  - J. Inspect wiring for physical damage and proper connection.
  - K. All wire and cable shall be tested for continuity and short circuits prior to energizing circuits. Verify proper phasing, adjust as required.
  - L. Provide wire markers for all wires and terminations. Wire identification shall be unique to wire that is marked or to terminal that wire lands upon. Identification of a run of wire from termination to termination shall be same throughout run.
  - M. Install explosion-proof conduit sealing fittings in conformance with the manufacturer's instructions. Per Article 501 Paragraph 501-5(c)(6) of the NEC, cross-sectional area for conductors installed in a conduit sealing fitting shall not exceed 25%, unless conduit sealing fitting has been specifically approved for a higher percentage of fill.
  - N. Secure nameplates and legend plates to equipment using screws or adhesive.
  - O. Nameplates or legend plates shall be provided for all disconnects, enclosed starters, control panels.
  - P. Provide wire markers for all wires and terminations. By "all", this is intended to include, but not be limited to, all terminations at motors, instrumentation & controls, terminal blocks and strips, etc. Wire identification shall be unique to wire that is marked or to terminal that wire lands upon. Identification of a run of wire from termination to termination shall be same throughout run.

3.04 INSPECTION

- A. All hardware shall be inspected for physical damage and corrected as required prior to installation. Gasketing shall be inspected for proper fit and sealing. Any defective or broken lamps, poles and hardware shall be replaced at no cost to contract.

3.05 TESTING

- A. After wires and cables are in place and connected to devices and equipment, the system shall be tested for short circuits, improper grounds, and other faults. When fault condition is present, the trouble shall be rectified, and then re-tested. Where cable is found defective or damaged, it shall be removed and replaced in entirety, do not field repair. Cost for correction shall be considered incidental to the project.
- B. Unless otherwise recommended by the manufacturer, insulation resistance testing shall meet or exceed the following on 600 Volt equipment utilizing 500 Volt resistance test instrument:
  - Conductors ..... 50 Meg-Ohms
  - Motors 5 Meg-Ohms
  - Power Transformers ..... 5 Meg-Ohms
- C. Contractor shall furnish all tests and shall provide all test equipment, meters, instruments, cable connections or apparatus necessary for performing tests as specified herein. All costs for testing shall be considered incidental to this item and will not be paid for separately.
- D. Examine connections to equipment for proper phase relationships. Rotate phase conductors as necessary in order to correct.
- E. All motors shall be tested for correct direction of rotation. Run tests on all motors and verify that proper overload devices have been installed. Coordinate this task with motor supplier.
- F. All grounding electrode conductors brought in from the ground field shall be tested for satisfactory continuity and by resistance measurement between the electrical equipment ground bus and the ground field. The grounding path shall not exceed 0.010 ohms.

**SECTION 16535 – PUMP CONTROL PANEL**

PART 1-GENERAL

1.01 WORK INCLUDES

- A. The work included in this section is the supply and installation of a pump control panel as detailed herein and as required to provide a complete and operational electrical and control system.
- B. Pump control panel is to be furnished by the pump manufacturer's representative in order to ensure single-source responsibility.



## 1.02 RELATED SECTIONS: RESERVED

## 1.03 REFERENCE TO STANDARDS

- A. ANSI/NFPA 70 - National Electrical Code.
- B. NECA - National Electrical Contractors Association.
- C. NEMA ICS 1 - General Standards for Industrial Control Systems.
- D. NEMA ICS 2 - Standards for Industrial Control Devices, Controllers and Assemblies.
- E. NEMA ICS 6 - Enclosures for Industrial Controls and Systems.
- F. U.L. 508 - Industrial Control Equipment.
- G. Illinois EPA Title 35; Subtitle C; Chapter II; Part 370 - Illinois Recommended Standards for Sewage Works.
- H. Recommended Standards for Wastewater Facilities; Great Lakes Upper Mississippi River - 10 State Standards
- I. ANSI/ISA - RP12.6 Recommended Practice - Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations.
- J. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
- K. ANSI/NEMA 250 - Enclosures for Electrical Equipment.

## 1.04 DELIVERY, STORAGE AND HANDLING

- A. Items shall be stored in original containers, protected from the weather and construction in a warm, dry, indoor area.

## 1.05 SUBMITTALS

- A. Submit product data under provisions of General Requirements.
- B. Submittals shall include cut sheets for the enclosure and for all components included in the control panel. Include schematics and wiring diagrams of the control system.
- C. Manufacturer's Instructions. Indicate application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation and installation of Product.

## 1.06 QUALIFICATIONS

- A. Pumping Control Panel shall be manufactured by a current U.L. 508 listed industrial control panel builder. If required by the Owner's representative, manufacturer shall submit a certification to a minimum experience of five (5) years in manufacture of equipment similar to that specified.
- B. Control panel does require an individualized U.L. label.

## 1.07 MAINTENANCE SERVICE (WARRANTY)

- A. Supplied equipment shall be warranted to be free from defects in material and workmanship for a period of one year from date of substantial completion established by the Owner.

## 1.08 EXTRA MATERIALS (SPARE PARTS)

- A. Provide one box, five (5) minimum quantity, of each type and size of fuse used in the control panel for spares.

## 1.09 OPERATION OF SYSTEM

- A. Pumping Station Control.

Operation of the pumps in the automatic mode shall be controlled by the four float switches mounted in the wet well. The float switches shall be activated at the different water levels as shown on the drawings. Verify levels with Engineer at the time of installation. Wet well float switches are numbered 1 to 3 from lowest level to highest level.

When the water level is rising and float switch #1 (pumps off) is activated it shall enable the pumps to run in the automatic mode of operation. When float switch #2 (lead pump on) is activated it shall turn on the lead pump. If the water level falls while the pump is operating, the pump shall turn off when the water level falls below float switch #1.

If the water level still continues to rise and activates float switch #3 (Lag pump on) it shall turn on the lag pump. If the water level falls while both pumps are operating, the pump both shall turn off when the water level falls below float switch #1.

If the water level still continues to rise and reaches and activates float switch #4 (high water level alarm) the high water level alarm circuit shall be activated.

An alternating relay shall alternate operation of the two pumps each time the water level drops below float switch #1 and the pumps shut off. If one pump fails for any reason the second pump shall start automatically in its place without waiting for the next pump cycle, and an alarm circuit shall be activated.

## PART 2-PRODUCTS

### 2.01 MANUFACTURERS

- A. Pumping Control Panel shall be manufactured by a current U.L. listed U.L. 508 industrial control panel manufacturer such as Indquip Engineering, Inc or equivalent.

### 2.02 EQUIPMENT SPECIFICATION

- A. Pump Control Panel:

The pump control panel enclosure shall be wall mounted, NEMA 12. Enclosure shall have 3 point latching mechanism and handle for easy release. Enclosure shall be

manufactured by Hoffman, APX Enclosures, Hammond or Rittal, and shall be adequately sized to accommodate equipment furnished. Bond all panels and panel doors to ground. Hinges shall not be considered as an adequate grounding path. All hardware shall be corrosion resistant.

The proposed pump control panel shall be supplied by the pump manufacturer's representative in order to ensure single-source responsibility. The panel manufacturer shall be a current Underwriters laboratories listed UL 508 industrial control panel builder and shall show its follow-up service procedure file number on submittals. All devices within the panel shall be UL listed and/or recognized where applicable and shall be mounted and wired in accordance with the most current edition of UL 508 and the NEC. All conduit runs entering or leaving the pump station wet well shall have explosion proof conduit seals suitable for Class I, Division I, Group D environment. All conduits for intrinsically safe wiring shall enter the panel enclosure at the intrinsically safe section of the panel.

All conduit entries into the Pump Control Panel shall have watertight threaded hubs, U.L. listed for the respective NEMA 12 enclosure.

Include a label placed on the inside of the panel door with the name, address, phone number and emergency phone number of the service representative for the pumps and control panel.

A waterproof copy of the master "As Built" wiring diagram shall be laminated in clear plastic and permanently fasted to the inside of the panel door.

The pump control panel enclosure shall be located as shown on the drawings. Include legend plates on inner and outer door labeled "CAUTION DISCONNECT SERVICE BREAKER BEFORE SERVICING". Lettering shall be black or silver on a red background.

The power feeding the pump control panel will be:

120 Volts  
1-Phase  
3-Wire

Contractor shall furnish all equipment, labor, services, submittals, tools and work required to provide a complete and operational Pump Control Panel as shown on the drawings and specified herein.

The pump control panel shall include the following described equipment (installed complete and operational) as well as that shown on the drawings and specified herein.

1. Power Distribution Blocks: Each terminal block shall be provided with a clear plexiglass cover. Terminal block shall be insulated multi-cable connector block

as manufactured by NSI Polaris, Square D class 9080, Type LB, Gould-Shawmut 68000-69000 Series, or Allen-Bradley Bulletin 1492 Power Blocks sized as required for the respective conductors.

All terminal blocks shall be rated 600 volt with amperage ratings in conformance with NEC Table 310-16 using 75°C wire for the respective lug wire range.

2. Intrinsicly Safe Barriers: Provide an intrinsicly safe isolation barrier for each float or any instrumentation device which extends into wet well. Barriers shall be Factory Mutual Listed or U.L. listed for Class I, Division 1, Group D environment. Barriers shall be so located in control panel as to physically isolate intrinsicly safe wiring from other power control cables per Instrument Society of America ISA-RP12.6. All intrinsicly safe wiring shall be conductors with "intrinsicly safe blue colored" insulation only. Conduit entries into the pump control panel for intrinsicly safe systems shall be located at the intrinsicly safe section of the panel enclosure.

Intrinsicly safe barriers (switching amplifiers) shall be Pepperl & Fuchs Model WE77/EX2, or WE77/EX1, Gems Sensors Division Imo Industries Style SAFE-PAK or Diversified Electronics Model Number ISO-120-AFA.

3. Control relays with socket shall be 3PDT or 4PDT with 115 VAC coil and 10 Amp contacts. The control relays shall be as manufactured by Allen-Bradley IDEC, Omron, Potter & Brumfield, or Square D. Include matching plug-in sockets.
4. Alternating Relay: A SPDT alternating relay shall alternate each pump on each successive start command and be complete with a load selector toggle switch which will allow the alternation to be canceled and omit a disabled pump. Alternating relay shall be rated for 120VAC with 10 Amp contacts and shall be Timemark Corp. Model No. 261ST-120V, Diversified Electronics Model ARB-120-ABA, or Solid State Advanced Controls Part No. ARP41S. Include socket.
5. Time Delay Relays: Adjustable time delay relay shall be used as/if required. Time Delay Relays shall be Timemark Corp. Signaline Model 310, 330, 331, 332, or 339 as applicable, or Potter & Brumfield programmable multi-function time delay relay part number CNS-35-76, 120 VAC, 11 pin, or equivalent by Solid State Advanced Controls or Diversified Electronics. Include sockets for each relay. Provide additional time delay relays as required for alarm circuits or other sequencing functions.
6. Terminal blocks for control wiring shall be Heavy Duty 600 volt, tubular clamp style, with accessories as required, as manufactured by Buchanan, Allen-Bradley, or Cutler-Hammer, or Square D. Control panel interior wiring shall be MTW or THW sized as required per NEC minimum #14 AWG. All connections shall be checked for tightness and secured as required.

7. Pilot Lights: All pilot lights shall be "push-to-test" transformer type with LED lamps, complete with one (1) normally open and one (1) normally closed contact block. Pilot lights shall be oil tight and be "full size" (no less than 30 mm in diameter). Pilot lights shall be Allen/Bradley 800T Series, Square D Class 9001, Type K Series, or Cutler-Hammer Cat. No. 10250T221N Series. Pilot light indication shall include, but not be limited to, the following where "X" designates each pump #:
  - A. Power On; white - indicating panel is energized.
  - B. Pump #"X" Thermal Trip; amber - indicating that pump #"X" has failed as a result of a thermal trip.
  - C. Pump #"X" Seal Leak; amber - indicating that pump #"X" has a seal leak failure, (where applicable).
  - D. Off Float; green - indicating the off level float has been activated and the water level in the wet well has reached the "Off" setpoint elevation.
  - E. Lead Float; green - indicating the lead pump float has been activated and the water level in the wet well is at the "Lead Pump Start" setpoint elevation.
  - F. Lag Float; green - indicating the lag pump float has been activated and the water level in the wet well is at the "Lag Pump Start" setpoint elevation.
  - G. High Water Level; amber - indicating the high water level float has been activated and the water level in the wet well is at the "High Water Level" setpoint elevation.
  - H. Legend plates shall be provided for all pilot lights. Pilot lights shall be arranged on the panel such that the user shall be able to clearly distinguish between different operation and failure modes.
8. Legend Plates: Legend plates shall be required for all Starters, circuit breakers, control panels, and disconnects. Legend plates shall be provided to identify the equipment controlled and the function of each pushbutton, indicating light, pilot light, selector switch and device. Legend plates shall be weatherproof and abrasion resistant phenolic material. Lettering shall be black on white background, unless otherwise noted.
9. Verify availability of thermal trip option and seal leak option with the respective pump manufacturer. Coordinate and furnish all additional pump protection components required by pump manufacturer for warranty purposes.
10. Pump Thermal Trip: (For motors equipped with motor winding thermostats). A thermal trip on the motor will cause immediate shutdown and activate the respective thermal trip condition pilot light and alarm light. Pump and motor thermal trip shall be wired to provide automatic reset and restarting of the pump motor. Pilot light and alarm light shall employ manual reset. Provide interposing relays as required.

11. Fusing: Provide fuse protection as indicated on the drawings and specified herein for control circuitry. Fuses shall be rated 600VAC and shall be Bussman Class J or FNQ-R series fuses, Gould-Shawmut Class J or Class R fuses, or Littlefuse Class J or Class R fuses, sized as required and/or as indicated on the drawings with fuse blocks, with box lug terminals, sized as required. Include hardware for mounting. Provide one box (5 minimum quantity) of each type and size of fuse, upon completion of the job, for use as spares.
12. Circuit breakers for 120 VAC power supplies: Single pole din rail circuit breaker shall be Allen Bradley Cat Nu.: 1492-CB1G, or equal. Amps shall be as required per load.
13. Pushbuttons: Pushbuttons shall be rated NEMA 4/13, watertight/oiltight, momentary contact normally open type or normally closed (where applicable) type with 10 amp minimum contact rating at 120VAC, Allen-Bradley 800T Series, Square D Class 9001, Type K, or Cutler-Hammer Cat. No. 10250 Series.
14. Alarm System: Provide output dry contacts to be sent to Existing Rayco Chatter box for the following alarm conditions.
  - A. Pump motor thermal trip.
  - B. Pump motor seal leak (where applicable).
  - C. High water level.

Include all necessary control relays, terminal blocks, wiring, etc. to provide the alarms functions noted above with a spare normally open contact output for each alarm function. One general alarm contact shall go to the Alarm Dialer.
15. Grounding Bar: Provide a copper grounding bar mounted and bonded inside the panel enclosure, adequately sized to accommodate all ground conductors to or from the pump control panel.
16. Alternating Relay: A SPDT alternating relay shall alternate each pump on each successive start command and be complete with a load selector toggle switch which will allow the alternation to be canceled and omit a disabled pump. Alternating relay shall be rated for 120VAC with 10 Amp contacts and shall be Timemark Corp. Model No. 261ST-120V, Diversified Electronics Model ARB-120-ABA, or Solid State Advanced Controls Part No. ARP41S. Include socket.
17. Alarm Dialer: The alarm dialer is existing and shall remain, Rayco Chatterbox Auto dialer.
18. Main Breaker & Disconnect Mechanism: Main circuit breaker shall be 120 VAC rated, single pole, 20 Amps thermal-magnetic circuit breaker.
19. Control circuit shall be connected so that a power outage does not necessitate manual re-start of the system.

## PART 3-EXECUTION

### 3.01 INSTALLATION

#### A. Pump Control Panel

1. Control panel shall be installed per manufacturer's recommendations as detailed on the drawings and as specified herein.
2. Conduits with intrinsically safe wiring, including float switch cables, shall terminate in the control panel at the intrinsically safe wiring section. Non-intrinsically wiring including, but not limited to, power feeder conductors from the service entrance circuit breaker, branch circuit conductors, and pump motor cables shall not enter the control panel at the intrinsically safe wiring section and shall maintain a minimum separation distance inside the control panel from the intrinsically safe conductors as required by NEC 504 and ANSI/ISA RP12.6.
3. Install explosion proof conduit seals as detailed on the drawings and in conformance with Manufacturer's requirements. Contact the respective conduit seal off manufacturer if assistance is required for direction of installing the packing fiber to form a dam and pouring the sealing compound.

### 3.02 TESTING

#### A. Pump Control Panel

Supplier shall provide services of the pump control panel manufacturer's representative for the purpose of inspection, check-out, testing, start-up, instruction of user personnel, and any other required services to provide a complete and operational system. All tests shall be conducted in the presence of the Engineer. Contractor shall provide water as/if required to test pumps under load. Contractor shall furnish 3 copies of test results to Engineer. Supplier shall also furnish 3 copies of Operation and Maintenance Manuals, for operator personnel use, to the Engineer.

Start-up procedure and tests shall include, but not be limited to, the following as well as other tests and requirements specified herein.

- a. Check float switches and corresponding circuitry for proper operation.
- b. Inspect control panel for correct terminal connections and tightness, correct and tighten as required.
- c. Verify a label is provided on the pump control panel with the name, address, phone number, and emergency phone number of the service representative.
- d. Verify proper operation of all pilot lights and alarm lights.
- e. Instruct user personnel about the operation of the control panel and components; indicating items for routine maintenance check, operation modes, failure modes, alarm conditions, etc.
- f. Conduct any additional tests as required by the manufacturer.

- g. Verify tests and requirements are met as specified in Section 16010 - General Electrical Requirements.
- h. Verify operation of existing remote annunciator (Chatter Box) for various failure modes and that the appropriate individuals are contacted.

END OF SECTION 16535.

**ERRATA FOR THE 2007 STANDARD SPECIFICATIONS (BDE)**

Effective: January 1, 2007

Revised: August 1, 2007

- Page 60 Article 109.07(a). In the second line of the first paragraph change “amount” to “quantity”.
- Page 154 Article 312.05. In the second line of the fifth paragraph change “180 °C” to “175 °C”.
- Page 207 Article 406.14. In the second line of the second paragraph change “MIXTURE FOR CRACKS, JOINTS, AND FLANGEWAYS, of the mixture composition specified;” to “MIXTURE FOR CRACKS, JOINTS, AND FLANGEWAYS;”.
- Page 237 Article 420.18. In the second line of the first paragraph change “October 15” to “November 1”.
- Page 345 Article 505.08(l). In the third line of the first paragraph change “1/8 mm” to “1/8 in.”.
- Page 345 Article 505.08(l). In the nineteenth line of the first paragraph change “is” to “in”.
- Page 379 Article 512.15. In the first and sixth lines of the third paragraph change “50 percent” to “ten percent”.
- Page 383 Article 516.04(b)(1). In the fifth line of the first paragraph change “drillingpouring” to “pouring”.
- Page 390 Article 520.02(h). Change “1027.021” to “1027.01”.
- Page 398 Article 540.07(b). Add the following two paragraphs after the third paragraph:  
“Excavation in rock will be measured for payment according to Article 502.12.  
Removal and disposal of unstable and/or unsuitable material below plan bedding grade will be measured for payment according to Article 202.07.”
- Page 398 Article 540.08. Add the following two paragraphs after the fifth paragraph:  
“Excavation in rock will be paid for according to Article 502.13.



Removal and disposal of unstable and/or unsuitable material below plan bedding grade will be paid for according to Article 202.08.”

- Page 435 Article 542.04(b). Delete the last sentence of the last paragraph.
- Page 465 Article 551.06. In the second line of the first paragraph change “or” to “and/or”.
- Page 585 Article 701.19(a). Add “701400” to the second line of the first paragraph.
- Page 586 Article 701.19(c). Delete “701400” from the second line of the first paragraph.
- Page 586 Article 701.19. Add the following subparagraph to this Article:  
“(f) Removal of existing pavement markings and raised reflective pavement markers will be measured for payment according to Article 783.05.”
- Page 587 Article 701.20(b). Delete “TRAFFIC CONTROL AND PROTECTION STANDARD 701400;” from the first paragraph.
- Page 588 Article 701.20. Add the following subparagraph to this Article.  
“(j) Removal of existing pavement markings and raised reflective pavement markers will be paid for according to Article 783.06.”
- Page 639 Article 805.04. In the first line of the second paragraph change “changes” to “charges”.
- Page 762 Article 1020.04. In Table 1 Classes of Portland Cement Concrete and Mix Design Criteria, add to the minimum cement factor for Class PC Concrete “5.65 (TY III)”, and add to the maximum cement factor for Class PC Concrete “7.05 (TY III)”.
- Page 765 Article 1020.04. In Table 1 Classes of Portland Cement Concrete and Mix Design Criteria (metric), add to the minimum cement factor for Class PC Concrete “335 (TY III)”, and add to the maximum cement factor for Class PC Concrete “418 (TY III)”.
- Page 800 Article 1030.05(a)(12). Revise “Dust Collection Factor” to “Dust Correction Factor”.
- Page 800 Article 1030.05(a)(14). Revise the first occurrence of Article 1030.05(a)(14) to Article 1030.05(a)(13).
- Page 800 Article 1030.05(a). Add to the list of QC/QA documents “(16) Calibration of Equipment for Asphalt Content Determination”.
- Page 809 Article 1030.05. Revise the subparagraph “(a) Quality Assurance by the Engineer.” to read “(e) Quality Assurance by the Engineer.”.

- Page 889 Article 1069.02(a)(2). In the third line of the first paragraph add “stainless steel” in front of “screws”.
- Page 889 Article 1069.02(b). Delete the third paragraph.
- Page 890 Article 1069.02(c). Delete subparagraph (c).
- Page 946 Article 1080.03(a)(1). In the third line of the first paragraph revise “(300 µm)” to “(600 µm)”.
- Page 963 Article 1083.02(b). In the second line of the first paragraph revise “ASTM D 4894” to “ASTM D 4895”.
- Page 1076 In the Index of Pay Items delete the pay item “BITUMINOUS SURFACE REMOVAL – BUTT JOINT”.

### **LEGAL REQUIREMENTS TO BE OBSERVED (BDE)**

Effective: August 1, 2007

Revise Article 107.01 of the Standard Specifications to read:

**“107.01 Legal Requirements to be Observed.** The Contractor warrants that it is, and that it shall keep fully informed of all legal requirements found in Federal, State, and local laws, ordinances, rules and regulations, and all orders, decrees, notices of violation or enforcement actions issued by any judicial or administrative body, board, agency, or tribunal having any jurisdiction or authority, that in any manner affect those engaged or employed to perform the work of the contract, or that affect the performance and conduct of the work of the contract. Unless otherwise provided in the contract, the Contractor shall obtain and keep current all permits and licenses, and give all notices required for the performance of the work of the contract that may be required by all such laws, ordinances, rules, regulations, orders, decrees, notices, and actions. The Contractor shall observe and obey all such laws, ordinances, rules, regulations, orders, decrees, notices, and actions; and shall indemnify and save harmless the State, the Department and all of its officers, agents, employees, and servants against any claim, liability, fine, or monetary assessment arising from the breach of this article or the violation of any such law, ordinance, rule, regulation, order, decree, notice or action, whether by the Contractor, a subcontractor, a supplier of material or service, others engaged by the Contractor, or the employees of any of them. Except as expressly mandated by law or regulation, or otherwise provided in the contract, the Department shall not be responsible for monitoring the Contractor’s compliance with any law, ordinance, rule, regulation, order, decree, notice, or action. However, on noticing any violation of a legal requirement, the Department will notify the Contractor and the agency responsible for enforcement. The Department will cooperate with other agencies in their efforts to enforce legal requirements and may assist any such agency’s effort to obtain Contractor compliance. The Contractor shall comply fully with any and all requests made by the Department within the time specified. The obligations of the Contractor under this article shall not be released or diminished by the issuance of any notice of violation or enforcement action to or in the name of the Department.”

## **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.

**WORKING DAYS (BDE)**

Effective: January 1, 2002

The Contractor shall complete the work within 20 working days.

**EQUIPMENT RENTAL RATES (BDE)**

Effective: August 2, 2007

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 rate from the “Equipment Watch Rental Rate Blue Book” (Blue Book). The applicable hourly rate is defined as the FHWA hourly rate, from the time period the force account work begins, adjusted for both the model year of the equipment and the Illinois region. 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 according to:  $0.5 \times (\text{AHR} - \text{EOC})$ .

Where: AHR = Applicable Hourly Rate (defined above)  
EOC = Estimated Operating Costs per hour (from the Blue Book)

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.”

## ILLINOIS DEPARTMENT OF LABOR

### PREVAILING WAGES FOR IROQUOIS COUNTY EFFECTIVE JULY 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.

# Iroquois County Prevailing Wage for July 2007

Trade Name	RG	TYP	C	Base	FRMAN	*M-F>8	OSA	OSH	H/W	Pensn	Vac	Trng
ASBESTOS ABT-GEN		BLD		26.330	27.330	1.5	1.5	2.0	6.540	8.070	0.000	0.750
ASBESTOS ABT-GEN		HWY		26.940	27.940	1.5	1.5	2.0	6.540	8.070	0.000	0.750
ASBESTOS ABT-MEC		BLD		23.300	24.800	1.5	1.5	2.0	7.860	4.910	0.000	0.000
BOILERMAKER		BLD		30.970	33.970	2.0	2.0	2.0	8.270	7.740	0.000	0.300
BRICK MASON		BLD		33.010	35.010	1.5	1.5	2.0	5.900	8.750	0.000	0.460
CARPENTER		BLD		30.900	32.400	1.5	1.5	2.0	5.860	7.950	0.000	0.490
CARPENTER		HWY		29.580	31.330	1.5	1.5	2.0	4.950	7.200	0.000	0.490
CEMENT MASON		BLD		33.010	35.010	1.5	1.5	2.0	5.900	8.750	0.000	0.460
CERAMIC TILE FNSHER		BLD		29.710	0.000	1.5	1.5	2.0	5.900	8.750	0.000	0.460
COMMUNICATION TECH		BLD		30.000	31.500	1.5	1.5	2.0	8.770	8.900	0.000	0.300
ELECTRICIAN	NE	BLD		34.950	38.100	1.5	1.5	2.0	9.170	11.79	0.000	0.350
ELECTRICIAN	SW	BLD		32.010	34.010	1.5	1.5	2.0	5.150	5.410	0.000	0.480
ELEVATOR CONSTRUCTOR		BLD		32.885	37.000	2.0	2.0	2.0	7.775	5.090	1.970	0.000
GLAZIER		BLD		27.020	27.770	1.5	1.5	2.0	6.400	5.750	0.000	0.500
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		30.000	33.000	2.0	2.0	2.0	7.690	10.46	0.000	0.550
LABORER		BLD		25.330	26.330	1.5	1.5	2.0	6.540	8.070	0.000	0.600
LABORER		HWY		25.940	26.940	1.5	1.5	2.0	6.540	8.070	0.000	0.600
LABORER, SKILLED		BLD		25.630	26.630	1.5	1.5	2.0	6.540	8.070	0.000	0.600
LABORER, SKILLED		HWY		25.940	26.940	1.5	1.5	2.0	6.540	8.070	0.000	0.600
LATHER		BLD		30.900	32.400	1.5	1.5	2.0	5.860	7.950	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		BLD		29.710	0.000	1.5	1.5	2.0	5.900	8.750	0.000	0.460
MARBLE MASON		BLD		33.010	35.010	1.5	1.5	2.0	5.900	8.750	0.000	0.460
MILLWRIGHT		BLD		30.900	32.400	1.5	1.5	2.0	5.860	7.950	0.000	0.490
OPERATING ENGINEER	ALL	1		28.650	0.000	1.5	1.5	2.0	5.200	6.750	0.000	0.650
OPERATING ENGINEER	ALL	2		18.600	0.000	1.5	1.5	2.0	5.200	6.750	0.000	0.650
PAINTER		ALL		27.350	28.350	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		BLD		30.900	32.400	1.5	1.5	2.0	5.860	7.950	0.000	0.490
PIPEFITTER		BLD		36.060	38.060	1.5	1.5	2.0	7.050	8.500	0.000	0.760
PLASTERER		BLD		33.010	35.010	1.5	1.5	2.0	5.900	8.750	0.000	0.460
PLUMBER		BLD		38.610	40.610	1.5	1.5	2.0	8.000	8.500	0.000	0.760
ROOFER		BLD		33.650	35.650	1.5	1.5	2.0	6.460	3.310	0.000	0.330
SHEETMETAL WORKER		BLD		36.510	38.510	1.5	1.5	2.0	6.890	8.020	0.000	0.640
SIGN HANGER		BLD		30.900	32.400	1.5	1.5	2.0	5.860	7.950	0.000	0.490
SPRINKLER FITTER		BLD		31.240	33.240	1.5	1.5	2.0	6.500	5.350	0.000	0.250
TERRAZZO FINISHER		BLD		29.710	0.000	1.5	1.5	2.0	5.900	8.750	0.000	0.460
TERRAZZO MASON		BLD		33.010	35.010	1.5	1.5	2.0	5.900	8.750	0.000	0.460
TILE MASON		BLD		33.010	35.010	1.5	1.5	2.0	5.900	8.750	0.000	0.460
TRUCK DRIVER	NW	ALL	1	28.870	29.420	1.5	1.5	2.0	6.690	4.150	0.000	0.000
TRUCK DRIVER	NW	ALL	2	29.070	29.420	1.5	1.5	2.0	6.690	4.150	0.000	0.000
TRUCK DRIVER	NW	ALL	3	29.270	29.420	1.5	1.5	2.0	6.690	4.150	0.000	0.000
TRUCK DRIVER	NW	ALL	4	29.420	29.420	1.5	1.5	2.0	6.690	4.150	0.000	0.000
TRUCK DRIVER	SE	ALL	1	26.655	0.000	1.5	1.5	2.0	7.900	3.550	0.000	0.000
TRUCK DRIVER	SE	ALL	2	27.055	0.000	1.5	1.5	2.0	7.900	3.550	0.000	0.000
TRUCK DRIVER	SE	ALL	3	27.255	0.000	1.5	1.5	2.0	7.900	3.550	0.000	0.000
TRUCK DRIVER	SE	ALL	4	27.505	0.000	1.5	1.5	2.0	7.900	3.550	0.000	0.000
TRUCK DRIVER	SE	ALL	5	28.255	0.000	1.5	1.5	2.0	7.900	3.550	0.000	0.000
TUCKPONTER		BLD		33.010	35.010	1.5	1.5	2.0	5.900	8.750	0.000	0.460

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

### IROQUOIS COUNTY

ELECTRICIANS (SOUTHWEST) - Townships of Artesia, Loda and Pigeon Grove.

TRUCK DRIVER (SOUTHEAST) - Pigeon Grove, Fountain Creek, Lovejoy, Prairie Green, Milford and Stockland Townships.

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, MARBLE FINISHER, AND TERRAZZO FINISHER

The laying, setting and finishing of all tile where used for floors, walls, ceilings, walks, promenade roofs, stair treads, stair risers, facings, hearths, fireplaces, and decorative inserts, together with any marble plinths, thresholds or window stools used in connection with any tile work; also to prepare and set all concrete, cement, brickwork, or other foundation or materials that may be required to properly set and complete such work; the setting or bedding of all tiling, stone, marble, composition, glass, mosaic, or other materials forming the facing, hearth or fireplace of a mantle, or the mantle complete, together with the setting of all cement, brickwork, or other material required in connection with the above work; also the slabbing and fabrication of tile mantels, counters and tile panels of every description and the erection and installation of same and the building, shaping, forming, construction, or repairing of all fireplace work, whether in connection with the mantle hearth facing or not, and the setting and preparing of all material, such as cement, plaster, mortar, brickwork, iron work or other materials necessary for

the proper and safe construction and completion of such work. The term "Ceramic" is used for naming the classification only and is in no way a limitation of the product handled. Ceramic takes into consideration most hard tiles.

#### 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.

#### LABORER, SKILLED - BUILDING

The skilled laborer building (BLD) classification shall encompass the following types of work, irrespective of the site of the work: caisson workers plus depth, gunnite nozzle men, lead man on sewer work, welders, cutters, burners and torchmen, chain saw operators, paving breaker, jackhammer and drill operators, layout man and/or drainage tile layer, steel form setters - street and highway, air tamping hammerman, signal man on crane, concrete saw operator, screenman on asphalt pavers, front end man on chip spreader, laborers tending masons with hot materials or where foreign materials are used, multiple concrete duct-leadman, luteman, asphalt raker, curb asphalt machine operator, ready mix scalemen (permanent, portable or temporary plant), laborers handling masterplate or similar materials, laser beam operator, concrete burning machine operator, coring machine operator, plaster tenders, underpinning and shoring of buildings, material selector when working with fire-brick or castable material, fire watch, signaling of all power equipment, and tree topper or trimmer when in connection with construction.

#### LABORER, SKILLED - HIGHWAY

The skilled laborer heavy and highway (HWY) classification shall encompass the following types of work, irrespective of the site of the work: handling of materials treated with oil, creosote, asphalt and/or any foreign materials harmful to skin or clothing, track laborers, chloride handlers, the unloading and loading with steel workers and re-bars, concrete workers (wet), tunnel helpers in free air, batch dumpers, mason tenders, kettle and tar men, plastic installers, scaffold workers, motorized buggies or motorized unit used for wet concrete or handling of building materials, laborers with de-watering systems, sewer workers plus depth, rod and chainmen, vibrator operators, mortar mixer operators, cement silica, clay, fly ash, lime and plasters, handlers (bulk or bag), cofferdam workers plus depth, on concrete paving, placing, cutting and tying or reinforcing, deck hand, dredge hand shore laborers, bankmen on floating plant, asphalt workers with machine, and layers, grade checker, power tools, stripping of all concrete forms excluding paving forms, dumpmen and spotters, when necessary, caisson workers plus depth, gunnite nozzle men, welders, cutters, burners and torchmen, chain saw operators, paving breaker, jackhammer and drill operators, layout man and/or drainage tile layer, steel form setters - street and highway, air tamping hammerman, signal man on crane, concrete saw operator, screedman on asphalt pavers, front end man on chip spreader, multiple concrete duct, luteman, asphalt raker, curb asphalt machine operator, ready mix scalemen (portable or temporary plant), laser beam operator, concrete burning machine operator, and coring machine operator.

#### TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION - SOUTHEAST

Class 1. Drivers on 2 axle trucks hauling less than 9 ton. Air compressor and welding machines and brooms, including those pulled by separate units, truck driver helpers, warehouse employees, mechanic helpers, greasers and tiremen, pickup trucks when hauling materials, tools, or workers to and from and on-the-job site, and fork lifts up to 6,000 lb. capacity.

Class 2. Two or three axle trucks hauling more than 9 ton but hauling less than 16 ton. A-frame winch trucks, hydrolift trucks, vactor trucks or similar equipment when used for transportation purposes. Fork lifts over 6,000 lb. capacity, winch trucks, four axle combination units, and ticket writers.

Class 3. Two, three or four axle trucks hauling 16 ton or more. Drivers on water pulls, articulated dump trucks, mechanics and working forepersons, and dispatchers. Five axle or more combination units.

Class 4. Low Boy and Oil Distributors.

Class 5. Drivers who require special protective clothing while employed on hazardous waste work.

#### TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION - NORTHWEST

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 Shreader; 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, HEAVY AND HIGHWAY CONSTRUCTION

Class 1. Power Cranes, Draglines, Derricks, Shovels, Gradalls, Mechanics, Tractor Highlift, Tournadozer, Concrete Mixers with Skip, Tournamixer, Two Drum Machine, One Drum Hoist with Tower or Boom,

Cableways, Tower Machines, Motor Patrol, Boom Tractor, Boom or Winch Truck, Winch or Hydraulic Boom Truck, Truck Crane, Tournapull, Tractor Operating Scoops, Bulldozer, Push Tractor, Asphalt Planer, Finishing Machine on Asphalt, Large Rollers on Earth, Rollers on Asphalt Mix, Ross Carrier or similar Machine, Gravel Processing Machine, Asphalt Plant Engineer, Paver Operator, Dredging Equipment, or Dredge Engineer, or Dredge Operator, Central Mix Plant Engineer, CMI or similar type machine, Concrete Pump, Truck or Skid Mounted, Tower Crane, Engineer or Rock Crusher Plant, Concrete Plant Engineer, Ditching Machine with dual attachment, Tractor Mounted Loaders, Cherry Picker, Hydro Crane, Standard or Dinkey Locomotives, Scoopmobiles, Euclid Loader, Soil Cement Machine, Back Filler, Elevating Machine, Power Blade, Drilling Machine, including Well Testing, Caissons, Shaft or any similar type drilling machines, Motor Driven Paint Machine, Pipe Cleaning Machine, Pipe Wrapping Machine, Pipe Bending Machine, Apsco Paver, Boring Machine, (Head Equipment Greaser), Barber-Greene Loaders, Formless Paver, (Well Point System), Concrete Spreader, Hydra Ax, Span Saw, Marine Scoops, Brush Mulcher, Brush Burner, Mesh Placer, Tree Mover, Helicopter Crew (3), Piledriver-Skid or Crawler, Stump Remover, Root Rake, Tug Boat Operator, Refrigerating Machine, Freezing Operator, Chair Cart-Self-Propelled, Hydra Seeder, Straw Blower, Power Sub Grader, Bull Float, Finishing Machine, Self-Propelled Pavement Breaker, Lull (or similar type Machine), Two Air Compressors, Compressors hooked in Manifold, Overhead Crane, Chip Spreader, Mud Cat, Sull-Air, Fork Lifts (except when used for landscaping work), Soil Stabilizer (Seaman Tiller, Bo Mag, Rago Gator, and similar types of equipment), Tube Float, Spray Machine, Curing Machine, Concrete or Asphalt Milling Machine, Snooper Truck-Operator, Backhoe, Farm Tractors (with attachments), 4 Point Lift System (Power Lift or similar type), Skid-Steer (Bob Cat or similar type), Wrecking Shears, Water Blaster.

Class 2. Concrete Mixers without Skips, Rock Crusher, Ditching Machine under 6', Curbing Machine, One Drum Machines without Tower or Boom, Air Tugger, Self-Propelled Concrete Saw, Machine Mounted Post Hole Digger, two to four Generators, Water Pumps or Welding Machines, within 400 feet, Air Compressor 600 cu. ft. and under, Rollers on Aggregate and Seal Coat Surfaces, Fork Lift (when used for landscaping work), Concrete and Blacktop Curb Machine, One Water Pump, Oilers, Air Valves or Steam Valves, One Welding Machine, Truck Jack, Mud Jack, Gunnite Machine, House Elevators when used for hoisting material, Engine Tenders, Fireman, Wagon Drill, Flex Plane, Conveyor, Siphons and Pulsometer, Switchman, Fireman on Paint Pots, Fireman on Asphalt Plants, Distributor Operator on Trucks, Tampers, Self-Propelled Power Broom, Striping Machine (motor driven), Form Tamper, Bulk Cement Plant, Equipment Greaser, Deck Hands, Truck Crane Oiler-Driver, Cement Blimps, Form Grader, Temporary Heat, Throttle Valve, Super Sucker (and similar type of equipment).

#### 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.