



**NOTICE TO BIDDERS,  
SPECIFICATIONS, CONTRACT  
AND CONTRACT BOND**

**FOR  
HIGHWAY MAINTENANCE  
County of Cook, Illinois**

APPROVED BY THE BOARD OF  
COOK COUNTY COMMISSIONERS

NOV 16 2016

**John Yonan, P.E.**  
Superintendent  
Cook County Department of  
Transportation and Highways

**Toni Preckwinkle**  
Cook County Board President

**Shannon E. Andrews**  
Chief Procurement Officer

**Letting: September 2, 2016**

**Electrical and Mechanical Item Maintenance Various Locations**

**Section 17-8EMIM-00-GM**

**Route: Various Locations**

**COOK COUNTY PROCUREMENT CONTRACT NO.: 1628-15554**

**NOTICE TO PROSPECTIVE BIDDERS: BIDDERS MUST RETURN THE ENTIRE BID TO:**

Cook County Building  
Office of the Chief Procurement Officer  
118 N. Clark Street, Room 1018  
Chicago, Illinois 60602

**No Later than September 2, 2016 at 10:00 a.m. CST**

Submit 1 Original and 2 Copies of Proposal

The Specifications can be downloaded at <http://legacy.purchasing/public/index.php> (follow online instructions to register, if you have not already).

**Pre-Bid Meeting: August 16, 2016, at 1:30 p.m. CST**  
Cook County Department of Transportation and Highways  
69 W. Washington Street, Suite 2260  
Chicago, Illinois 60602

**All questions are due on August 19, 2016 no later than 3:00pm CST**  
Send all questions via e-mails to: Cho Ng, Assistant Procurement Officer  
Phone: 312-603-2391 Email: [cho.ng@cookcountyil.gov](mailto:cho.ng@cookcountyil.gov)

**Bid Submitted by:**

Bid Bond is included

A Cashier's Check or a Certified Check is Included

Name Meade, Inc.

Phone No. 708-588-2594

Email Address: mkk@meade100.com

Address 6850 W. 62nd Street

City Chicago

State IL

Zip Code 60525

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INSTRUCTIONS TO BIDDERSIB-01 DEFINITIONS

- A. **BIDDER** shall mean any Person who submits a Bid.
- B. **BID COVER PAGE** shall mean the general description of the required services, goods, equipment, or supplies, the contact information of the assigned Contract Negotiator or Specification Engineer in the Office of the Chief Procurement Officer, and shall include the date, time and place for both the submission of Bid Proposals and the opening of the Bid Proposals.
- C. **BID or BID PROPOSAL** shall mean a response to the Bid Notice containing all Bid Documents and any other documents or information the Bidder is required to provide.
- D. **BID DOCUMENTS** means the documents, specifications, forms and other information necessary and required for a Bid.
- E. **BID NOTICE** means the notice from the CPO regarding a Procurement which shall include: a general description of the Procurement; information necessary to obtain the Bid Documents; and the date, time and place for both the submission of Bids and the opening of the Bids.
- F. **CONTRACT** shall mean any written document to make Procurements by or on behalf of Cook County.
- G. **CONTRACT DOCUMENTS** shall mean collectively the Bid Cover Page, legal advertisement, Bid Notice, Bid Documents, Bid, Economic Disclosure Statement, MBE/WBE Utilization Plan and any other document required by the Chief Procurement Officer. The above documents shall be considered as one integrated document setting forth the obligations of the parties.
- H. **CONTRACTOR** shall mean the Person that enters into a Contract with the County.
- I. **COUNTY** shall mean the County of Cook, a body politic and corporate of the State of Illinois.
- J. **DIRECTOR** shall mean the person or persons authorized by the County to act in connection with this Contract. Such authorization shall not include any power to change the scope of the Contract or to obligate the County to pay additional sums beyond the amount of the Contract awarded by the Cook County Board of Commissioners or the Chief Procurement Officer.
- K. **CHIEF PROCUREMENT OFFICER or CPO** shall mean the Chief Procurement Officer of the County of Cook whose duties and responsibilities are more particularly described in the Cook County Procurement Code, Chapter 34, Article IV, Division I.
- L. **OCPO** shall mean the Office of the Chief Procurement Officer of Cook County.
- M. **PERSON** shall mean any individual, corporation, partnership, Joint Venture, trust association, Limited Liability Company, sole proprietorship or legal entity.
- N. **PROCUREMENT** shall mean obtaining supplies, equipment, goods or services of any kind.
- O. **SPECIFICATIONS** shall mean the description of the services, work, goods, equipment, personnel, volume and use statistics and all requirements for the scope of work set forth in the Contract Documents.
- P. **USING AGENCY** shall mean the departments or agencies within Cook County government including elected officials.

**IB-02 PREPARATION OF EDS AND EXECUTION DOCUMENT**

- A. The Bidder shall prepare one (1) copy of its Bid Proposal on the proposal forms within the Contract Documents and three (3) Economic Disclosure Statement and Execution Documents ("EDS"), all with original signatures. Unless otherwise stated, all blank spaces on the proposal forms shall be fully completed. Bidder bears all responsibility for error or omissions in the submission of the Bid Proposal. Bid Proposals and EDS which are not properly signed may be rejected.
- B. If the Bidder is a corporation, the President and Secretary must execute the EDS. In the event that this Bid Proposal is executed by someone other than the President, attach hereto a certified copy of that section of the Corporate By-Laws, resolution or other authorization by the Corporation, satisfactory to the County that permits the person to execute Bid Proposal for said corporation. If the corporation is not incorporated in the State of Illinois, a copy of the Certificate of Good Standing from the state of incorporation must be submitted with the EDS.
- C. If the Bidder is a partnership or joint venture, all partners or joint venturers must execute the EDS, unless one partner or joint venture has been authorized to sign for the partnership or joint venture, in which case, the partnership agreement, resolution or evidence of such authority, satisfactory to the County, must be submitted. If the Bidder is a joint venture, attach a copy of the joint venture agreement.
- D. If the Bidder is a member-managed LLC all members must execute the EDS, unless otherwise provided in the operating agreement, resolution or other corporate documents. If the Bidder is a manager-managed LLC, the manager(s) must execute the Bid Proposal. The Bidder must attach either a certified copy of the operating agreement, resolution or other authorization, satisfactory to the County, demonstrating such person has the authority to execute the EDS on behalf of the LLC. If the LLC is not registered in the State of Illinois, a copy of a current Certificate of Good Standing from the state of incorporation must be submitted with the EDS.
- E. If the Bidder is a Sole Proprietorship, the sole proprietor must execute the EDS.
- F. A "Partnership" "Joint Venture" or "Sole Proprietorship" operating under an Assumed Name must be registered with the Illinois county in which it is located, as provided in 805 ILCS 405 (2012) and documentation evidencing registration must be submitted with the EDS.

**IB-03 SITE INSPECTION CERTIFICATE**

The Bidder shall inspect the job-site to become familiar with the conditions related to the work or services and the requirements set forth in the Bid Documents. Failure of the Bidder to visit the Site shall not relieve or alter the Bidder's responsibility for completing the work or services as required by the Contract Documents.

When required as mandatory in the Contract Documents, the Bidder shall visit the job-site and shall carefully examine and become familiar with all conditions which may in any way affect the performance of the Contract and shall submit certification of such inspection along with the Bid Proposal. The dates and conditions of the site inspection are determined by the County. If the Contract Documents provide that inspection of the site is mandatory, a Bidder's failure to attend all of the required site inspections shall render the Bid Proposal non-responsive.

**IB-04 BID DEPOSIT**

When required in the Contract Documents, the Bid Proposal shall be accompanied by, cashier's check, certified check, bank draft or surety bond in the amount shown in the legal advertisement or as may be prescribed in these Contract Documents. A certified or cashier's check shall be drawn on a responsible bank doing business in the United States and shall be made payable to the order of the County of Cook. The surety issuing the bond must have a general rating of "A", and shall be a Class VII or higher in the financial size category as defined by Best Company Inc., Moody's Investor Services, Standard & Poor's Corporation or similar rating agency. The surety must be licensed by the State of Illinois Department of Insurance and be listed in the current U.S. Treasury Circular 570 when federal funds are being used. Failure to submit the bid deposit shall constitute a non-responsive Bid Proposal and such Bid Proposal shall be rejected.

**IB-04 BID DEPOSIT (con't.)**

The Bidder hereby agrees that the bid deposit shall be forfeited to the County as liquidated damages and not as penalty in the event Bidder fails to comply with IB-15 and IB-17, or otherwise fails or refuses to honor the Bid Proposal upon award of the Contract by the County.

The bid deposit of all bidders will be returned, with the exception of the apparent lowest responsive and responsible Bidder, after the County has awarded the Contract. The bid deposit of the lowest responsive and responsible Bidder will be returned after the Contract has been awarded and the Bidder has submitted all insurance documentation and the Performance and Payment Bond, as required by the Contract Documents.

**IB-05 EXCEPTIONS AND ADDENDUM**

The County will not provide oral answers to questions concerning Bid Documents before or subsequent to the award of a Contract. If an interpretation or clarification of the Bid Document is desired by the Bidder or if the Bidder intends to request a deviation to the Specifications, the Bidder shall submit questions or request for the deviation to the Specifications to the Chief Procurement Officer prior to the date for inquiries set forth in the Special Conditions. The Chief Procurement Officer will answer questions or requests for deviations to the Specifications by issuing an Addendum which shall be available to all Bidders submitting a Bid Proposal. If no Addendum is issued by the Chief Procurement Officer, then such deviation or exception to the Specification shall be deemed rejected. The Chief Procurement Officer shall reject any Bid containing deviations or exceptions to the Specifications not previously accepted through a written Addendum. Bidder shall acknowledge receipt of each Addendum issued in the space provided on the proposal form. The Bidder's failure to acknowledge in writing any issued addenda may result in the CPO finding the Bid non-responsive and rejecting the Bid. The OCPO shall not allow any Bidder to acknowledge any such addenda, in writing or orally, after the Bid Opening.

All written requests for clarifications, deviations or exceptions shall be addressed to the Assistant Procurement Officer listed on the Bid Cover Page:

If the apparent lowest Bidder takes exceptions or deviations to the General Conditions, which are submitted with the Bid, the CPO shall reject the Bid as non-responsive in the event that the Chief Procurement Officer, in his or her sole opinion, determines such exceptions or deviations to be material.

**IB-06 BIDDER REPRESENTATIONS AND WARRANTIES**

The submission of a Bid shall constitute a representation and warranty that: (i) Bidder has carefully and thoroughly reviewed the Contract Documents and has found them complete and free from ambiguities and sufficient to describe the required goods, equipment, supplies or services; (ii) Bidder and all laborers, employees or subcontractors it intends to use in the performance of this Contract are skilled and experienced in the type of work or services called for by the Contract Documents; and (iii) neither the Bidder nor any of its employees, agents, suppliers or subcontractors have relied on any verbal representations from the County, or any of the County's employees, agents, or consultants, in preparing the Bid.

**IB-07 SUBMISSION OF BID PROPOSALS**

All Bidders shall submit the bound copy of the Bid in a sealed envelope and shall cause the Bid to be delivered to The Office of the Chief Procurement Officer, Room 1018, County Building, 118 North Clark Street, Chicago, Illinois 60602 by the date and hour for the Bid Opening as shown in the Bid. The sealed envelope submitted by the Bidder shall have the Bid label, set forth herein, or shall have the following information on the face of the envelope: Bidder's name, address, subject matter of Bid, Bid or Contract number, advertised date of Bid Opening and the hour designated for Bid Opening as shown in the Contract Documents.

**IB-08 BID PROPOSALS TO CONFORM TO BID DOCUMENTS**

The County will not entertain or consider any Bids: (i) received after the exact time specified in the Bid; (ii) not accompanied by the required bid deposit; or (iii) in any other way failing to comply fully with the conditions stated in the Bid.

**IB-09 COMPETENCY OF BIDDER**

No Contract shall be awarded to a Bidder that is in arrears or is in default to the County upon any debt or Contract, or that is a defaulter, as surety or otherwise upon any obligation to said County, or has failed to perform faithfully any previous contract with the County.

**IB-10 LOCAL BUSINESS PREFERENCE**

The Chief Procurement Officer shall, for all Procurements funded solely with County dollars by competitive sealed bidding, accept the lowest bid price or lowest evaluated bid price from a responsive or responsible local business, provided that the Bid does not exceed the lowest bid price or lowest evaluated bid price from a responsive and responsible non-local business by more than five percent (5%).

"Local business" shall mean a Person, including a foreign corporation authorized to transact business in Illinois, having a bona fide establishment located within the County at which it is transacting business on the date when a Bid is submitted to the County, and which employs the majority of its regular, full-time work force within the County. A Joint Venture shall constitute a Local Business if one or more Persons that qualify as a "Local Business" hold interests totaling over 50 percent in the Joint Venture, even if the Joint Venture does not, at the time of the Bid submittal, have such a bona fide establishment within the County.

**IB-11 RE-ENTRY EMPLOYMENT EARNED CREDITS**

In accordance with Section 34-231 through Section 34-235 of the Cook County Procurement Code, for all Public Works Contracts, with an estimated Bid Price of \$100,000 or more, the Bidder shall be permitted but is not required, to submit an employment plan of Former Offenders with its Bid Proposal in order to receive an earned credit for future Public Works Contracts. The Employment Plan shall be approved by the CPO and, if required, the Cook County Re-entry Employment Committee. Upon the completion of a qualifying contract and the Bidder presenting satisfactory information and documentation to the CPO, the CPO shall provide the Bidder with an Earned Credit Certificate, which shall be valid for three years from the date of issuance. The Bidder shall receive an earned credit of ½% of the Bid Price for future Public Works Contracts, if 5-10% of the percentage of Total Labor Hours are performed by Former Offenders, and an earned credit of 1% of the Bid Price for future Public Works Contracts, if the more than 10% of the percentage of Total Labor Hours are performed by Former Offenders. For purposes of this provision, "Former Offenders" shall mean adults who are residents of the County and who have been convicted of a crime. "Labor hours" shall mean the total hours of workers receiving an hourly Wage who are directly employed at the work site. It shall include hours performed by workers employed by the contractor and all subcontractors working at the site. "Labor hours" shall not include hours worked by nonworking former, superintendents, owners and workers who are not subject to prevailing wage requirements.

**IB-12 ELIGIBLE VETERANS BID PREFERENCE FOR PUBLIC WORKS CONTRACT**

In accordance with Section 34-236 (a) of the Cook County Procurement Code, for all Public Works Contracts, the CPO shall give a preference of one percent of the amount of the Contract to a Responsible and Responsive Bidder for a Public Works Contract when such Bidder has committed by affidavit to utilize Eligible Veterans for at least five percent of the hours worked under such Contract. Failure to utilize Eligible Veterans in accordance with the affidavit will result in breach of Contract.

**IB-13 ELIGIBLE BID PREFERENCE FOR VBEs and SDVBES**

In accordance with Section 34-236 (b) of the Cook County Procurement Code, the CPO shall give a preference of five percent of the amount of the Contract to a Responsible and Responsive Veteran owned Business Enterprises ("VBEs") or Service Disabled Veteran owned Business Enterprises ("SDVBE") certified by the Contract Compliance Director ("CCD"), or by any other entity approved by the CCD.



**IB-14 PUBLIC WORKS**

For all Public Works Projects, the Bidder shall comply with Section 34-190 of the Cook County Procurement Code, which requires that Public Works Contracts having an estimated contract price of \$100,000 or more, where not otherwise prohibited by Federal or State law, shall have at least 50 percent of the total hours worked on the site by employees of the Contractor and subcontractors shall be performed by residents of the County.

All Bid Proposals for Public Works Construction shall be evaluated to determine, whether the Bidder is responsible, in accordance with Section 34-145 of the Cook County Procurement Code. In accordance with Section 34-145 the CPO shall determine whether the Bidder: (i) is authorized to do business in Illinois and the County; (ii) has, as applicable, a Federal Employer Identification Number or Social Security; (iii) meets any applicable insurance requirements in the Bid Document; (iv) has certified that it is in compliance with all provisions of the Illinois Prevailing Wage Act, and State and Federal equal employment opportunity laws; (v) has certified that it participates in active apprenticeship and training programs approved and registered with the United States Department of Labor Bureau of Apprenticeship and Training for each of the trades of work contemplated under the awarded Contract; (vi) contractually requires any subcontractor to participate in active apprenticeship and training programs approved and registered with the United States Department of Labor Bureau of Apprenticeship and Training for each of the trades of work contemplated under the awarded Contract; and (vii) has agreed to provide Certified payrolls as specified in the Illinois Prevailing Wage Act.

**IB-15 CONSIDERATION OF BID PROPOSALS**

The County reserves the right to reject or accept any or all Bid Proposals, to extend the bidding period, to waive technicalities in the Bid and/or to withdraw or cancel the Bid or to issue a new Bid, i.e., "rebid" prior to award of the Contract.

After Bid Proposals are opened and read aloud, they will be evaluated based on the price, conformance with Specifications, the responsibility of the various Bidders taking into consideration factors including, but not limited to, those noted in IB-09, IB-10 and responsiveness to the County's Minority and Female Owned Business Ordinance. The Chief Procurement Officer reserves the right to make corrections, after receiving the Bids, to any clerical error apparent on the face of the Bid, including but not limited to obviously incorrect units or misplaced decimal points, or arithmetic errors. In the event that comparison of the Bidder's "Unit Price" and "Total Price" submitted for any line items reveals a calculation error, the Unit Price will prevail.

The Chief Procurement Officer reserves the right to reject any Bid that, in his or her discretion and authority is deemed materially unbalanced.

**IB-16 WITHDRAWAL OF BID PROPOSALS**

Bidders may withdraw their Bid Proposals at any time prior to the time specified in the Bid as the date and hour set for the Bid Opening. However, no Bidder shall withdraw, cancel or modify its Bid Proposal for a period of ninety (90) calendar days after said advertised Bid Opening.

**IB-17 NOTICE OF AWARD**

The Chief Procurement Officer shall notify the successful Bidder, in writing, of award of the Contract by the County within ninety (90) days from the Bid Opening date. Upon receipt of the Notice of Award, the Contractor shall promptly secure, execute and deliver to the Chief Procurement Officer any documents required herein.

**IB-18 BID DISPUTES**

Section 34-136 of the Cook County Procurement Code permits Bidders to file protests. Any Bidder who reasonably believes that the recommended Bidder is not the lowest Responsive and Responsible Bidder, or has a complaint about the bid process, may submit a bid protest, in writing, and directed to the CPO, within three business days after the date upon which the CPO posts the recommended Bid for award or execution on the County's website. The bid protest must specify why the protester believes the recommended Bidder is not the lowest Responsive and Responsible Bidder, or why the protester believes the bid procedure was unfair, including a statement of how the alleged unfairness prejudiced the protesting Bidder and the action requested of the CPO. A bid protest based on an issue which could have been clarified through a request for clarification or information pursuant to Section 34-136(d), and IB-05, Communications with the County regarding competitive bidding process, will not be considered if the protesting Bidder failed to make such request. When a bid protest has been submitted, no further action shall be taken on the Procurement until the CPO makes a decision concerning the bid protest, unless the Using Agency responds in writing and sufficiently demonstrates that (i) the item to be procured is urgently required and (ii) failure to make the award promptly will unduly delay delivery or performance or cause other undue harm.

The CPO shall issue a written decision on the bid protest to the protesting Bidder and to any other Bidder affected by such decision as soon as reasonably practicable. If the bid protest is upheld based on a lack of fairness in the bid procedure, the CPO shall re-bid the procurement. If the CPO determines that the recommended Bidder was not Responsive and Responsible, that Bidder shall be disqualified and the CPO may either recommend the lowest Responsive and Responsible Bidder or re-bid. Any CPO decision concerning bid protests shall be final.

**IB-19 PERFORMANCE AND PAYMENT BOND**

When required in Bid Documents, the successful Bidder shall furnish a Performance and Payment Bond in the full amount of the Contract on the County Form, a specimen of which shall be provided. The Surety issuing the Performance and Payment Bond must have a general rating of "A" and shall be a Class VII or higher in the financial size category as defined by Best's Key Rating Guide-Property and Casualty, or have such ratings as specified in the Contract Documents.

In the event that the Bidder fails to furnish the Performance and Payment Bond within fourteen (14) calendar days after service of the Notice of Award, the County may elect to retain Bidder's bid deposit as liquidated damages and not as a penalty and reject the Bid. The parties agree that the sum of the bid deposit is a fair estimate of the amount of damages that the County will sustain due to the Bidder's failure to furnish the Performance and Payment Bond and the termination of the Contract.

**IB-20 PRICES FIRM**

All prices quoted in the Bid Proposal shall be firm and will not be subject to increase during the term of the Contract, except as otherwise provided in these Contract Documents.

**IB-21 CASH BILLING DISCOUNTS**

Cash billing or percentage discounts for payment will not be considered in evaluating Bid Proposals.

**IB-22 CATALOGS**

Each Bidder shall submit in TRIPLICATE, where necessary or when requested catalogs, descriptive literature, and detailed drawings, fully detailing features, designs, construction, appointment and finishes not covered in the Specifications but necessary to fully describe the goods, equipment, supplies or services.

**IB-23 AUTHORIZED DEALER/DISTRIBUTOR**

For goods, equipment and supplies, the Bidder must be one of the following: (i) the manufacturer; (ii) an authorized dealer/distributor; or (iii) able to promptly secure the necessary genuine parts, assemblies and/or accessories as supplied by the original equipment manufacturer (O.E.M.), along with any necessary schematics or drawings to fulfill the contractual obligations. With respect to the purchase of vehicles, or services related to vehicles, the Specifications or Special Conditions may require that the Bidder be an authorized dealership of the manufacturer. The Bidder must be able to furnish original product warranty and manufacturer's related services such as product information, product re-call notices, etc. Proof of ability to transfer product warranty to the County is to be submitted with the Bid Proposal.

**IB-24 TRADE NAMES**

In cases where an item is identified by a manufacturer's name, brand name, trade name, catalog number, or reference, it is understood that the Bidder proposes to furnish the item identified and does not propose to furnish an alternate but equivalent item, unless the Bidder has proposed and the County has accepted the alternate but equivalent item.

Unless the Bid states that no substitute shall be allowed, the reference to a manufacturer's name, brand name, trade name, catalog number, or reference is intended to be descriptive and not restrictive and to indicate to prospective Bidders articles that shall be satisfactory. Bid Proposals for other manufacturer names, brand names, trade names, catalog numbers or references shall be considered, provided each Bidder states on the face of the Bid Proposal what alternate, but equivalent items are being proposed.

If the Bidder proposes alternate, but equivalent, items, the Bidder must provide the following: (i) product identification, including manufacturer's name and address; (ii) manufacturer's literature identifying the product description, reference standards and performance and test data; (iii) samples, as applicable; and (iv) itemized comparisons of the proposed alternate items listing significant variations. If a Bidder proposes alternate items, it warrants and represents that in making a formal request for substitution that: (i) the proposed alternate item is equivalent to or superior in all respects to the item specified in the Bid; and (ii) that the same warranties and guarantees will be provided for the proposed alternate items as those specified in the Bid. The CPO may, in his or her sole discretion accept an alternate item for a specified item, provided the alternate items so bid is, in the CPO's sole opinion the equivalent of the item specified in the Bid. An alternate item that the CPO determines not to be equivalent to the specified item shall render the bid non-responsive and the CPO shall reject the Bid.

**IB-25 SAMPLES**

Bidders may be asked upon request of the Chief Procurement Officer, including subsequent to the Bid Opening, to furnish and deliver a representative sample sufficient to effectively evaluate each item listed in the Bid Proposal. All samples must be delivered F.O.B. DESTINATION, FREIGHT PREPAID to an identified delivery location within five (5) business days of the request. Samples submitted must be identical to those specified in the Bid Proposal. Submission of other than the samples reflected in the Bid Proposal or failure to furnish samples within the required time period shall be cause for rejection of the Bid Proposal. All samples are subject to mutilation and will not be returned. Bidders shall bear the cost of any samples and shipping or delivery costs related thereto.

**IB-26 NOTICES**

All communications and notices between the County and Bidders regarding the Bid Documents shall be in writing and hand delivered or delivered via first class United States mail, postage prepaid, or via e-mail. Notices to the Bidders shall be addressed to the name and address provided by the Bidders; notices to the Chief Procurement Officer shall be addressed to Room 1018, County Building, 118 North Clark Street, Chicago, Illinois 60602.

**IB-27 COMPLIANCE WITH LAWS - PUBLIC CONTRACTS**

This is a competitive Bid of Cook County government subject to laws and ordinances governing public bids and contracts. The Bidder shall at all times observe and comply with all laws, ordinances, regulations and codes of the Federal, State, County and other local government agencies which may in any manner effect the preparation of the Bid Proposal or the performance of the Contract. If the Bidder observes that any of the Bid Documents are at variance with any laws, ordinances, regulations or codes, it shall promptly notify the Chief Procurement Officer in writing and if necessary an addendum shall be issued by the Chief Procurement Officer.

**IB-28 COOPERATION WITH INSPECTOR GENERAL**

Persons or businesses seeking County contracts are required to abide by all of the applicable provisions of the Office of the Independent Inspector General Ordinance (Section 2-281 et. seq. of the Cook County Code of Ordinances). Failure to cooperate as required may result in monetary and/or other penalties.

**IB-29 CREDIT CARD PAYMENTS**

The County has implemented a Prompt Payment Program (the "E-Payables Program"). Bidders who voluntarily participate in the Program will receive prompt payments via the County's Visa Purchasing Card. In order to participate in the Program, Bidders must submit the E-Payables Enrollment Form to the Cook County Comptroller's Office. A description of the Program is attached for informational purposes. Notwithstanding the foregoing, the County has no duty or obligation to process prompt payments to Bidders. The County reserves its right to discontinue the Program at any time. The County will not provide a bid incentive or preference to Bidders who participate in the Program.

**IB-30 MINORITY AND WOMEN OWNED BUSINESS ENTERPRISE ORDINANCE**

Cook County has adopted the Minority and Women Owned Business Enterprise Ordinance (the "Ordinance"). The Ordinance establishes annual participation goals for Minority and Women Owned Business Enterprises. The requirements of the Ordinance, as well as the documents the Bidder must submit are set forth in GC-19. The Bidder's failure to submit the MBE/WBE Utilization Plan, as more fully described in GC-19 shall render the Bid non-responsive.

**IB-31 COOK COUNTY RECYCLED PRODUCT PROCUREMENT POLICY**

Cook County has adopted the Cook County Recycled Product Procurement Policy. In accordance with the Policy, Cook County encourages the use of recycled paper and paper products, whenever practicable. The Bidder shall use recycled paper, except where the specialized nature of certain materials (such as photographs) requires otherwise, and all documents shall be printed two-sided unless two-sided printing is not practicable.

**IB-32 ESTIMATED QUANTITIES**

Unless expressly stated in the Specifications, Special Conditions, or Proposal page(s) any quantities stated in this Bid represent estimated usage and as such are for bid canvassing purposes only. The County reserves the right to increase or decrease quantities ordered. Nothing herein will be construed as an intent or obligation on the part of the County to purchase any goods, equipment, supplies or services beyond those determined by the County to be necessary to meet its needs.

**IB-33 COALITION OF UNIONIZED PUBLIC EMPLOYEES (COUPE)**

The Cook County Board of Commissioners has entered into an Agreement with the Coalition of Unionized Public Employees ("COUPE"). To the extent permitted by law, in the event the County either directly or indirectly through a contractor or construction manager, undertakes construction work within the trade jurisdiction of a member of COUPE, each affected coalition union shall receive fourteen (14) days written notice prior to the County's undertaking, except in the case of emergency, the County shall perform or require the performance of such work by a person, firm, or company signatory or willing to become signatory for purposes of that County project to an existing labor agreement with the coalition union or a union with the appropriate trade jurisdiction located in County of Cook.

**END OF SECTION**

**GENERAL CONDITIONS  
BID CONTRACTS  
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**GENERAL CONDITIONS  
BID CONTRACTS  
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GENERAL CONDITIONSGC-01 SUBCONTRACTING OR ASSIGNMENT OF CONTRACT OR CONTRACT FUNDS

Once awarded, this Contract shall not be subcontracted or any part thereof assigned without the express written approval of the County Chief Procurement Officer ("Chief Procurement Officer"). In no case, however, shall such approval relieve the Contractor from his obligations or change the terms of the Contract. The Contractor shall not transfer or assign any Contract funds or claims due or to become due without the advance written approval of the Chief Procurement Officer. The unauthorized subcontracting or assignment of the Contract, in whole or in part, or the unauthorized transfer or assignment of any Contract funds, either in whole or in part, or any interest therein, which shall be due or are to become due the Contractor shall have no effect on the County and are null and void.

The Contractor shall identify any and all contractors and subcontractors it intends to use in the performance of the Contract by completing the Identification of Subcontractor/Supplier/Subconsultant Form ("ISF"). All such persons shall be subject to the prior approval of the County. The Contractor will only subcontract with competent and responsible Subcontractors. The Chief Procurement Officer may require in his or her sole discretion, that the Contractor provide copies of all contracts with subcontractors.

The Contractor and its employees, contractors, subcontractors, agents and representatives are, for all purposes arising out of this Contract, independent contractors and are not employees of the County. It is expressly understood and agreed that the Contractor and its employees, contractors, subcontractors, agents and representatives shall in no event as a result of a contract be entitled to any benefit to which County employees are entitled, including, but not limited to, overtime, retirement benefits, worker's compensation benefits and injury leave or other leave benefits.

GC-02 INDEMNIFICATION

The Contractor covenants and agrees to indemnify and save harmless the County and its commissioners, officials, employees, agents and representatives, and their respective heirs, successors and assigns, from and against any and all costs, expenses, attorney's fees, losses, damages and liabilities incurred or suffered directly or indirectly from or attributable to any claims arising out of or incident to the performance or nonperformance of the Contract by the Contractor, or the acts or omissions of the officers, agents, employees, contractors, subcontractors, licensees or invitees of the Contractor. The Contractor expressly understands and agrees that any Performance Bond or insurance protection required of the Contractor, or otherwise provided by the Contractor, shall in no way limit the responsibility to indemnify the County as hereinabove provided.

GC-03 INSPECTION AND RESPONSIBILITY

The County shall have a right to inspect and approve any Contract goods, equipment, supplies or services used in carrying out this Contract and shall approve the quality and standards of all materials or completed work furnished under this Contract. Contract goods, equipment, supplies or services not complying herewith may be rejected by the Chief Procurement Officer and/or the Director and shall be replaced and/or re-performed by the Contractor at no cost to the County. Any Contract goods, equipment or supplies rejected shall be removed within a reasonable time from the premises of the County at the entire expense of the Contractor, after notice has been given by the County to the Contractor that such Contract goods, equipment or supplies have been rejected.

GC-04 PAYMENT TO CONTRACTORS AND SUBCONTRACTORS

All invoices submitted by the Contractor shall be in accordance with the cost provisions contained in the Contract Documents and shall contain a detailed description of the Deliverables (i.e., the goods, equipment, supplies or services) including the quantity of the Deliverables, for which payment is requested. All invoices for services shall include itemized entries indicating the date or time period in which the services were provided, the amount of time spent performing the services, and a detailed description of the services provided during the period of the invoice. All invoices shall reflect the amounts invoiced by and the amounts paid to the Contractor as of the date of the invoice. Invoices for new charges shall not include "past due" amounts, if any, which amounts must be set forth on a separate invoice. Contractor shall not be entitled to invoice the County for any late fees or other penalties.

In accordance with Section 34-177 of the Cook County Procurement Code, the County shall have a right to set off and subtract from any invoice(s) or Contract price, a sum equal to any fines and penalties, including interest, for any tax or fee delinquency and any debt or obligation owed by the Contractor to the County.

GENERAL CONDITIONSGC-04 PAYMENT TO CONTRACTORS AND SUBCONTRACTORS (con't.)

The Contractor acknowledges its duty to ensure the accuracy of all invoices submitted to the County for payment. By submitting the invoices, the Contractor certifies that all itemized entries set forth in the invoices are true and correct. The Contractor acknowledges that by submitting the invoices, it certifies that it has delivered the Deliverables, i.e., the goods, supplies or equipment set forth in the Contract to the Using Agency, or that it has properly performed the services set forth in the Contract. The invoice must also reflect the dates and amount of time expended in the provision of services under the Contract. The Contractor acknowledges that any inaccurate statements or negligent or intentional misrepresentations in the invoices shall result in the County exercising all remedies available to it in law and equity including, but not limited to, a delay in payment or non-payment to the Contractor, and reporting the matter to the Cook County Office of the Independent Inspector General.

When a Contractor receives any payment from the County for any supplies, equipment, goods, or services, it has provided to the County pursuant to its Contract, the Contractor must make payment to its subcontractors within 15 days after receipt of payment from the County, provided that such subcontractor has satisfactorily provided the supplies, equipment, goods or services in accordance with the Contract and provided the Contractor with all of the documents and information required of the Contractor. The Contractor may delay or postpone payment to a subcontractor when the subcontractor's supplies, equipment, goods, or services do not comply with the requirements of the Contract, the Contractor is acting in good faith, and not in retaliation for a subcontractor exercising legal or contractual rights.

GC-05 PREPAID FEES

In the event this Contract is terminated by either party, for cause or otherwise, and the County has prepaid for any goods, equipment, supplies or services to be provided pursuant to this Contract, Contractor shall refund to the County, on a prorated basis to the effective date of termination, all amounts prepaid for such goods, equipment, supplies or services not actually provided as a result of the termination. The refund shall be made within fourteen (14) days of the effective date of termination.

GC-06 TAXES

Federal Excise Tax does not apply to materials purchased by the County by virtue of Exemption Certificate No. 36-75-0038K. Illinois Retailers' Occupation Tax, Use Tax and Municipal Retailers' Occupation Tax do not apply to materials or services purchased by the County by virtue of statute. The price or prices quoted herein shall include any and all other federal and/or state, direct and/or indirect taxes which apply to this Contract. The County's State of Illinois Sales Tax Exemption Identification No. is E-9998-2013-07.

GC-07 PRICE REDUCTION

If at any time after the Contract award, Contractor makes a general price reduction in the price of any goods, equipment, supplies or services covered by the Contract, the equivalent price reduction based on similar quantities and/or considerations shall be applied to this Contract for the term of the Contract. Such price reductions shall be effective at the same time and in the same manner as the reduction in the price to customers generally.

GC-08 CONTRACTOR CREDITS

To the extent the Contractor gives credits toward future purchases from its financial incentives, discounts, value points or other benefits based on the purchase of the goods, equipment, supplies or services provided for under this Contract, such credits belong to the County and not any specific Using Agency. Contractor shall report any such credits to the Chief Procurement Officer.

GC-09 DISPUTES

Any dispute arising under the Contract between the County and Contractor shall be decided by the Chief Procurement Officer. The complaining party shall submit a written statement detailing the dispute and specifying the specific relevant Contract provision(s) to the Chief Procurement Officer. Upon request of the Chief Procurement Officer, the party complained against shall respond to the complaint in writing within five days of such request. The Chief Procurement Officer will reduce his decision to writing and mail or otherwise furnish a copy thereof to the Contractor and Director. Dispute resolution as provided herein shall be a condition precedent to any other action at law or in equity. Notwithstanding a dispute, Contractor shall continue to discharge all its obligations, duties and responsibilities set forth in the Contract during any dispute resolution proceeding unless otherwise agreed to by the County in writing.



GENERAL CONDITIONSGC-10 CONTRACT AMENDMENTS

The parties may during the term of the Contract make amendments to the Contract but only as provided in this section. Such amendments shall only be made by mutual agreement in writing.

In the case of Contracts not approved by the Board, the Chief Procurement Officer may amend a contract provided that any such amendment does not extend the Contract by more than one (1) year, and further provided that the total cost of all such amendments does not increase the total amount of the Contract beyond \$150,000. Such action may only be made with the advance written approval of the Chief Procurement Officer. If the amendment extends the Contract beyond one (1) year or increases the total award amount beyond \$150,000, then Board approval will be required.

No Using Agency or employee thereof has authority to make any amendments to the Contract. Any modifications or amendments to the Contract made without the express written approval of the Chief Procurement Officer is void and unenforceable.

Contractor is hereby notified that, except for amendments which are made in accordance with this GC-10 Modifications and Amendments, no Using Agency or employee thereof has authority to make any modification or amendment to the Contract.

GC-11 DEFAULT

Contractor shall be in default hereunder in the event of a material breach by Contractor of any term or condition of this Contract where Contractor has failed to cure such breach within ten (10) days after written notice of breach is given to Contractor by the County, setting forth the nature of such breach.

A material breach of the contract by the Contractor includes but is not limited to the following:

1. Failure to begin performance under the Contract within the specified time;
2. Failure to perform under the Contract with sufficient personnel, equipment, or materials to ensure completion of said performance within the specified time or failure to assign qualified personnel to ensure completion within the specified time;
3. Performance of the Contract in an unsatisfactory manner;
4. Refusal to perform services deemed to be defective or unsuitable;
5. Discontinuance of performance of Contractor's obligations under the Contract or the impairment or the reasonable progress of performance;
6. Becoming insolvent, being declared bankrupt or committing any act of bankruptcy or insolvency;
7. Any assignment of the Contract for the benefit of creditors;
8. Any cause whatsoever which impairs performance in an acceptable manner; or
9. Any other material breach of any term or condition of the Contract.

County shall be in default hereunder if any material breach of the Contract by the County occurs which is not cured by the County within forty-five (45) days after written notice of breach has been given by Contractor to the County, setting forth the nature of such breach.

GC-12 COUNTY'S REMEDIES

If the Contractor fails to remedy a material breach during the ten (10) day cure period pursuant to General Condition GC-11, Default, the County shall have the right to terminate the Contract provided, however, that the County shall give Contractor prior written notice of its intent to terminate. Following notice of breach to Contractor, the County reserves the right to withhold payments owed to Contractor until such time as Contractor has cured the breach which is the subject matter of the notice. In addition, the County shall have the right to pursue all remedies in law or equity.

GENERAL CONDITIONS

**GC-13 CONTRACTOR'S REMEDIES**

If the County has been notified of breach and fails to remedy the breach during the forty-five (45) day cure period pursuant to General Condition GC-11, Default, the Contractor shall have the right to terminate this Contract providing, however, that Contractor shall give the County thirty (30) days prior written notice of termination.

Contractor shall have the right to pursue all remedies available in law or equity. In all cases the Contractor's damages shall be those provable damages not to exceed the value of the Contract as awarded by the Cook County Board of Commissioners or the Chief Procurement Officer.

**GC-14 DELAYS**

Contractor agrees that no charges or claims for damages shall be made by Contractor for any delays or hindrances from any cause whatsoever related to the performance of the Contract.

**GC-15 INSURANCE REQUIREMENTS**

Prior to the effective date of this Contract, the Contractor, at its cost, shall secure and maintain at all times, unless specified otherwise, until completion of the term of this Contract the insurance specified below. The cost to the Contractor for providing this insurance coverage shall be considered as included in the cost of the contract.

Nothing contained in these insurance requirements is to be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from its operations under this Contract.

Contractor shall require all tiers of subcontractors to provide the insurance required in this Contract except paragraph E.

The Cook County Department of Risk Management maintains the right to modify, delete, alter or change these requirements.

The Contractor shall maintain insurance as set forth below.

**a) Workers Compensation Insurance**

In accordance with the Laws of the State of Illinois and including Employer's Liability Insurance with limits not less than the following:

The Workers Compensation policy shall also include the following provisions:

Bodily Injury by accident	\$1,000,000 each accident
Bodily Injury by Disease	\$1,000,000 policy limit
Bodily Injury by Disease	\$1,000,000 each employee

Kotecki Waiver Endorsement

**b) Commercial General Liability Insurance**

For bodily injury, personal injury and property damage on an occurrence form (ISO Form CG 0001 or equivalent) with limits not less than the following:

Each Occurrence	\$2,000,000
General Aggregate per Project	\$4,000,000
Products – Completed Operations Aggregate	\$2,000,000
Personal/Advertising Injury	\$2,000,000

All Premises and Operations.

Explosion, collapse and underground damage.

Contractual liability for the obligations assumed in the Indemnification and Hold Harmless agreement.

GENERAL CONDITIONSGC-15 INSURANCE REQUIREMENTS (con't.)

Contractor's Protective coverage for independent contractors and subcontractors employed by Contractor.

Severability of Interest/separation of insured clauses

Personal and advertising injury liability

Such policy must contain (i) ISO Additional Insured Endorsements CG 20 10 07 04 and CG 20 37 07 04, and (ii) severability of interest/separation of insured clause. The products and completed operations coverage (including ISO Endorsement CG 20 37 07 04) must be maintained for a period of three years after completion of the Contract.

C. Commercial Automobile Liability Insurance

When any vehicles are used in the performance of this Contract, Contractor shall secure Automobile Liability Insurance for bodily injury and property damage arising from the ownership, maintenance or use of owned, hired and non-owned vehicles (ISO Form CA 00 01 or equivalent) with a limit no less than \$1,000,000 per accident.

D. Contractor's Pollution Liability

Contractor will maintain pollution liability insurance with limits of liability of \$1,000,000 each claim and aggregate.

The policy will provide coverage for sums the Contractor becomes legally obligated to pay as loss as a result of claims for bodily injury, property damage or clean-up costs caused by a pollution incident. Pollution incidents will include the discharge, dispersal, release or escape of any solid, liquid, gaseous or thermal irritant or contaminant, including but not limited to smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, medical waste, waste materials, lead, asbestos, silica, hydrocarbons and microbial matter.

Contractor waives and will require its contractor's pollution liability insurer to waive their rights of subrogation against Cook County and its agents for claims insured by the contractor's pollution liability insurance.

If the policy is a 'claims made' form or if any coverage under this policy is written as 'claims made', coverage will be maintained for three years after project completion.

E. Umbrella/Excess Liability

Such policy shall be excess over Commercial General Liability, Automobile Liability and Employer's Liability with limits not less than the following amounts:

Each Occurrence: \$10,000,000

The limit shall apply separately to this project.

F. Railroad Protective Liability Where such exposure exists, the Contractor will provide coverage in the name of each railroad company having jurisdiction over the right of way across which work under the Contract is to be performed with Limits as required by the railroad.

Additional Insured

The required insurance policies, with the exception of Workers Compensation, shall include **Cook County, its officials and employees as additional insureds** with respect to operations performed on a primary and non-contributory basis.

GENERAL CONDITIONSGC-15 INSURANCE REQUIREMENTS (con't.)

The Commercial General Liability policy shall include **ISO Additional Insured Endorsements CG 20 10 07 04 and CG 20 37 07 04**. No other form will be accepted without prior approval of the Cook County Department of Risk Management. Any insurance or self-insurance maintained by Cook County shall be excess and shall not contribute with it. The full policy limits and scope of protection shall apply to Cook County as an additional insured even if they exceed the requirements and limits specified above.

All liability policies shall entirely delete ISO endorsements CG 21 39 10 93 or similar endorsement or policy provision which limit contractual liability.

Waiver of Subrogation Endorsements

All insurance policies must contain a Waiver of Subrogation Endorsement in favor of Cook County, its officials and employees.

Qualification of Insurers

All insurers must possess an A.M. Best rating of A- VII or better and be authorized to do business in Illinois. The insurance limits required herein may be satisfied by a combination of primary, umbrella and/or excess liability insurance policies. Companies with ratings lower than (A-) or VII will be acceptable only upon written consent of Department of Risk Management,

Certificates of Insurance

Prior to the date on which Contractor commences performance of its part of the work, Contractor shall furnish to the Superintendent of the Department of Transportation and Highways certificates of insurance maintained by Contractor. The certificates must specifically list each of the required additional insured and specify that Waiver of Subrogation Endorsements apply. The certificates must be accompanied by the required Commercial General Liability ISO Additional Insured Endorsements CG 20 10 07 04 and CG 20 37 07 04.

The receipt of any certificate of insurance does not constitute agreement by the County that the insurance requirements have been fully met or that the insurance policies indicated on the certificate of insurance are in compliance with the insurance required above. Coverage shall be in companies subject to approval of the County.

In no event shall any failure of the County to receive certificates of insurance required hereof or to demand receipt of such Certificates of Insurance be construed as a waiver of Contractor's obligations to obtain insurance pursuant to these insurance requirements.

Notice of Cancellation or Non-Renewal

The insurance policies shall be endorsed and shall provide the Superintendent of the Department of Transportation and Highways with thirty (30) days advance written notice in the event any required insurance will be cancelled and ten (10) days' notice for cancellation due to non-payment of premiums, materially reduced or non-renewed. Contractor shall secure replacement coverage to comply with the stated insurance requirements and provide new certificates of insurance to the Superintendent of the Department of Transportation and Highways.

In the event the insurance is cancelled before the completion of the project, the County shall reserve its rights under the contract to order the job shut down until the Contractor obtains the required insurance in the amounts stated herein or, the County may obtain the coverage required and then shall deduct the appropriate premium cost from the monies due the Contractor.

Property Insurance

Contractor is responsible for all loss or damage to personal property (including materials, equipment, tools and supplies) owned, rented or used by Contractor.

GENERAL CONDITIONSGC-16 PATENTS, COPYRIGHTS AND LICENSES

Contractor agrees to hold harmless and indemnify the County, its officials, agents, employees and affiliates from and defend, as permitted by Illinois law, at its own expense (including reasonable attorneys', accountants' and consultants' fees), any suit or proceeding brought against County based upon a claim that the ownership and/or use of equipment, hardware and software or any part thereof utilized in performing Contractor's services constitutes an infringement of any patent, copyright or license or any other intellectual property right.

In the event the use of any equipment, hardware or software or any part thereof is enjoined, Contractor with all reasonable speed and due diligence shall provide or otherwise secure for County, at the Contractor's election, one of the following: the right to continue use of the equipment, hardware or software; an equivalent system having the Specifications as provided in this Contract; or to modify the system or its component parts so that it becomes non-infringing while performing in a substantially similar manner to the original system, meeting the Specifications of this Contract.

GC-17 COMPLIANCE WITH LAWS

The Contractor shall observe and comply with the laws, ordinances, regulations and codes of the Federal, State, County and other local government agencies which may in any manner affect the performance of the Contract, including but not limited to those County Ordinances set forth in the Certifications, Affidavits or EDS attached hereto and incorporated herein. Assurance of compliance with this requirement by the Contractor's employees, agents or subcontractors shall be the responsibility of the Contractor.

The Contractor shall secure and pay for all federal, state and local licenses, permits and fees required in order to perform this Contract.

GC-18 DELIVERY

All Contract goods, equipment or supplies shipped to the County shall be shipped F.O.B., DESTINATION, FREIGHT PREPAID. Arrangements shall be made in advance by the Contractor in order that the County may arrange for receipt of the materials.

Truck deliveries will be accepted before 3:00 P.M. on weekdays only. No deliveries will be accepted on Saturdays, Sundays or County Holidays. The County is not responsible for delivery delays due to waiting times for loading and unloading at delivery locations.

The quantity of Contract goods, equipment or supplies based on weight that are delivered by truck will be ascertained from a weight certificate issued by a duly licensed Public Weight-Master. In the case of delivery by rail, weight will be ascertained from bill of lading from originating line, but the County reserves the right to re-weigh at the nearest available railroad scale.

The County reserves the right to add new delivery locations or delete previously listed delivery locations as required during the Contract period. The only restriction regarding the County's right to add new delivery locations shall be that any new or additional location shall be within the geographical boundaries of the County of Cook.

GC-19 MINORITY AND WOMEN BUSINESS ENTERPRISESCOOK COUNTY ORDINANCE CHAPTER 34, DIVISION 8 SECTION 34-260 to SECTION 34-300I. POLICY AND GOALS

- A. It is the policy of the County of Cook to prevent discrimination in the award of or participation in County Contracts and to eliminate arbitrary barriers for participation in such Contracts by local businesses certified as a Minority Business Enterprise (MBE) and Women-owned Business Enterprise (WBE) as both prime and sub-contractors. In furtherance of this policy, the Cook County Board of Commissioners has adopted a Minority- and Women-owned Business Enterprise Ordinance (the "Ordinance") which establishes annual goals for MBE and WBE participation as outlined below:

GENERAL CONDITIONS

**GC-19 MINORITY AND WOMEN BUSINESS ENTERPRISES**  
**COOK COUNTY ORDINANCE CHAPTER 34, DIVISION 8 SECTION 34-260 to SECTION 34-300 (con't.)**

Contract Type	Goals	
	MBE	WBE
Goods and Services	25%	10%
Construction	24%	10%
Professional Services	35% Overall	

- B. **The County shall set contract-specific goals, based on the availability of MBEs and WBEs that are certified to provide commodities or services specified in this solicitation document. The MBE/WBE participation goals for each Contract are stated in the Special Conditions. A Bid, Quotation, or Proposal shall be rejected if the County determines that it fails to comply with this General Condition in any way, including but not limited to: (i) failing to state an enforceable commitment to achieve for this contract the identified MBE/WBE Contract goals; or (ii) failing to include a Petition for Reduction/Waiver, which states that the goals for MBE/WBE participation are not attainable despite the Bidder or Proposer Good Faith Efforts, and explains why. If a Bid, Quotation, or Proposal is rejected, then a new Bid, Quotation, or Proposal may be solicited if the public interest is served thereby.**
  
- C. **To the extent that a Bid, Quotation, or Proposal includes a Petition for Reduction/Waiver that is approved by the Office of Contract Compliance, the Contract specific MBE and WBE participation goals may be achieved by the proposed Bidder or Proposer's status as an MBE or WBE; by the Bidder or Proposer's enforceable joint-venture agreement with one or more MBEs and/or WBEs; by the Bidder or Proposer entering into one or more enforceable subcontracting agreements with one or more MBE and WBE; by the Bidder or Proposer establishing and carrying out an enforceable mentor/protégé agreement with one or more MBE and WBE; by the Bidder or Proposer actively engaging the Indirect Participation of one or more MBE and WBE in other aspects of its business; or by any combination of the foregoing, so long as the Utilization Plan evidences a commitment to meet the MBE and WBE Contract goals set forth in (B) above, as approved by the Office of Contract Compliance.**
  
- D. **A single Person, as defined in the Procurement Code, may not be utilized as both an MBE and a WBE on the same Contract, whether as a contractor, subcontractor or supplier.**
  
- E. **Unless specifically waived in the Bid or Proposal Documents, this General Condition, GC-19; the Ordinance; and the policies and procedures promulgated thereunder shall govern. If there is a conflict between this GC-19 and the Ordinance or the policies and procedures, the Ordinance shall control.**
  
- F. **A Contractor's failure to carry out its commitment regarding MBE and WBE participation in the course of the Contract's performance may constitute a material breach of the Contract. If such breach is not appropriately cured, it may result in withholding of payments under the Contract, contractual penalties, disqualification and any other remedy provided for in Division 4 of the Procurement Code at law or in equity.**

**II. REQUIRED BID OR PROPOSAL SUBMITTALS**

**A Bidder or Proposer shall document its commitment to meeting the Contract specific MBE and WBE participation goals by submitting a Utilization Plan with the Bid or Proposal. The Utilization Plan shall include (1) one or more Letter(s) of Intent from the relevant MBE and WBE firms; and (2) current Letters of Certification as an MBE or WBE. Alternatively, the Bidder or Proposer shall submit (1) a written Petition for Reduction/Waiver with the Bid, Quotation or Proposal, which documents its preceding Good Faith Efforts and an explanation of its inability to meet the goals for MBE and WBE participation. The Utilization Plan shall be submitted at the time that the bid or proposal is due. Failure to include a Utilization Plan will render the submission not Responsive and shall be cause for the CPO to reject the Bid or Proposal.**

GENERAL CONDITIONS**GC-19 MINORITY AND WOMEN BUSINESS ENTERPRISES**  
**COOK COUNTY ORDINANCE CHAPTER 34, DIVISION 8 SECTION 34-260 to SECTION 34-300 (con't.)****A. MBE/WBE Utilization Plan**

Each Bid or Proposal shall include a complete Utilization Plan, as set forth on Form 1 of the M/WBE Compliance Forms. The Utilization Plan shall include the name(s), mailing address, email address, and telephone number of the principal contact person of the relevant MBE and WBE firms. If the Bidder or Proposer submits a Bid or Proposal, and any of their subcontractors, suppliers or consultants, are certified MBE or WBE firms, they shall be identified as an MBE or WBE within the Utilization Plan.

**1. Letter(s) of Intent**

Except as set forth below, a Bid or Proposal shall include, as part of the Utilization Plan, one or more Letter(s) of Intent, as set forth on Form 2 of the M/WBE Compliance Forms, executed by each MBE and WBE and the Bidder or Proposer. The Letter(s) of Intent will be used to confirm that each MBE and WBE shall perform work as a subcontractor, supplier, joint venture, or consultant on the Contract. Each Letter of Intent shall indicate whether and the degree to which the MBE or WBE will provide goods or services directly or indirectly during the term of the Contract. The box for direct participation shall be marked if the proposed MBE or WBE will provide goods or services directly related to the scope of the Contract. The box for indirect participation shall be marked if the proposed MBE or WBE will not be directly involved in the Contract but will be utilized by the Bidder or Proposer for other services not related to the Contract. Indirect Participation shall not be counted toward the participation goal. Each Letter of Intent shall accurately detail the work to be performed by the relevant MBE or WBE firm, the agreed dollar amount, the percentage of work, and the terms of payment.

**Failure to include Letter(s) of Intent will render the submission not Responsive and shall be cause for the CPO to reject the Bid or Proposal.**

All Bids and Proposals must conform to the commitments made in the corresponding Letter(s) of Intent, as may be amended through change orders.

The Contract Compliance Director may at any time request supplemental information regarding Letter(s) of Intent, and such information shall be furnished if the corresponding Bid or Proposal is to be deemed responsive.

**2. Letter(s) of Certification**

Only current Letter(s) of Certification from one of the following entities may be accepted as proof of certification for MBE/WBE status, provided that Cook County's requirements for certification are met:

- County of Cook
- City of Chicago

Persons that are currently certified by the City of Chicago in any area other than Construction/Public Works shall also complete and submit a MBE/WBE Reciprocal Certification Affidavit along with a current letter of certification from the City of Chicago. This Affidavit form can be downloaded from [www.cookcountyil.gov/contractcompliance](http://www.cookcountyil.gov/contractcompliance).

The Contract Compliance Director may reject the certification of any MBE or WBE on the ground that it does not meet the requirements of the Ordinance, or the policies and rules promulgated thereunder.

**3. Joint Venture Affidavit**

In the event a Bid or Proposal achieves MBE and/or WBE participation through a Joint Venture, the Bid or Proposal shall include the required Joint Venture Affidavit, which can be downloaded from [www.cookcountyil.gov/contractcompliance](http://www.cookcountyil.gov/contractcompliance). The Joint Venture Affidavit shall be submitted with the Bid or Proposal, along with current Letter(s) of Certification.

GENERAL CONDITIONSGC-19 MINORITY AND WOMEN BUSINESS ENTERPRISES  
COOK COUNTY ORDINANCE CHAPTER 34, DIVISION 8 SECTION 34-260 to SECTION 34-300 (con't.)

## B. Petition for Reduction/Waiver

In the event a Bid or Proposal does not meet the Contract specific goals for MBE and WBE participation, the Bid or Proposal shall include a Petition for Reduction/Waiver, as set forth on Form 3. The Petition for Reduction/Waiver shall be supported by sufficient evidence and documentation to demonstrate the Bidder or Proposer's Good Faith Efforts in attempting to achieve the applicable MBE and WBE goals, and its inability to do so despite its Good Faith Efforts.

**Failure to include Petition for Reduction/Waiver will render the submission not Responsive and shall be cause for the CPO to reject the Bid or Proposal.**

III. REDUCTION/WAIVER OF MBE/WBE GOALS

## A. Granting or Denying a Reduction/Waiver Request.

1. The adequacy of the Good Faith Efforts to utilize MBE and WBE firms in a Bid or Proposal will be evaluated by the CCD under such conditions as are set forth in the Ordinance, the policies and rules promulgated thereunder, and in the "Petition for Reduction/Waiver of MBE/WBE Participation Goals" – Form 3 of the M/WBE Compliance Forms.
2. With respect to a Petition for Reduction/Waiver, the sufficiency or insufficiency of a Bidder or Proposer's Good Faith Efforts shall be evaluated by the CCD as of the date upon which the corresponding Bid or Proposal was due.
3. The Contract Compliance Director or his or her duly authorized Waiver Committee may grant or deny the
4. Petition for Reduction/Waiver based upon factors including but not limited to: (a) whether sufficient qualified MBE and WBE firms are unavailable despite good faith efforts on the part of the Bidder or Proposer; (b) the degree to which specifications and the reasonable and necessary requirements for performing the Contract make it impossible or economically infeasible to divide the Contract into sufficiently small tasks or quantities so as to enable the Bidder or Proposer to utilize MBE and WBE firms in accordance with the applicable goals; (c) the degree to which the prices or prices required by any potential MBE or WBE are more than 10% above competitive levels; and (d) such other factors as are determined relevant by the Contract Compliance Director or the duly authorized Waiver Committee.
5. If the Contract Compliance Director or the duly authorized Waiver Committee determines that the Bidder or Proposer has not demonstrated sufficient Good Faith Efforts to meet the applicable MBE and WBE goals, the Contract Compliance Director or the duly authorized Waiver Committee may deny a Petition for Reduction/Waiver, declare the Bid or Proposal non-responsive, and recommend rejection of the Bid, Quotation, or Proposal.

IV. CHANGES IN CONTRACTOR'S UTILIZATION PLAN

- A. A Contractor, during its performance of the Contract, may not change the original MBE or WBE commitments specified in the relevant Utilization Plan, including but not limited to, terminating a MBE or WBE Contract, reducing the scope of the work to be performed by a MBE/WBE, or decreasing the price to a MBE/WBE, except as otherwise provided by the Ordinance and according to the policies and procedures promulgated thereunder.
- B. Where a Person listed under the Contract was previously considered to be a MBE or WBE but is later found not to be, or work is found not to be creditable toward the MBE or WBE goals as stated in the Utilization Plan, the Contractor shall seek to discharge the disqualified enterprise, upon proper written notification to the Contract Compliance Director, and make every effort to identify and engage a qualified MBE or WBE as its replacement. Failure to obtain an MBE or WBE replacement within 30 business days of the Contract Compliance Director's written approval of the removal of a purported MBE or WBE may result in the termination of the Contract or the imposition of such remedy authorized by the Ordinance, unless a written Petition for Reduction/Waiver is granted allowing the Contractor to award the work to a Person that is not certified as an MBE or WBE.



GENERAL CONDITIONSGC-19 MINORITY AND WOMEN BUSINESS ENTERPRISES  
COOK COUNTY ORDINANCE CHAPTER 34, DIVISION 8 SECTION 34-260 to SECTION 34-300 (con't.)V. NON-COMPLIANCE

If the CCD determines that the Contractor has failed to comply with its contractual commitments or any portion of the Ordinance, the policies and procedures promulgated thereunder, or this GC-19, the Contract Compliance Director shall notify the Contractor of such determination and may take any and all appropriate actions as set forth in the Ordinance or the policies and procedures promulgated thereunder which includes but is not limited to disqualification, penalties, withholding of payments or other remedies in law or equity.

VI. REPORTING/RECORD-KEEPING REQUIREMENTS

The Contractor shall comply with the reporting and record-keeping requirements in the manner and time established by the Ordinance, the policies and procedure promulgated thereunder, and the Contract Compliance Director. Failure to comply with such reporting and record-keeping requirements may result in a declaration of Contract default. Upon award of a Contract, a Contractor shall acquire and utilize all Cook County reporting and record-keeping forms and methods which are made available by the Office of Contract Compliance. MBE and WBE firms shall be required to verify payments made by and received from the prime contractor.

VII. EQUAL EMPLOYMENT OPPORTUNITY

Compliance with MBE and WBE requirements will not diminish or supplant other legal Equal Employment Opportunity and Civil Rights requirements that relate to contractor and subcontractor obligations.

Any questions regarding this section should be directed to:

Contract Compliance Director  
Cook County  
118 North Clark Street, Room 1020  
Chicago, Illinois 60602  
(312) 603-5502

GC-20 MATERIAL DATA SAFETY SHEET

Where required under the Illinois "Toxic Substance Disclosure to Employees Act", Illinois Compiled Statutes, 820 ILCS 255/1, Contractor shall submit with each delivery of Contract goods, equipment or supplies a Material Data Safety Sheet.

GC-21 CONDUCT OF THE CONTRACTOR

The Contractor agrees to inform the County on a timely basis of all of the Contractor's interests, if any, which are or which the Contractor reasonably believes may be incompatible with any interest of the County. The Contractor shall take notice of and comply with the Cook County Lobbyist Registration Ordinance, Section 2-621 et al., Cook County Code. The Contractor shall not use for personal gain or make other improper use of privileged information which is acquired in connection with the Contract.

GC-22 ACCIDENT REPORTS

The Chief Procurement Officer and Director shall be given written notification within twenty-four (24) hours of any occurrence, on the site or otherwise, which pertains in any way to the performance of this Contract and involves the Contractor's personnel, or those of any of his subcontractors or others whether said occurrence be in the nature of bodily injury to employees or third parties or property damage.

The report shall include the name of person(s) injured, name of his employer, date, time and location of occurrence, extent of injury and/or damage, name(s) of eyewitnesses, and who treated the person(s) for injuries sustained, and such other information as may be relevant. The Contractor shall notify the local police of any occurrence requiring an official police record. The accident report should indicate whether the police were notified and, if so, the number of the police report.

GENERAL CONDITIONSGC-23 USE OF PREMISES

Contractor shall confer with the Director to ascertain full knowledge of all rules and regulations of the County facilities relative to this Contract and shall comply therewith. The Contractor shall confine the operations of its employees to the limits indicated by laws, ordinances, permits and/or direction of the Director and shall not encumber the premises with materials or debris. The Contractor shall not load or permit any part of the structure to be loaded with a weight that will endanger its structural integrity.

The County reserves the right to prohibit any person from entering any County facility for any reason. All subcontractors, agents and employees of the Contractor shall be accountable to the Director while on any County property and shall abide by all security regulations imposed by the County.

GC-24 GENERAL NOTICE

All notices required pursuant to this Contract shall be in writing and addressed to the parties at their respective addresses set forth below. All such notices shall be deemed duly given if hand delivered or if deposited in the United States mail, registered or certified, return receipt requested. Notice as provided herein does not waive service of summons or process.

## TO THE COUNTY:

Chief Procurement Officer  
County of Cook  
Room 1018 County Building  
118 North Clark Street  
Chicago, Illinois 60602  
(Reference County Contract Number)

## TO THE CONTRACTOR:

At address provided in its bid document or as otherwise indicated in writing to County.

GC-25 TERMINATION FOR CONVENIENCE

The County may terminate this Contract, or any portion, at any time by notice in writing from the County to the Contractor. Unless otherwise stated in the notice, the effective date of such termination shall be three business days after the date the notice of termination is mailed by the County. If the County elects to terminate the Contract in full, unless otherwise specified in the notice of termination, the Contractor shall immediately cease performance and shall promptly tender to the County all work products, reviews, recommendations, reports, documents and analyses, whether completed or in process. If the County elects to terminate the Contract in part, unless otherwise specified in the notice of partial termination, the Contractor shall immediately cease performance of those portions of the Contract which are terminated and shall promptly tender to the County all work products, reviews, recommendations, reports, documents and analyses relating to said portions of the Contract, whether completed or in process. Contractor shall refrain from incurring any further costs with respect to portions of the Contract which are terminated except as specifically approved by the Chief Procurement Officer. The Contractor shall not invoice the County for any goods, equipment, supplies or services provided after the effective date of termination.

GC-26 GUARANTEES AND WARRANTIES

Unless otherwise stated herein, all guarantees and warranties required shall be furnished by the Contractor and shall be delivered to the Director before final payment on the Contract is issued. The Contractor agrees that the Contract goods, equipment, supplies or services to be furnished shall be covered by the most favorable commercial warranties the Contractor gives to any customer for the same or substantially similar Contract goods, equipment, supplies or services and that the rights and remedies so provided are in addition to and do not limit any rights afforded to County.

GENERAL CONDITIONSGC-27 STANDARD OF CONTRACT GOODS, EQUIPMENT OR SUPPLIES

Only new, originally manufactured Contract goods, equipment or supplies will be accepted by the County. The County will not accept any Contract goods, equipment or supplies that have been refurbished, rebuilt, restored or renovated in any manner. In addition, experimental materials will not be acceptable. Contract goods, equipment or supplies not produced by regular production methods and/or which have not been offered for sale to the public through accepted industry trade channels for a reasonable period of time prior to the offering of the proposal, will be considered experimental.

GC-28 CONFIDENTIALITY AND OWNERSHIP OF DOCUMENTS

Contractor acknowledges and agrees that information regarding this Contract is confidential and shall not be disclosed, directly, indirectly or by implication, or be used by Contractor in any way, whether during the term of this Contract or at any time thereafter, except solely as required in the course of Contractor's performance of the Contract. Contractor shall comply with the applicable privacy laws and regulations affecting the County and will not disclose any of County's records, materials, or other data to any third party. Contractor shall not have the right to compile and distribute statistical analyses and reports utilizing data derived from information or data obtained from County without the prior written approval of County. In the event such approval is given, any such reports published and distributed by Contractor shall be furnished to County without charge.

All documents, data, studies, reports, work product or product created as a result of the performance of this Contract shall be the property of the County of Cook. It shall be a breach of this Contract for the Contractor to reproduce or use, any documents, data, studies, report, work product or product obtained from the County of Cook or created hereby for its own purposes or to be copied and used by any third party. During the performance of the services herein provided for, the Contractor shall be responsible of any loss or damage to the County's documents while they are in the Contractor's possession, and any such document lost or damaged shall be restored at the expense of the Contractor.

GC-29 QUANTITIES

The quantities of materials required for the performance of the Contract are estimates for the purpose of determining an approximate total Contract amount and may not be the actual quantities required during the term of the Contract. The County reserves the right to increase or decrease the quantities at the Contract price, to correspond to the actual needs of the County. The County will be obligated to order and pay for only such quantities as are from time to time ordered, delivered, and accepted on purchase orders issued by the Chief Procurement Officer.

GC-30 AUDIT; EXAMINATION OF RECORDS

The Contractor agrees that the Cook County Auditor or any of its duly authorized representatives shall, until expiration of three (3) years after the final payment under the Contract, have access and the right to examine any books, documents, papers, canceled checks, bank statements, purveyor's and other invoices, and records of the Contractor related to the Contract, or to Contractor's compliance with any term, condition or provision thereof. The Contractor shall be responsible for establishing and maintaining records sufficient to document the costs associated with performance under the terms of this Contract.

The Contractor further agrees that it shall include in all of its subcontracts hereunder a provision to the effect that the subcontractor agrees that the Cook County Auditor or any of its duly authorized representatives shall, until expiration of three (3) years after final payment under the subcontract, have access and the right to examine any books, documents, papers, canceled checks, bank statements, purveyor's and other invoices and records of such subcontractor involving transactions relating to the subcontract, or to such subcontractor's compliance with any term, condition or provision thereunder or under the Contract.

In the event the Contractor receives payment under the Contract, reimbursement for which is later disallowed by the County, the Contractor shall promptly refund the disallowed amount to the County on request, or at the County's option, the County may credit the amount disallowed from the next payment due or to become due to the Contractor under any contract with the County.

GENERAL CONDITIONSGC-31 GOVERNING LAW

This Contract shall be governed by and construed under the laws of the State of Illinois. The Contractor irrevocably agrees that, subject to the County's sole and absolute election, any action or proceeding in any way, manner or respect arising out of the Contract, or arising from any dispute or controversy in connection with or related to the Contract, shall be litigated only in courts within the Circuit Court of Cook County, State of Illinois, and the Contractor consents and submits to the jurisdiction thereof. In accordance with these provisions, Contractor waives any right it may have to transfer or change the venue of any litigation brought against it by the County pursuant to this Contract.

GC-32 COOPERATION WITH INSPECTOR GENERAL

Contractors, subcontractors, licensees, grantees or persons or businesses who have a County contract, grant, license, or certification of eligibility for County contracts shall abide by all of the applicable provisions of the Office of the Independent Inspector General Ordinance (Section 2-281 et. seq. of the Cook County Code of Ordinances). Failure to cooperate as required may result in monetary and/or other penalties.

GC-33 WAIVER

No term or provision of this Contract shall be deemed waived and no breach consented to unless such waiver or consent shall be in writing and signed by the party claimed to have waived or consented. The waiver of any such provision shall be strictly limited to the identified term or provision.

GC-34 ENTIRE CONTRACT

It is expressly agreed that the provisions set forth in this Contract constitute all the understandings and agreements between the parties. Any prior agreements, promises, negotiations, or representations not expressly set forth in this Contract are of no force and effect.

GC-35 FORCE MAJEURE

Neither Contractor nor County shall be liable for failing to fulfill any obligation under this Contract if such failure is caused by an event beyond such party's reasonable control and which is not caused by such party's fault or negligence. Such events shall be limited to acts of God, acts of war, fires, lightning, floods, epidemics, or riots.

GC-36 GOVERNMENTAL JOINT PURCHASING AGREEMENT

Pursuant to Section 4 of the Illinois Governmental Joint Purchasing Act (30 ILCS 525) and the Joint Purchase Agreement approved by the Cook County Board of Commissioners (April 9, 1965), other units of government may purchase goods, supplies, equipment or services under this Contract.

In the event that other agencies participate in a joint procurement, the County reserves the right to renegotiate the price to accommodate the larger volume.

GC-37 COMPARABLE GOVERNMENT PROCUREMENT

As permitted by the County of Cook, other government entities, if authorized by law, may wish to also purchase the goods, supplies, services or equipment under the same terms and conditions contained in this Contract (i.e., comparable government procurement). Each entity wishing to reference this Contract must have prior authorization from the County of Cook and the Contractor. If such participation is authorized, all purchase orders will be issued directly from and shipped directly to the entity requiring the goods, supplies, equipment or services. The County shall not be held responsible for any orders placed, deliveries made or payment for the goods, supplies, equipment or services ordered by these entities. Each entity reserves the right to determine the amount of goods, supplies, equipment or services it wishes to purchase under this Contract.

GENERAL CONDITIONSGC-38 FEDERAL CLAUSES

The following provisions apply to all Contracts which are funded in whole or in part with federal funds.

1. Interest of Members of or Delegates to the United States Congress

In accordance with 41 U.S.C. § 22, the Contractor agrees that it will not admit any member of or delegate to the United States Congress to any share or part of the Contract or any benefit derived therefrom.

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2. False or Fraudulent Statements and Claims

(a) The Contractor recognizes that the requirements of the Program Fraud Civil Remedies Act of 1986, as amended, 49 U.S.C. §§ 3081 et seq and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to the Contract. Accordingly, by signing the Contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, or it may make pertaining to the Contract, including without limitation any invoice for its services. In addition to other penalties that may be applicable, the Contractor also acknowledges that if it makes a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986, as amended, on the Contractor to the extent the Federal Government deems appropriate.

(b) The Contractor also acknowledges that if it makes a false, fictitious, or fraudulent claim, statement, submission, or certification to the County or Federal Government in connection with an urbanized area formula project financed with Federal assistance authorized by 49 U.S.C. § 5307, the Government reserves the right to impose on the Contractor the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5307(n)(1), to the extent the Federal Government deems appropriate.

3. Federal Interest in Patents

(a) General. If any invention, improvement, or discovery of the Contractor is conceived or first actually reduced to practice in the course of or under the Contract, and that invention, improvement, or discovery is patentable under the laws of the United States of America or any foreign country, the Contractor agrees to notify County immediately and provide a detailed report.

(b) Federal Rights. Unless the Federal Government later makes a contrary determination in writing, the rights and responsibilities of the County, Contractor, and the Federal Government pertaining to that invention, improvement, or discovery will be determined in accordance with applicable Federal laws and regulations, including any waiver thereof. Unless the Federal Government later makes a contrary determination in writing, the Contractor agrees that, irrespective of its status or the status of any subcontractor at any tier (e.g., a large business, small business, non-profit organization, institution of higher education, individual), the Contractor agrees it will transmit to the Federal Government those rights due the Federal Government in any invention resulting from the contract.

4. Federal Interest in Data and Copyrights

(a) Definition. The term "subject data" used in this section means recorded information, whether or not copyrighted, that is delivered or specified to be delivered under the Contract. Examples include, but are not limited, to: computer software, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identifications, and related information. The term "subject data" does not include financial reports, cost analyses, and similar information incidental to Contract administration.

GENERAL CONDITIONS

- (b) Federal Restrictions. The following restrictions apply to all subject data first produced in the performance of the Contract. Except as provided in the Contract and except for its own internal use, the Contractor may not publish or publicly reproduce subject data in whole or in part, or in any manner or form, nor may the Contractor authorize others to do so, without the written consent of the County and the Federal Government, until such time as the Federal Government may have either released or approved the release of such data to the public.
- (c) Federal Rights in Data and Copyrights. In accordance with subparts 34 and 36 of the Common Rule, the County and the Federal Government reserve a royalty-free, non-exclusive and irrevocable license to reproduce, publish, or otherwise use, and to authorize others to use, for County or Federal Government purposes, the types of subject data described below. Without the copyright owner's consent, the County and Federal Government may not extend their license to other parties.
- (1) Any subject data developed under the contract or subagreement financed by a federal Grant Agreement or Cooperative Agreement, whether or not a copyright has been obtained; and
  - (2) Any rights of copyright which the Contractor purchases ownership with Federal assistance.
- (d) Special Federal Rights for Planning Research and Development Projects. When the Federal Government provides financial assistance for a planning, research, development, or demonstration project, its general intention is to increase public knowledge, rather than limit the benefits of the project to participants in the project. Therefore, unless the Federal Government determines otherwise, the Contractor on a planning, research, development, or demonstration project agrees that, in addition to the rights in data and copyrights set forth above, the County or Federal Government may make available to any third party either a license in the copyright to the subject data or a copy of the subject data. If the project is not completed for any reason whatsoever, all data developed under the project will become subject data and will be delivered as the County or Federal Government may direct. This subsection, however, does not apply to adaptations of automatic data processing equipment or previously existing software programs for the County's use whose costs are financed with Federal transportation funds for capital projects.
- (e) Hold Harmless. Unless prohibited by state law, upon request by the County or the Federal Government, the Contractor agrees to indemnify, save, and hold harmless the County and the Federal Government and their officers, agents, and employees acting within the scope of their official duties against any liability, including costs and expenses, resulting from any willful or intentional violation by the Contractor of proprietary rights, copyrights, or right of privacy, arising out of the publication, translation, reproduction, delivery, use, or disposition of any data furnished under the Contract. The Contractor will not be required to indemnify the County or Federal Government for any such liability arising out of the wrongful acts of employees or agents of the County or Federal Government.
- (f) Restrictions on Access to Patent Rights. Nothing contained in this section on rights in data will imply a license to the County or Federal Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the County or Federal Government under any patent.
- (g) Application on Materials Incorporated into Project. The requirements of Subsections 2, 3, and 4 of this Section do not apply to material furnished by the County and incorporated into the work.

GENERAL CONDITIONSGC-38 FEDERAL CLAUSES (con't.)5. Records and Audits

Contractor will deliver or cause to be delivered all documents (including but not limited to all Deliverables and supporting data, records, graphs, charts and notes) prepared by or for the County under the terms of this Agreement to the County promptly in accordance with the time limits prescribed in this Contract, and if no time limit is specified, then upon reasonable demand therefor or upon termination or completion of the Services hereunder. In the event of the failure by the Contractor to make such delivery, then and in that event, the Contractor will pay to County reasonable damages the County may sustain by reason thereof.

The County and the Federal Government will have the right to audit all payments made to the Contractor under this Agreement. Any payments to the Contractor which exceed the amount to which the Contractor is entitled under the terms of this Agreement will be subject to set-off.

The Contractor will keep and retain records relating to this Agreement and will make such records available to representatives of the County and the Federal Government, including without limitation the sponsoring federal agency, other participating agencies, and the Comptroller General of the United States, at reasonable times during the performance of this Agreement and for at least five years after termination of this Agreement for purposes of audit, inspection, copying, transcribing and abstracting.

No provision in this Agreement granting the County or the Federal Government a right of access to records is intended to impair, limit or affect any right of access to such records which the County or the Federal Government would have had in the absence of such provisions.

6. Environmental Requirements

The Contractor recognizes that many Federal and state laws imposing environmental and resource conservation requirements may apply to the Contract. Some, but not all, of the major Federal Laws that may affect the Contract include: the National Environmental Policy Act of 1969, as amended, 42 U.S.C. §§ 4321 et seq.; the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. and scattered sections of 29 U.S.C.; the Clean Water Act, as amended, scattered sections of 33 U.S.C. and 12 U.S.C.; the Resource Conservation and Recovery Act, as amended, 42 U.S.C. §§ 6901 et seq.; and the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9601 et seq. The Contractor also recognizes that U.S. EPA, U.S. DOT and other agencies of the Federal Government have issued and are expected in the future to issue regulations, guidelines, standards, orders, directives, or other requirements that may affect the Contract. Thus, the Contractor agrees to adhere to, and impose on its subcontractors, any such Federal requirements as the Federal Government may now or in the future promulgate. Listed below are requirements of particular concern.

The Contractor acknowledges that this list does not constitute the Contractor's entire obligation to meet all Federal environmental and resource conservation requirements. The Contractor will include these provisions in all subcontracts.

- (a) Environmental Protection. The Contractor agrees to comply with the applicable requirements of the National Environmental Policy Act of 1969, as amended, 42 U.S.C. §§ 4321 et seq. in accordance with Executive Order No. 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," 59 Fed. Reg. 7629, Feb. 16, 1994; U.S. DOT statutory requirements on environmental matters at 49 U.S.C. § 5324(b); Council on Environmental Quality regulations on compliance with the National Environmental Policy Act of 1969, as amended, 40 C.F.R. Part 1500 et seq.; and U.S. DOT regulations, "Environmental Impact and Related Procedures," 23 C.F.R. Part 771 and 49 C.F.R. Part 622.

GENERAL CONDITIONSGC-38 FEDERAL CLAUSES (con't.)

- (b) **Air Quality.** The Contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. Specifically, the Contractor agrees to comply with applicable requirements of U.S. EPA regulations, "Conformity to State of Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act," 40 C.F.R. Part 51, Subpart T; and "Determining Conformity of Federal Actions to State or Federal Implementation Plans," 40 C.F.R. Part 93. The Contractor further agrees to report and require each subcontractor at any tier to report any violation of these requirements resulting from any Contract implementation activity to the County and the appropriate U.S. EPA Regional Office.
- (c) **Clean Water.** The Contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§ 1251 et seq. The Contractor further agrees to report and require each subcontractor at any tier to report any violation of these requirements resulting from any Contract implementation activity to the County and the appropriate U.S. EPA Regional Office.
- (d) **List of Violating Facilities.** The Contractor agrees that any facility to be used in the performance of the Contract or to benefit from the Contract will not be listed on the U.S. EPA List of Violating Facilities ("List"), and the Contractor will promptly notify the County if the Contractor receives any communication from the U.S. EPA that such a facility is under consideration for inclusion on the List.
- (e) **Preference for Recycled Products.** To the extent practicable and economically feasible and to the extent that it does not reduce or impair the quality of the work, the Contractor agrees to use recycled products in performance of the Contract pursuant to U.S. Environment Protection Agency (U.S. EPA) guidelines at 40 C.F.R. Parts 247-253, which implement section 6002 of the Resource Conservation and Recovery Act, as amended, 42 U.S.C. § 6962.

7. No Exclusionary or Discriminatory Specifications

Apart from inconsistent requirements imposed by Federal statute or regulations, the Contractor agrees that it will comply with the requirements of 49 U.S.C. § 5323(h)(2) by refraining from using any Federal assistance to support subcontracts procured using exclusionary or discriminatory specifications.

8. Cargo Preference - Use of United States Flag Vessels

The Contractor agrees to comply with U.S. Maritime Administration regulations, "Cargo-Preference -- U.S. Flag Vessels," 49 C.F.R. Part 381, and to include the clauses required by those regulations, modified as necessary to identify the affected parties, in each subcontract or subagreement involving equipment, materials, or commodities suitable for transport by ocean vessel.

9. Fly America

Section 14.c of the Master Agreement states that if the contract or subcontracts may involve the international transportation of goods, equipment, or personnel by air, the contract must require Contractors and subcontractors at every tier to use U.S.-flag air carriers, to the extent service by these carriers is available. 49 U.S.C. 40118 and 4 C.F.R. Part 52.



GENERAL CONDITIONSGC-38 FEDERAL CLAUSES (con't.)10. No Federal Government Obligations to Third Parties

The Contractor agrees that, absent the Federal Government's express written consent, the Federal Government will not be subject to any obligations or liabilities to any contractor or any other person not a party to the Grant Agreement or Cooperative Agreement between the County and the Federal Government which is a source of funds for this Contract. Notwithstanding any concurrence provided by the Federal Government in or approval of any solicitation, agreement, or contract, the Federal Government continues to have no obligations or liabilities to any party, including the Contractor.

11. Allowable Costs

Notwithstanding any compensation provision to the contrary, the Contractor's compensation under this Contract will be limited to those amounts which are allowable and allocable to the Contract in accordance

with OMB Circular A-87 and the regulations in 49 C.F.R. Part 18. To the extent that an audit reveals that the Contractor has received payment in excess of such amounts, the County may offset such excess payments against any future payments due to the Contractor and, if no future payments are due or if future payments are less than such excess, the Contractor will promptly refund the amount of the excess payments to the County.

12. Trade Restrictions

Contractor certifies that neither it nor any Subcontractor:

- (a) is owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR);
- (b) has knowingly entered into any contract or subcontract with a person that is a citizen or national of a foreign country on said list, nor is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list;
- (c) will procure, subcontract for, or recommend any product that is produced in a foreign country on said list.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no Notice-to-Proceed will be issued to an entity who is unable to certify to the above. If Contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on said list for use on the project, the USDOT may direct, through the County, cancellation of the Contract at no cost to the Government.

Further, Contractor agrees that it will incorporate this provision for certification without modification in each subcontract. Contractor may rely on the certification of a prospective Subcontractor unless it has knowledge that the certification is erroneous. Contractor will provide immediate written notice to the County if it learns that its certification or that of a Subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. Each Subcontractor must agree to provide written notice to Contractor if at any time it learns that its certification was erroneous by reason of changed circumstances. Nothing contained in the foregoing will be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision.

The knowledge and information of the Contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

GENERAL CONDITIONSGC-38 FEDERAL CLAUSES (con't.)

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 100.

13. Contract Work Hours and Safety Standards Act

If applicable according to their terms, the Contractor agrees to comply and assures compliance with sections 102 and 107 of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. §§ 327 through 333, and implementing U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the Contract Work Hours and Safety Standards Act)," 29 C.F.R. Part 5; and U.S. DOL regulations, "Safety and Health Regulations for Construction," 29 C.F.R. Part 1926. In addition to other requirements that may apply:

- (a) In accordance with section of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. §§ 327 through 332, the Contractor agrees and assures that, for the Contract, the wages of every mechanic and laborer will be computed on the basis of a standard work week of 40 hours, and that each worker will be compensated for work exceeding the standard work week at a rate of not less than 1.5 times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The Contractor agrees that determinations pertaining to these requirements will be made in accordance with applicable U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the Contract Work Hours and Safety Standards Act)," 29 C.F.R. Part 5.
- (b) In accordance with section 107 of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. § 333, the contractor agrees and assures that no laborer or mechanic working on a construction contract will be required to work in surroundings or under working conditions that are unsanitary, hazardous, or dangerous to his or her health and safety, as determined in accordance with U.S. DOL regulations, "Safety and Health Regulations for Construction," 29 C.F.R. Part 1926.

14. Veteran's Preference

In the employment of labor (except in executive, administrative, and supervisory positions), preference will be given to Vietnam-era veterans and disabled veterans. However, this preference may be given only where individuals are available and qualified to perform the work to which employment relates.

15. Copyright Ownership

Consultant and the County intend that, to the extent permitted by law, the Deliverables to be produced by Consultant at the County's instance and expense pursuant to this Agreement are conclusively deemed "works made for hire" within the meaning and purview of Section 101 of the United States Copyright Act, 17 U.S.C. §101 et seq. (the "Copyright Act"), and that the County will be the copyright owner of the Deliverables and of all aspects, elements and components of them in which copyright can subsist.

To the extent that any Deliverable does not qualify as a "work made for hire," Consultant irrevocably grants, conveys, bargains, sells, assigns, transfers and delivers to the County, its successors and assigns, all right, title and interest in and to the copyrights and all U.S. and foreign copyright registrations, copyright applications and copyright renewals for them, and other intangible, intellectual property embodied in or pertaining to the Deliverables prepared for the County under this Agreement, free and clear of any liens, claims or other encumbrances, to the fullest extent permitted by law. Consultant will execute all documents and perform all acts that the County may reasonably request in order to assist the County in perfecting its rights in and to the copyrights relating to the Deliverables, at the sole expense of the County.

GENERAL CONDITIONSGC-38 FEDERAL CLAUSES (con't.)

Consultant warrants to County, its successors and assigns, that on the date of transfer Consultant is the lawful owner of good and marketable title in and to the copyrights for the Deliverables and has the legal rights to fully assign them. Consultant further warrants that it has not assigned any copyrights nor granted any licenses, exclusive or nonexclusive, to any other party, and that it is not a party to any other agreements or subject to any other restrictions with respect to the Deliverables. Consultant warrants and represents that the Deliverables are complete and comprehensive, and the Deliverables are a work of original authorship.

16. Accessibility Compliance

If this Agreement involves design for construction, the Consultant warrants that all design documents produced or utilized under this Agreement and all construction or alterations undertaken under this Agreement will comply with all federal, state and local laws and regulations regarding accessibility standards for persons with disabilities or environmentally limited persons including, but not limited to, the following: the Americans with Disabilities Act of 1990, 42 U.S.C. § 12101 et seq. and the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities ("ADAAG"); the Architectural Barriers Act, Pub. L. 90-480 (1968), and the Uniform Federal Accessibility Standards ("UFAS"); and the Illinois Environmental Barriers Act, 410 ILCS 25/1 et seq., and all regulations promulgated thereunder, see Illinois Administrative Code, Title 71, Chapter 1, Section 400.110. If the above standards are inconsistent, the Consultant must comply with the standard providing the greatest accessibility. Also, the Consultant must, prior to construction,

review the plans and specifications to insure compliance with the above referenced standards. If the Consultant fails to comply with the foregoing standards, the Consultant must perform again, at no expense, all services required to be re-performed as a direct or indirect result of such failure.

17. Visual Rights Act Waiver

The Consultant/Contractor waives any and all rights that may be granted or conferred under Section 106A and Section 113 of the United States Copyright Act, (17 U.S.C. § 101 et seq.) (the "Copyright Act") in any work of visual art that may be provided pursuant to this Agreement. Also, the Consultant/Contractor represents and warrants that the Consultant/Contractor has obtained a waiver of Section 106A and Section 113 of the Copyright Act as necessary from any employees and subcontractors, if any.

18. Equal Employment Opportunity

All contracts shall contain a provision requiring compliance with E.O. 11246, "Equal Employment Opportunity," as amended by E.O. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

19. Copeland "Anti-Kickback" Act (18 U.S.C. 874 and 40 U.S.C. 276c)

All contracts and subgrants in excess of \$2000 for construction or repair awarded by recipients and subrecipients shall include a provision for compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. 874), as supplemented by Department of Labor regulations (29 CFR part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he is otherwise entitled. The recipient shall report all suspected or reported violations to the Federal awarding agency.

GENERAL CONDITIONSGC-38 FEDERAL CLAUSES (con't.)20. Davis-Bacon Act, as amended (40 U.S.C. 276a to a-7)

When required by Federal program legislation, all construction contracts awarded by the recipients and subrecipients of more than \$2000 shall include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 276a to a-7) and as supplemented by Department of Labor regulations (29 CFR part 5, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction").

Under this Act, contractors shall be required to pay wages to laborers and mechanics at a rate not less than the minimum wages specified in a wage determination made by the Secretary of Labor. In addition, contractors shall be required to pay wages not less than once a week. The recipient shall place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation and the award of a contract shall be conditioned upon the acceptance of the wage determination. The recipient shall report all suspected or reported violations to the Federal awarding agency.

21. Contract Work Hours and Safety Standards Act (40 U.S.C. 327-333)

Where applicable, all contracts awarded by recipients in excess of \$2000 for construction contracts and in excess of \$2500 for other contracts that involve the employment of mechanics or laborers shall include a provision for compliance with Sections 102 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-333), as supplemented by Department of Labor regulations (29 CFR part 5). Under Section 102 of the Act, each contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than 1 ½ times the basic rate of pay for all hours worked in excess of 40 hours in the work week. Section 107 of the Act is applicable to construction work and provides that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

22. Rights to Inventions Made Under a Contract or Agreement

Contracts or agreements for the performance of experimental, developmental, or research work shall provide for the rights of the Federal Government and the recipient in any resulting invention in accordance with 37 CFR part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

23. Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), as amended

Contracts and subgrants of amounts in excess of \$100,000 shall contain a provision that requires the recipient to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251 et seq.). Violations shall be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

GENERAL CONDITIONSGC-38 FEDERAL CLAUSES (con't.)24. Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)

Contractors who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.

25. Debarment and Suspension (E.O.s 12549 and 12689)

No contract shall be made to parties listed on the General Services Administration's List of Parties Excluded from Federal Procurement or Nonprocurement Programs in accordance with E.O.s 12549 and 12689, "Debarment and Suspension." This list contains the names of parties debarred, suspended, or otherwise excluded by agencies, and contractors declared ineligible under statutory or regulatory authority other than E.O. 12549. Contractors with awards that exceed the small purchase threshold shall provide the required certification regarding its exclusion status and that of its principal employees.

GC-39 CONTRACT INTERPRETATION

Whenever the singular is used herein, the masculine, feminine and neuter gender shall be deemed to include the others. The headings of articles, paragraphs and sections in this Contract are included for convenience only and shall not be considered by either party in construing the meaning of this Contract. If any provision or clause of this Contract shall be held to be invalid, such provision or clause shall be deleted from the Contract and the Contract shall be construed to give effect to the remaining portions thereof.

This Contract shall be interpreted and construed based upon the following order of precedence of component parts. Such order of precedence shall govern to resolve all cases of conflict, ambiguity or inconsistency.

1. Addenda, if any.
2. Special Conditions
3. Specification.
4. General Conditions.
5. Instruction to Bidders.
6. Legal Advertisement.
7. Bid Proposal.

END OF SECTION

SPECIAL CONDITIONS

<b>Section</b>	<b>Subject</b>	<b>Page</b>
SC-01	Notice	SC-1
SC-02	Scope	SC-2
SC-03	Duration of Contract	SC-2
SC-04	Award of Contract	SC-3
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SC-08	Surety Bond	SC-4
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SC-13	Alternate Proposal	SC-10
SC-14	Specific Equal Employment Opportunity Responsibilities Nonfederal-Aid Contracts	SC-11
SC-15	Joint Ventures	SC-21
SC-16	Pre-Construction Conference	SC-22
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SC-18	Processing Of Extra Work Payment Requests	SC-29
SC-19	Contract	SC-30

SPECIAL CONDITIONS**SC-01 NOTICE****COUNTY OF COOK  
CHICAGO, ILLINOIS****NOTICE*****TO CONTRACTORS FOR A COOK COUNTY DEPARTMENT OF TRANSPORTATION AND HIGHWAYS MAINTENANCE***

Notice is hereby given that sealed bids for a Department of Transportation and Highways Maintenance in the County of Cook, Illinois, will be received at Room 1018, County Building, and 118 North Clark Street, Chicago, Illinois

until 10:00 a.m. September 2, 2016 and then publicly opened and read aloud as described below:

Maintenance Electrical and Mechanical Item Maintenance Township: Various  
 From: Various Locations To: Various locations  
 Route Various Section: 17-8EMIM-00-GM

Cook County Purchasing Contract No.: **1628-15554**

**LOCATION OF MAINTENANCE**

The proposed maintenance is part of the public highway system in the County of Cook, State of Illinois, located by section and route before mentioned, and is indicated on the map showing the County Highway System on file in the office of the County Clerk and also in the office of the Illinois Department of Transportation, Division of Highways, Springfield, Illinois. Various locations throughout the Cook County

**DESCRIPTION OF MAINTENANCE**

The contract is for maintenance of (1) Traffic Signal Installations, (2) Street and Roadway Lighting Systems, (3) Navigation Lighting Systems, Bridge Cathodic Protection Systems, (4) Storm Water Pump Station Systems, and (5) Maintenance Facilities Electrical Systems and their appurtenances, located in Cook County.

The Contractor, for specified unit prices listed under schedule of prices, shall: (1) furnish all labor and provide materials to maintain the respective installations and systems, in first class working order and operating condition at all times, (2) make permanent repairs to damaged equipment, (3) clean, repair, perform preventative maintenance, and overhaul specified equipment at stated intervals of time, (4) provide the necessary transportation for workmen, material, and equipment used to execute the terms of the Contract, (5) PROVIDE CONTINUOUS MAINTENANCE AND REPAIR SERVICE, INCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS to correct any malfunction of equipment or effect any temporary emergency repairs to missing, defective, displaced or damaged equipment resulting from any cause in the shortest possible time, (6) patrol and inspect the respective systems for lamps and other failures and non-operative equipment, shall replace electric lamps in all systems as required, and (7) execute Specialty Items for unit prices as directed by the Engineer, and perform all activities required herein.

SPECIAL CONDITIONS**SC-02 SCOPE**

For the Maintenance of Traffic Signal Installations, Street and Roadway Lighting Systems, Navigation Lighting Systems, Bridge Cathodic Protection Systems, Storm Water Pumping Station Systems, and Maintenance Facilities Electrical Systems as shown on the list attached, all of which are under the jurisdiction of the Cook County Department of Transportation and Highways, State of Illinois.

**SC-03 DURATION OF CONTRACT**

This Contract is for one base year with two (2), one (1), year renewal options. The contract shall be from 12:01 A.M. January 1, 2017 to 12:00 Midnight December 31, 2017.

**Basic Term Requirement:**

This Contract shall be in full force from 12:01 A.M. January 1, 2017 to 12:00 Midnight December 31, 2017 following the date of execution and acceptance of the Contract, subject. However, to the right of the Department to cancel and terminate the same at any time with or without cause, for reasons which the Department believes to be in the public interest by giving thirty (30) days' notice in writing to the Contractor. In the event of such cancellation, the Contractor shall be entitled to receive payment for service and work performed and materials or equipment furnished under the terms of the Contract prior to the effective date of such cancellation, but shall not be entitled to receive any damages on account of such cancellation or any further payment whatsoever. There shall be no payment for incomplete work.

Subsequent to contract execution, the Contractor is expected to immediately begin preparations to assume maintenance responsibilities as specified.

This Department may take possession of the work and all materials, tools, and appliances thereon and thereat, and may finish the work by whatever method it may deem expedient at any time after cancellation notice has been served. This action may be taken by the Engineer for any reason which he deems to be in the public interest and his decision shall be final.

Certain preparatory work, such as determination of patrolman call numbers, spreadsheet development of patrol routes and the transfer of certain County stock inventory, mobilization, purchase of spare material for system equipment repairs and other items, as arranged with the Engineer, shall be performed and completed in advance of January 1, 2017. Such work shall be included in the contract.

The contract shall remain in force, even following the completion of routine maintenance response requirements, until all required routine maintenance work initiated in the term is complete and accepted, and non-routine contract work is complete and accepted, including the correction of identified system deficiencies for transfer to the successful bidder of the subsequent contract, and until formal close-out of the contract.

Generally, the Engineer will cease issuing non-emergency non-routine work authorizations before the end of the routine maintenance term, however, the Engineer may authorize non-routine work while the contract remains in force, even after the end of the routine maintenance term, to facilitate timely completion or to foster integration with other work already authorized or where otherwise is in the interest of the County.



SPECIAL CONDITIONS

Incomplete routine or non-routine work without an approved delayed completion date may cause the application of liquidated damages of the routine maintenance payment, in accordance with terms as stated herein, from either December 31 or, if applicable, from any extended completion date not achieved.

In the final month of routine maintenance for the EMIM, the Engineer may apply a withholding of up to 75% of the final month's routine maintenance billing until all authorized routine and non-routine work is complete, but may progressively release portions of the retainage as the incomplete work is reduced. Key items for completion of work under a calendar year (or term) include:

- All routine works are complete and approved with all documentation.
- All workforce analysis reports are submitted and accepted.

Renewal:

This Department shall, by agreement with the Contractor, have the option to renew this Contract for two one (1) year periods. The first option year would extend the Contract from 12:01 A.M. January 1, 2018 to 12:00 midnight December 31, 2018 and the second option year would extend from 12:01 A.M. January 1, 2019 to 12:00 midnight December 31, 2019. The Contract extension shall be at the same terms and conditions as the original Contract.

The Contract extension shall be made at the discretion of the Department and will be made ninety (90) days in advance of the expiration of the present Contract. The Contractor will then have thirty (30) days in which to acknowledge that He will or will not agree to the extension from the time he is in receipt of such notification. If He extends the Contract, He will have to provide documentation that the Contract Bond and all required insurance policies are extended through the extension period.

SC-04 AWARD OF CONTRACT

The contract shall be awarded to the lowest responsible and responsive bidder whose bid meets the requirements and criteria set forth in the Request for Sealed Bid. All items, unless otherwise stated, will be assumed to meet all specifications and requirements as set forth in the Request for Sealed Bid. Ambiguous bids which are uncertain as to terms, delivery, quantity, or compliance with specifications may be rejected or declared non-responsive. The County shall be sole determinant of the relevant and appropriate cost factors used in evaluating any Base, Options and/or Alternate bids. Bidders must quote all lines for consideration. It is the intent of the County to award this bid in whole and not in part. Only one award will result from this bid.

SC-05 MBE/WBE REQUIREMENTS FOR THIS CONTRACT

The bidder shall have a subcontracting goal of not less than 24 percent (24%) MBE and 10 percent (10%) WBE of the awarded contract price for work to be performed.

The bidder must comply with the County's MBE/WBE participation requirements. The County has issued MBE/WBE goals this Project. The bidder shall submit with its Proposal, an MBE/WBE Utilization Plan indicating how it proposes to meet these goals. If the bidder has not met the goals or made good faith efforts to meet the goals, the bidder's response will (may) be deemed nonresponsive and will not be considered for award.

Certified MBE/WBE bidders may count their own participation, however, a female firm certified as M/WBE or W/MBE may be counted towards the MBE or WBE goal, but not both. (Designations cannot be changed after submission of the compliance plan.)

SPECIAL CONDITIONS

Unless otherwise specified in the Bid Documents, for purposes of this contract, the contract amount is the total bid amount that has been entered on the Proposal Page of the Bid Documents.

**SC-06 PRE-BIDCONFERENCE**

The County will hold a Pre-Bid Conference. Representatives from the Purchasing Department and Cook County Department of Transportation and Highways will comprise the panel to respond to answer any questions regarding this contract to Bid procedures. It is not mandatory that the Contractors attend this Pre-Bid Conference, however it is highly recommended.

Please kindly reserve your attendance with to Cho Ng via e-mail [cho.ng@cookcountyil.gov](mailto:cho.ng@cookcountyil.gov) before August 16, 2016, with firm's name and number of attendees. A maximum of two (2) representatives from each firm may attend.

The Pre-Bid Conference will be held on:

**1:30 p.m., August 16, 2016**  
Cook County Building  
69 W. Washington Street, Suite 2260  
Chicago, Illinois 60602

**SC-07 INQUIRIES**

A copy of any written request for interpretation of documents shall be provided to the Office of the Chief Procurement Officer at the address set forth below.

Inquiries about the interpretation of the Specifications must be made only in writing and shall be directed to the Chief Procurement Officer. Inquiries will be answered in writing, if deemed necessary, by means of an Addendum issued by the Office of the Chief Procurement Officer. (Reference Instructions to Bidders, Section IB-05 "Exceptions", Page IB-2). **Inquiries must be received no later than 3:00 p.m. Chicago Time on August 19, 2016.**

During the bid process, all inquiries must be directed, in writing, only to the Cook County Office of the Chief Procurement Officer as follows:

Shannon E. Andrews  
Cook County Chief Procurement Officer 118 N. Clark Street, Room 1018  
Chicago, IL 60602

or via email to Cho Ng, Assistant Procurement Officer

Contact Info for Cho Ng: 312-603-2391, [cho.ng@cookcountyil.gov](mailto:cho.ng@cookcountyil.gov)

**SC-08 SURETY BOND**

The bidder who submits the proposal accepted by the Board of County Commissioners will execute a contract and furnish a satisfactory surety bond in the amount of one hundred percent (100%) of the contract price within fourteen (14) days after receiving notice of acceptance, such acceptance being contingent upon the fulfillment of these requirements by the bidder. Failure upon the part of the bidder to so execute a contract and surety bond will be considered just cause for the forfeiture of the proposal guaranty as payment of liquidated damages sustained by the County of Cook as the result of such failure and the annulment of acceptance of the proposal. The surety bond must be acceptable to the Board of County Commissioners

SPECIAL CONDITIONS**SC-09 PRE-AWARD MEETING**

The Contractor must attend a Pre-Award Meeting conducted at the time and place designated by the County, if required. All parties in the Contractor's organization having a supervisory or managerial role in this contract shall be in attendance. The County reserves the right to inspect the bidder's and subcontractors' facilities and other operations under their management prior to the award of this sealed bid.

**SC-10 BILLING**

All invoices and 29A voucher forms should be addressed to the following locations:

Cook County Department of Transportation and Highways Design Bureau  
69 West Washington Street, 21<sup>st</sup> Floor  
Chicago, IL 60602

**SC-11 GENERAL INFORMATION**

- 1) If the prospective bidder is in doubt as to the meaning of any part of the plans, specifications of other proposed contract documents, they may submit a written clarification to the Chief Procurement Officer (CPO) for an interpretation thereof. The prospective bidder submitting the request will be responsible for the prompt delivery to the Chief Procurement Officer. Any interpretation of the proposal documents will be made by an addendum duly issued through the Cook County Purchasing website.
- 2) An estimate of quantities of work to be done and material to be furnished under the specifications will be found in the Schedule of Prices. It is the result of calculations and is given as a basis for a comparison of bids and award of a contract.
- 3) The bidder should include in the bid price in his bid for any taxes such as Occupational, Social Security, Unemployment Compensation, etc., which he might be required to pay in connection with the construction of the proposed improvement. The County of Cook will not reimburse the Contractor for the payment of any such taxes.
- 4) The Board of County Commissioners for the County of Cook reserves the right to reject any or all bids and to waive technicalities of form. Bids may be rejected if current work being performed for the County of Cook by the bidder has been unsatisfactory from the standpoint of workmanship or progress, or if the contractor has been awarded work by others subsequent to the issuance of the bid, which may, in the judgement of said Board of County Commissioners of Cook County endanger the prompt completion of the proposed improvement.
- 5) The bidder shall include in his bid a Bid Guarantee in accordance with provisions contained in the proposal form. The return of the bid guarantee will be in accordance with provisions contained in the bid form.
- 6) If bidder is submitting a bid as a Joint Venture, bidder shall complete the County's Joint Venture Forms and shall submit such Joint Venture Forms **when the bid is submitted**. Bidder is reminded that compliance with the Assumed Business Name Act (805 ILCS 405/1 et seq.) is required of all Joint Ventures.

SPECIAL CONDITIONS**SC-12 BIDDING REQUIREMENTS AND CONDITIONS FOR CONTRACT PROPOSALS****Qualification of Bidders**

The Awarding Authority for contract construction work is the County Board of a County. Each prospective bidder, in evidence of competence, shall furnish the Awarding Authority a certified copy of a "Certificate of Eligibility" issued by the Illinois Department of Transportation, and Contractor's Statement of Experience and Financial Condition" with their bid. Each prospective bidder shall furnish a sworn statement as to equipment owned and controlled, previous experience and construction work. The bidder shall have prior experience in all aspects of this project.

If the bidder to whom the award is made is a corporation organized under the laws of the State other than Illinois, the bidder shall furnish the Awarding Authority a copy of the corporation's Certificate of Authority to do business in the State of Illinois with the bid.

The bidder must provide the Awarding Authority a sworn Affidavit of Availability showing all uncompleted contracts awarded to them and all low bids pending award for Federal, State, County, Municipal and private work in the bid. The bidder should file two (2) copies of same with IDOT's District office.

**Examination of Plans, Specifications, Special Provisions, and Site of Work**

The bidder shall, before submitting a bid, carefully examine the provisions of the contract. The bidder shall inspect in detail the site of the proposed work, investigate and become familiar with all the local conditions affecting the contract and fully acquaint themselves with the detailed requirements of construction. Submission of a bid shall be a conclusive assurance and warranty the bidder has made these examinations and the bidder understands all requirements for the performance of the work. If the submitted bid is accepted, the bidder shall be responsible for all errors in the bid resulting from the bidder's failure or neglect to comply with these instructions. The Awarding Authority will, in no case, be responsible for any costs, expenses, losses, or change in anticipated profits resulting from such failure or neglect of the bidder to make these examinations.

The bidder shall take no advantage of any error or omission in the bid documents and advertised contract. Any prospective bidder who desires an explanation or interpretation of the plans, specification, or any of the contract documents shall request such in writing from the Awarding Authority in sufficient time to allow a written reply by the Awarding Authority that can reach all prospective bidders before the submission of their bids. Any reply given a prospective bidder concerning any of the contract documents, plans, and specifications will be furnished to all prospective bidders in the form determined by the Awarding Authority including, but not limited to, an addendum, if the information is deemed by the Awarding Authority to be necessary in submitting bids or if the Awarding Authority concludes the information would aid competition. Oral explanations, interpretations, or instructions given before the submission of bids unless at a prebid conference will not be binding on the Awarding Authority.

**Changes in Improvement**

The undersigned agrees that in case the Superintendent of Cook County Department of Transportation and Highways decides either to extend or decrease the area of the proposed improvement or to do both or otherwise alter it by extras or deductions including the elimination of any one or more of the quantities listed in the Schedule of Prices the undersigned will make such change in the contract price by adding or subtracting there from as the case may be by applying the respective unit prices to the quantities of the several items of work that may be involved by reason of such change.

SPECIAL CONDITIONS**Preparation of the Bid**

Bidders shall submit their bids on the form furnished by the Awarding Authority. The bid shall be executed properly, and bids shall be made for all items indicated in the bid form, except when alternate bids are asked, a bid on more than one alternate for each item is not required, unless otherwise provided. The bidder shall indicate in figures, a unit price for each of the separate items called for in the bid form; the bidder shall show the products of the respective quantities and unit prices in the column provided for that purpose, and the gross sum shown in the place indicated in the bid form shall be the summation of said products. All writing shall be with ink or typewriter, except the signature of the bidder which shall be written in ink.

Any erasures or alterations in the unit prices and/or in the products of the respective quantities and unit prices in the bid, must be properly authenticated by the bidder by initialing in ink such erasures or alterations to avoid cause for rejection of the bid in accordance with Title 44 Illinois Administrative Code Chapter IX Section 660.180.

If the bid is made by an individual, that individual's name and business address shall be shown. If made by a firm or partnership, the name and business address of each member of the firm or partnership shall be shown. If made by a corporation, the bid shall show the names, titles, and business addresses of the president, corporate secretary and treasurer. The bid shall be signed by president or someone with authority to execute contracts and attest by the corporate secretary or someone with authority to execute or attest to the execution of contracts.

**Rejection of Bids**

The Awarding Authority reserves the right to reject any bids for any of the conditions listed below:

- a) More than one bid for same work from an individual, firm partnership, or corporation under the same name or different names.
- b) Evidence of collusion among bidders.
- c) Unbalanced bids in which the bid prices for some items are, in the judgment of the Awarding Authority, out of proportion to the bid prices for other items.
- d) If the bid does not contain a unit price for each pay item listed except in the case of authorized alternate pay items or lump sum pay items.
- e) If the bid form is other than that furnished by the Awarding Authority; or if the form is altered or any part thereof is detached.
- f) If there are omissions, erasures, alterations unauthorized additions, conditional or alternate bids, or irregularities of any kind which may tend to make the bid incomplete, indefinite or ambiguous as to its meaning.
- g) If the bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.
- h) If the proposal is not accompanied by the proper bid guaranty.

SPECIAL CONDITIONS

- i) If the bid is prepared with other than ink or typewriter, or otherwise fails to meet the requirement of the above "Preparation of Proposal" section.
- j) Lack of Competency and adequate machinery, plant, and other equipment, as revealed by the financial statement and experience questionnaires required in the prequalification procedures.
- k) Uncompleted work which, in the judgment of the Awarding Authority, might hinder or prevent the prompt completion of additional work awarded.
- l) False information provided on a bidder's "Affidavit of Availability".
- m) Failure to pay, or satisfactorily settle, all bills due for labor and material on former contracts in force at the time of issuance of bid forms.
- n) Failure to comply with any prequalification regulations of the Department.
- o) Default under previous contracts.
- p) Unsatisfactory performance record as shown by past work for the Awarding Authority, judged from the standpoint of workmanship and progress.
- q) When the contractor is suspended from eligibility to bid at a public letting where the contract is awarded by, or requires approval of, the Department.
- r) When any agent, servant, or employee of the prospective bidder currently serves as a member, employee, or agent of a governmental body that is financially involved in the proposal work.
- s) When any agent, servant, or employee of the perspective bidder has participated in the preparation of plans or specifications for the proposed work.

**Bid Guaranty**

Each bid shall be accompanied by a bid bond on the Department form contained in the bid document, executed by a corporate surety company satisfactory to the Awarding Authority, by a bank cashier's check or a properly certified check for not less than five percent (5%) of the amount bid, or for the amount specified in the following schedule:

SPECIAL CONDITIONS

	<u>Amount Bid</u>	<u>Proposal Guaranty</u>
Up to	\$5,000	\$150
\$5,000	\$10,000	\$300
\$10,000	150,000	\$1,000
\$50,000	\$100,00	\$3,000
\$100,000	\$150,000	\$5,000
\$150,000	\$250,000	\$7,500
\$250,000	\$500,000	\$12,500
\$500,000	\$1,000,000	\$25,000
\$1,000,000	\$1,500,000	\$50,000
\$1,500,000	\$2,000,000	\$75,000
\$2,000,000	\$3,000,000	\$100,000
\$3,000,000	\$5,000,000	\$150,000
\$5,000,000	\$7,500,000	\$250,000
\$7,500,000	\$10,000,000	\$400,000
\$10,000,000	\$15,000,000	\$500,000
\$15,000,000	\$20,000,000	\$600,000
\$20,000,000	\$25,000,000	\$700,000
\$25,000,000	\$30,000,000	\$800,000
\$30,000,000	\$35,000,000	\$900,000
Over	\$35,000,000	\$1,000,000

In the event that one proposal guaranty check is intended to cover two or more bids, the amount must equal to the sum of the bid guaranties, which would be required for each individual proposal.

Bank cashier's checks or properly certified checks accompanying bids shall be made payable to 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.

The bid guaranty checks of all except the two (2) lowest responsible bidders will be returned promptly after the bids have been checked, tabulated, and the relation of the bids established. Bid guaranty checks of the two lowest responsible bidders will be returned as soon as the contract and contract bond of the successful bidder have been properly executed and approved. Bid bonds will not be returned.

After a period of three (3) working days has elapsed after the date of opening proposals, the Awarding Authority may permit the two lowest bidders to substitute for the banks cashier's checks or certified checks submitted with their bids as proposal guaranties, bid bonds on the Department forms executed by corporate surety companies satisfactory to the Awarding Authority.

SPECIAL CONDITIONS**Public Opening of Bids**

Bids will be opened and read publicly at the time and place specified in the Notice to Bidders. Bidders, their authorized agents, and other interested parties are invited to be present.

**Failure to Execute Contract**

If the contract is not executed by the Awarding Authority within 90 days from the bid opening, the bidder shall have the right to withdraw their bid without penalty.

Failure of the successful bidder to provide all required insurance and bonding within **fourteen (14) days after the award notification** shall be just cause for the cancellation of the award and the forfeiture of the bid guaranty which shall become the property of the Awarding Authority, not as penalty, but in liquidation of damages sustained. Award may then be made to the next lowest responsible bidder, or the work may be advertised again and constructed under contract, or otherwise, as the Awarding Authority may decide.

**SC-13 ALTERNATE PROPOSAL**

The Bidder certified that this bid and the unit prices shown on the schedule of prices are based on performing the work in accordance with "An Act Regulating the Wages of Laborers, Mechanics and other Workers employed under contracts for Public Works" enacted by the 62<sup>nd</sup> General Assembly and approved June 26, 1941, as amended. Should said "Act" be declared inoperative, void or unconstitutional at any time, either before or after the awarding of the contract for this project, the bidder agrees to perform the work at a reduction of \_\_\_\_\_ per cent, of the unit prices shown on the schedule of prices, it being expressly understood and agreed that the within bid shall be and remain in full force and effect, regardless of whether the said "Act" is declared to be inoperative, void or unconstitutional. The contract for this project is to be awarded on the bases of the unit prices shown on the schedule of prices, and the percentage reduction, if any, act out in this alternative proposal, is to receive no consideration in the award of this contract.

Should the said "Act" be declared inoperative, void or unconstitutional at any time after the awarding of said contract, whether before, during or after the completion of the work, the said contract shall remain in full force and effect, and shall be subject only to said reduction, if any, in the unit prices shown on the schedule of prices.

NOTE: The Bidder shall insert in the first paragraph the percentage which he will reduce his unit prices, if any, in the event the Act is declared inoperable, void or unconstitutional.

**ORDINANCE**

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BE IT ENACTED BY THE BOARD OF COMMISSIONERS OF THE COUNTY OF COOK, that the Chief Procurement Officer of Cook County shall specify in the call for bids in any contract for public works that such contractors bidding on public works contracts of the County of Cook shall conform to Illinois Compiled Statutes, Chapter 30, Section 560/1 and following, which Act is entitled "An Act" to give preference in the construction of public works projects and improvements to citizens of the United States who have resided in Illinois for one year". The Chief Procurement Officer of Cook County in awarding the contract shall cause to be inserted in the contract a stipulation to the effect that the contractor shall conform to the above cited Illinois Statute.



SPECIAL CONDITIONS**SC-14 SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES NONFEDERAL-AID CONTRACTS****2) General**

- a) The requirements set forth herein shall constitute the specific affirmative action requirements under this contract and supplement the non-discrimination requirements contained elsewhere in this proposal.
- b) The contractor will work with the Cook County Department of Transportation and Highways in carrying out Equal Employment Opportunity (EEO) obligations and in their reviews of activities under the contract.
- c) The contractor, and all subcontractors holding subcontracts (not including material suppliers) of \$10,000.00 or more, will comply with the following minimum specific requirement activities of equal employment opportunity the contractor will include these requirements in every subcontract of \$10,000.00 or more with such modification of language as is necessary to make them binding on the subcontractor.

**3) Equal Employment Opportunity Policy**

The contractor will accept as operating policy the following statement which is designed to further the provision of Equal Employment Opportunity to all persons, and to promote the full realization of equal employment opportunity through a positive continuing program:

"It is the policy of this company to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."

**4) Equal Employment Opportunity Officer**

The contractor will designate and make known to the Cook County Department of Transportation and Highways contracting officers an EEO officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of Equal Employment Opportunity and who must be assigned adequate authority and responsibility to do so.

**5) Dissemination of Policy**

- a) All members of the contractor's staff who are authorized to hire, supervise, promote and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide Equal Employment Opportunity in each grade and classification of employment, to ensure that the above agreement will be met, the following actions will be taken as a minimum:

SPECIAL CONDITIONS

- (1) periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO officer.
  - (2) All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO officer, covering all major aspects of the contractor's EEO obligations within thirty (30) days following their reporting for duty with the contractor.
  - (3) All personnel who are engaged in direct recruitment for the project will be instructed by the EEO officer in the contractor's procedures for locating and hiring minority and female employees.
- b) In order to make the contractor's EEO policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the contractor will take the following actions:
- (1) Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
  - (2) The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

**6) Recruitment**

- a) When advertising for employees, the contractor will include in all advertisements for employees the notation: "an Equal Opportunity Employer". All such advertisements will be published in newspapers, or other publications, having a large circulation among minority groups in the area from which the project work force would normally be derived.
- b) The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority and female applicants; including, but not limited to, state employment agencies, schools, colleges and minority and female organizations. To meet this requirement, the contractor will identify sources of potential minority and female employees, and establish with such identified sources procedures whereby minority and female applications may be referred to the contractor for employment consideration.

In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referral, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with eeo contract provisions.

- c) The contractor will encourage present employees to refer minority and female applicants for employment by posting appropriate notices or bulletins in areas accessible to all such employees. In addition, information and procedures with regard to referring minority and female applicants will be discussed with employees.

SPECIAL CONDITIONS**7) Personnel Actions**

Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and terminations, will be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

- a) The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
- b) The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
- c) The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
- d) The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with the obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of the avenues of appeal.

**8) Training and Promotion**

- a) The contractor will assist in locating, qualifying and increasing the skills of minority and female employees and applicants for employment.
- b) Consistent with the contractor's work force requirements and as permissible under federal and state regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance.
- c) The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
- d) The contractor will periodically review the training and promotion potential of minority and female employees and will encourage eligible employees to apply for such training and promotion.

**Unions**

If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use their best efforts to obtain the cooperation of such unions to increase opportunities for minorities and females within the unions and to effect referrals by such unions of minority and female employees. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

SPECIAL CONDITIONS

- e) The contractor will use best efforts to develop, in cooperation with the unions. Joint training programs aimed toward qualifying more minority and female employees for membership in the unions and increasing the skills of minority and female employees so that they may qualify for higher paying employment.
- f) The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.
- g) The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the Cook County Department of Transportation and Highways and shall set forth what efforts have been made to obtain such information.
- h) In the event the union is unable to provide the contractor with a reasonable flow of minority and female referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and females. (The U.S. Department of Labor has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minorities or female employees). In the event the union referral practice prevents the contractor from meeting the obligations pursuant to these special provisions, such contractor shall immediately notify the Cook County Department of Transportation and Highways.

**9) Selection of subcontractors, procurement of materials and leasing of equipment**

The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

- a) The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligation under this contract.
- b) Minority and Women Owned Business Enterprises, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use best efforts to solicit bids from and to utilize M/WBE subcontractors or subcontractors with meaningful minority and female representation among their employees.
- c) The contractor will use his/her best efforts to ensure subcontractor compliance with their EEO obligations.

**10) Records and reports**

The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three (3) years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the Cook County Department of Transportation and Highways.

SPECIAL CONDITIONS

- a) The records kept by the contractor shall document the following:
- (1) The number of minorities, non-minorities and females employed in each work classification on the project.
  - (2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and females;
  - (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and,
  - (4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.
- b) The contractor will submit to the Cook County Department of Transportation and Highways a monthly report every month for the duration of the project, indicating the number of minority, non-minority and female employees currently engaged in each work classification required by contract work and the number of hours worked. This information is to be reported on form SBE-956. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data.

Notice of requirement for affirmative  
Action to ensure equal employment  
Opportunity (executive order 11246)

- (1) The offeror's or bidder's attention is called to the "equal opportunity clause" and the "standard federal equal employment opportunity construction contract specifications" set forth herein.
- (2) The goals and timetables for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

**APPENDIX A**

The following goal for female utilization in each construction craft and trade shall apply to all contractors holding federal and federally assisted construction contracts and subcontracts in excess of \$10,000.00. The goal is applicable to the contractor's total on-site construction workforce, regardless of whether or not part of that workforce is performing work on a federal, federally assisted or nonfederally related construction contract or sub contract. Area covered (statewide) goals for women apply nationwide.

Goal	Goal (Percentage)
Female Utilization	6.9

SPECIAL CONDITIONS**APPENDIX B**

Until further notice, the following goals for minority utilization in each construction craft and trade shall apply to all contractors holding federal or federally-assisted construction contracts and subcontracts in excess of \$10,000.00 to be performed in the respective geographical areas. The goals are applicable to the contractor's total on-site construction workforce, regardless of whether or not part of that workforce is performing work on a federal, federally-assisted or nonfederally related construction contract or subcontract.

<u>Economic area</u>	<u>Goal (percent)</u>
083 Chicago, IL Smsa Counties: 1600 Chicago, IL - IL - Cook, DuPage, Kane, Lake, Mchenry, Will	19.6

These goals are applicable to all the contractor's construction work (whether or not it is federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and nonfederally involved construction. The contractor's compliance with executive order and the regulations in 41 cfr part 60-4 shall be based on its implementation of the equal opportunity clause, specific affirmative action obligations required by the provisions and specifications set forth in its federally assisted contracts, and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority of female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the executive order and the regulations in 41 cfr part 60-4. Compliance with the goals will be measured against the total work hours performed.

- (3) As used in this notice, and in the contract resulting from this solicitation, the "covered area" is the entire state of Illinois for the goal set forth in **Appendix A** and the county or counties in which the work is located for the goals set forth in **Appendix B**.

Standard federal equal employment  
Opportunity construction contract  
Specifications (executive order 11246)

11) As used in these specifications:

- a) "covered area" means the geographical area described in the solicitation from which this contract resulted;
- b) "director" means director, office of federal contract compliance programs, united states department of labor, or any person to whom the director delegates authority;

SPECIAL CONDITIONS

- c) "employer identification number" means the federal social security number used on the employer's quarterly federal  
Tax return, U.S. Treasury Department form 941.
- d) "minority" includes:
- i) Black (all persons having origins in any of the black African racial groups not of Hispanic origins);
  - ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, central or south American or other Spanish culture or origin, regardless of race);
  - iii) Asian and pacific islander (all persons having origins in any of the original peoples of the far east, southeast Asia, the Indian subcontinent, or the pacific islands); and
  - iv) American Indian or Alaskan native (all persons having origins in any of the original peoples of north America and maintaining identifiable tribal affiliations through membership and participation or community identification).
- 12) Whenever the contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000.00 the provisions of these specifications and the notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
- 13) If the contractor is participating (pursuant to 41 cfr 60-4.5) in a hometown plan approved by the U. S. Department of Labor in the covered area wither individually or through an association, its affirmative action obligations on all work in the plan area (including goals and timetables) shall be in accordance with that plan for those trades which have unions participating in the plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such hometown plan. Each contractor or subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the plan goals and timetables.
- 14) The contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in geographical areas where they do not have a federal or federally assisted construction

Contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the federal register in notice form, and such notices may be obtained from any office of federal contract compliance programs office or from federal procurement contracting officers. The contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

SPECIAL CONDITIONS

- 15) Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the contractor's obligations under these specifications, executive order 11246, or the regulations promulgated pursuant thereto.
- 16) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the contractor during the training period, and the contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
- 17) The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
  - a) Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The contractor, where possible, will assign two or more women to each construction project. The contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
  - b) Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
  - c) Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the contractor may have taken.
  - d) Provide immediate written notification to the director when the union or unions with which the contractor has a collective bargaining agreement has not referred to the contractor a minority person or woman sent by the contractor, or when the contractor has other information that the union referral process has impeded the contractor's efforts to meet its obligations.
  - e) Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources compiled under 7b above.



SPECIAL CONDITIONS

- f) Disseminate the contractor's eeo policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting its eeo obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company eeo policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g) Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as superintendents, general foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h) Disseminate the contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the contractor's eeo policy with other contractors and subcontractors with whom the contractor does or anticipates doing business.
- i) Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notifications such as the above, describing the openings, screening procedures, and test to be used in the selection process.
- j) Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.
- k) Validate all tests and other selection requirements here there is an obligation to do so under 41 cfr part 60-3.
- l) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- m) Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the contractor's obligations under these specifications are being carried out.
- n) Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- o) Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

SPECIAL CONDITIONS

- p) Conduct a review, at least annually, of all supervisors' adherence to and performance under the contractor's EEO policies and affirmative action obligations.
- 18) Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, make a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply however is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.
- 19) A single goal for minorities and a separate single goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the contract may be in violation of the executive order if a particular group is employed in a substantially disparate manner, (for example, even though the contractor has achieved its goal for women generally, the contractor may be in violation of the executive order if a specified minority group of women is underutilized).
- 20) The contractor shall not use the goals and timetables of affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
- 21) The contractor shall not enter into any subcontract with any person or firm debarred from government contracts pursuant to executive order 11246.
- 22) The contractor shall carry out such sanctions and penalties for violation of the specifications and of the equal opportunity clause, including suspension, termination and cancellation of existing subcontracts, as may be imposed or ordered pursuant to executive order 11246, as amended and its implementing regulations, by the office of federal contract compliance programs. Any contractor who fails to carry out sanctions and penalties shall be in violation of these specifications and executive order 11246, as amended.
- 23) The contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the executive order, the implementing regulations, or these specifications, the director shall proceed in accordance with 41 cfr 60-4.8.

SPECIAL CONDITIONS

- 24) The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being out, to submit reports relating to provisions hereof as may be required by the government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes of status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
- 25) Nothing herein provided shall be construed as a limitation upon the application of other laws which establish standards of compliance or upon the application requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

**SC-15 JOINT VENTURES**

Contractors submitting a bid as a joint venture shall comply with the following procedures:

- 26) Contractors may combine their available bidding capacity for a single contract to bid as a joint venture.
- 27) The joint venture shall be indicated by the filing of a ***Joint Venture Minimum Declaration of Work*** for each of the contracts for which joint venture approval is sought. It identifies the managing partner and indicated the kind and the percentage of work to be performed by each joint venture partner with its own workforce and resources other than work reserved to meet any disadvantage business goal advertised in the contract. The form indicated the joint venture agreement shall be included in the bid. In addition, each joint venture partner firm shall submit an ***Affidavit of Availability***. The ***Joint Venture Minimum Declaration of Work*** and all ***Affidavits of Availability*** must be included in the bid. The proposed joint venture shall not be approved if the establishment of a joint venture would unduly restrict competition. A determination that a proposed venture would unduly restrict competition is limited to any of the following reasons:
- a) That the proposed joint venture would consist of more than three (3) qualified contractors.
  - b) That the ***Joint Venture Minimum Declaration of Work*** indicated that any one of the proposed joint ventures partners will perform less than ten percent of the non-disadvantage business work with its own workforce and resources.

That for letting items estimates by the Department to be bid at less than \$1,000,000.00 more than one of the proposed joint venture partners has the individual qualification ratings and bid the item without the approval of the venture. This determination shall not apply to joint ventures between firms having fifty-one percent or more common controlling ownership or on items where the estimated quantity of asphalt exceeds 10,000 tons or concrete exceeds 5,000 cubic yards. Each proposed joint venture shall submit, with the bid, a ***Joint Venture Certificate of Explanation and Justification*** for each of the contracts estimated at less than \$1,000,000.00 for which joint venture approval is sought. The form indicated the circumstances which apply to the joint venture. That is there fifty-one percent (51%) or more common controlling ownership, or does one or more parties to the joint venture not have the financial capacity, work capacity or work categories to complete the project. The ***Joint Venture Certificate of Explanation*** must be included in the bid.

SPECIAL CONDITIONS

- 28) Contractors whose financial ratings are based upon unaudited financial statements will not be permitted to joint venture with each other to bid contracts which are estimated to exceed \$350,000.00. However, such contractors may be permitted to joint venture with contractors who have a financial rating based upon an audited statement to bid contracts estimated to exceed \$350,000.00.
- 29) If a joint venture work rating is limited by its maximum financial rating, the full value of the computed work rating will be used in analyzing the joint venture approval request. However, the combined maximum work rating in any category shall not exceed the combined maximum financial rating of the joint venture.
- 30) If an approved joint venture is awarded a contract, the kind and percentage of work indicated on the **Joint Venture Minimum Declaration of Work** may be amended as many times as necessary by the contractor provided that each partner of the approved joint venture performs at least ten percent of the nondisadvantaged work with its own workforce and resources.

Copies of all required Joint Venture Forms are attached.

Please note that signed and notarized originals of all required Joint Venture Forms mentioned above **must be included in the bid.** This includes ***Affidavits of Availability*** for all parties to the joint venture.

**SC-16 PRE-CONSTRUCTION CONFERENCE**

After the award of the contract and before construction is started, a conference shall be held at a time and place to be designated by the County.

The purpose of the conference shall be to co-ordinate the work to be performed and adopt a schedule of operations.

The conference will be attended by representatives of the participating agencies together with the public and private agencies whose facilities are involved in the construction of the project.

**SC-17 CONSTRUCTION AIR QUALITY DIESEL VEHICLE EMISSIONS CONTROL (GREEN CONSTRUCTION ORDINANCE) PRE-CONSTRUCTION CONFERENCE**

Description. Diesel Vehicle Emissions Control. The reduction of construction air emissions shall be accomplished by using cleaner burning diesel fuel. All equipment on the jobsite as defined by section 30-952 (a) of the Cook County Green Construction Ordinance (ORDINANCE) shall be required to use Ultra Low Sulfur Diesel fuel (ULSD) exclusively (15 ppm sulfur content or less). Equipment shall include any "rental" equipment. In addition, the Contractor is required to comply with section 30-954 -3(c) related to engine idling.

Diesel powered equipment in non-compliance will not be allowed to be used on the project site, and is also subject to adjudication in accordance with the attached Ordinance. Liquidated damages as per section 30-955 (c) of the ORDINANCE will not apply until such time as the level 2 or 3 controls are phased in.

SPECIAL CONDITIONS

The Contractor is required to submit a list of equipment to be used on the project to the Cook County Department of Environmental Control (DEPARTMENT), as stated in section 30-954(a) and (b) of the ORDINANCE, and shall copy the Cook County Department of Transportation and Highways - Construction Bureau on that submittal. The 30 day submittal stipulation cited in section 30-954(a) of the ORDINANCE will be enforced. The Contractor may not begin work on the project unless acknowledgement by the DEPARTMENT of their receipt of the list is provided to the Construction Bureau of the Cook County Department of Transportation and Highways. At this time, the list will be used for statistical data only. The Contractor is not required to meet portions of the ordinance related to level 2 or 3 controls as outlined in the ORDINANCE until such time as stipulated in the ordinance. If additional equipment is to be used on a project that was not on the original equipment list submitted to the DEPARTMENT, the Contractor must follow the same procedure as outlined above. Short term usage of equipment shall be as stated in section 30-952(3)(c)(1) of the ORDINANCE.

The Contractor shall submit copies of monthly summary reports to the DEPARTMENT and include certified copies of the ULSD fuel delivery slips for diesel fuel delivered to the jobsite for the reporting time period, noting the quantity of diesel fuel used.

The ORDINANCE is attached and made a part of this contract. Contact information for the Department of Environmental Control is given below.

Basis of Payment. Any costs associated with compliance with this special provision and the Green Construction Ordinance shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

Cook County Department of Environmental Control  
69 West Washington Street Room 1900  
Chicago, IL 60602  
Re: Cook County Green Construction Ordinance  
Phone: 312-603-8200

09-0-36

ORDINANCE

Sponsored by

THE HONORABLE TODD H. STROGER, PRESIDENT

AND ROBERTO MALDONADO, JOAN PATRICIA MURPHY AND PETER N. SILVESTRI

COUNTY COMMISSIONERS

Co-Sponsored by

THE HONORABLE JOHN P. DALEY, ELIZABETH "LIZ" DOODY GORMAN,

JOSEPH MARIO MORENO, DEBORAH SIMS, ROBERT B. STEELE

SPECIAL CONDITIONS

AND LARRY SUFFREDIN, COUNTY COMMISSIONERS

## COOK COUNTY GREEN CONSTRUCTION ORDINANCE

BE IT ORDAINED, by the Cook County Board of Commissioners that Chapter 30 Environment, Article IX Green Construction, Sections 30-950 through 30-955 of the Cook County Code is hereby enacted as follows:

**ARTICLE IX. GREEN CONSTRUCTION****Sec. 30-950. Board of Commissioners findings.**

- a) Diesel exhaust particle pollution poses a clear and present health risk to the people of Cook County. The United States Environmental Protection Agency has classified diesel exhaust as a likely human carcinogen, and has identified diesel particulate matter and diesel exhaust organic gases as toxic air pollutants. Diesel exhaust is also a prime contributor to airborne fine particle pollution that is linked to premature death and other serious cardiovascular and pulmonary problems such as heart attacks, abnormal heart rhythms, atherosclerosis, stroke, asthma attacks, permanent respiratory damage and retardation of lung growth in children.
- b) Cook County is a USEPA designated non-attainment area for fine particulate matter pollution.
- c) The health impacts from diesel emissions particularly affect children, the elderly, and people with weakened immune systems.
- d) Particularly high concentrations of diesel emissions often occur in heavily traveled transportation corridors, intermodal yards, bus depots, and construction sites; these diesel "hot spots" often are found in densely populated, urban areas, disproportionately impacting ethnic minorities and people of lower economic status.
- e) Diesel engine crankcases also are a source of emissions that can seep into the cabin and expose vehicle drivers and passengers to harmful diesel emissions.
- f) Diesel exhaust also contains black carbon emissions, which contribute to global climate change.
- g) Reduction of diesel emissions can help address these human health and environmental problems.
- h) The United States Environmental Protection Agency has enacted requirements over the past few years requiring the substantial reduction of emissions from new diesel engines in both heavy duty highway vehicles and land-based non-road equipment. However, these regulations do not apply to any of the over 11 million existing diesel engines in the United States, most of which emit substantially more pollution and often remain in service for 10 to 30 years, depending on the type of engine and equipment.

SPECIAL CONDITIONS

- i) Practical, cost-effective measures to substantially reduce diesel particulate emissions are available today, and can be applied to many existing diesel engines. The same technology that limits diesel pollution from new diesel engines can be retrofitted onto existing engines or applied in new replacement engines to reduce diesel emissions by 85% or better.
- j) Therefore, the purpose of this ordinance is to minimize the public health risks from exposure to diesel particulate emissions as expeditiously as practicable.

**Sec. 30-951. Definitions.**

**CARB** means the California Air Resources Board.

**County**, as used in this chapter (with the exception of the use of the words to describe or identify the Government or Board of Commissioners thereof), means all of the territory in the County exclusive of the City of Chicago.

**Department** means the Cook County Department of Environmental Control.

**Fleet** means one or more diesel vehicles or mobile or stationary diesel engines owned or operated by the same person or group of related persons.

**Heavy duty diesel vehicle** means a motor vehicle with a gross vehicle weight rating of at least 8,500 pounds that is powered by a diesel engine.

**Level 1 Control** means a Verified Diesel Emission Control Device that achieves a particulate matter (PM) emission reduction of 25% or more from uncontrolled engine emission levels.

**Level 2 Control** means a Verified Diesel Emission Control Device that achieves a particulate matter (PM) emission reduction of 50% or more from uncontrolled engine emission levels.

**Level 3 Control** means a Verified Diesel Emission Control Device that achieves a particulate matter (PM) emission reduction of 85% or more from uncontrolled engine emission levels, or that reduces emissions to less than or equal to 0.01 grams of PM per brake horsepower-hour. Level 3 Control includes repowering or replacing the existing diesel engine with an engine meeting USE PA's 2007 Heavy-duty Highway Diesel Standards (66 Fed. Reg. 5002), or in the case of a non-road engine, an engine meeting the USE PA's Tier 4 Nonroad Diesel Standards (69 Fed. Reg. 38958); Level 3 Control also includes new diesel engines meeting said emissions standards.

**Motor vehicle** means any self-propelled vehicle designed for transporting persons or property on a street or highway, including an on-road diesel vehicle.

**Nonroad engine** means an internal combustion engine (including the fuel system) that is not used in a motor vehicle or a vehicle used solely for competition, or that is not a stationary source, except that this term shall apply to internal combustion engines used to power generators, compressors or similar equipment used in any construction program or project.

SPECIAL CONDITIONS

**Nonroad Vehicle** means a vehicle or equipment that is powered by a nonroad engine, fifty horsepower and greater, and that is not a motor vehicle or a vehicle used solely for competition, which shall include, but not be limited to, excavators, backhoes, cranes, compressors, generators, bulldozers and similar equipment; non-road vehicles do not include locomotives or marine vessels.

**Prime Contractor** means any person or business entity that enters into a public works contract with Cook County.

**Public Works Contract** means a contract, budgeted at \$2,000,000 or more, with a County agency for a construction program or project bid by Cook County involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge; a contract with a County agency for the preparation for any construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge; or a contract with a County agency for any final work involved in the completion of any construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge.

**Stationary Generators** means a non-mobile machine that uses diesel fuel to produce electrical energy.

**Subcontractor** means any person or business entity that enters into a contract with a Prime Contractor as defined herein to perform work on a public works contract with Cook County.

**Ultra low sulfur diesel fuel** means diesel fuel that has a sulfur content of no more than fifteen parts per million.

**US EPA** means the United States Environmental Protection Agency.

Verified diesel emission control device means:

- k) an emission control device or strategy that has been verified to achieve a specified diesel PM reduction by US EPA or CARB; or
- l) replacement or repowering with an engine that is certified to specific PM emissions performance by USE PA or CARB.

**Sec. 30-952. Emission reduction.**

- m) Immediately after the effective date of this ordinance, any solicitation for a public works contract and any contract entered into as a result of such solicitation shall include a specification that all contractors in the performance of such contract shall use Ultra Low Sulfur Diesel fuel for diesel motor vehicles, nonroad vehicles, and stationary generators used in the performance of the contract.
- n) Beginning January 1, 2014, for Prime Contractors, and beginning January 1, 2016 for Subcontractors, any solicitation for a public works contract and any contract entered into as a result of such solicitation shall include a specification that a Prime Contractor and all Subcontractors in the performance of such contract shall not operate any heavy-duty diesel vehicle in the performance of a public works contract unless that vehicle has installed Level 3 Controls and unless such controls are properly maintained and operating (as provided by regulations promulgated pursuant to this act). Except that, upon provision by the Prime Contractor or Subcontractors to the agency of appropriate and sufficient documentary evidence:



SPECIAL CONDITIONS

- (1) Subsection (b) shall not apply to any heavy-duty diesel vehicle on the construction site working three days or less over the life of the project.
  - (2) Subsection (b) shall not apply to any heavy-duty diesel vehicle with respect to which the Department makes a written finding that such vehicle cannot be retrofit with Level 3 Controls, in which case such fleet owner or operator shall install Level 2 Controls that are available and appropriate for such vehicle as determined by the Department. If the Department makes a written finding that any such vehicle cannot be retrofit with Level 2 controls, said vehicle shall be retrofit with Level 1 Controls that are available and appropriate for such vehicle as determined by the Department.
  - (3) Any heavy-duty diesel vehicle that has operational Level 2 Controls installed prior to the effective date of this act shall have an additional one year to meet the requirements of Subsection (b).
- o) Within two years after the effective date of this ordinance, any solicitation for a public works contract and any contract entered into as a result of such solicitation shall include a specification that all contractors in the performance of such contract shall not operate any diesel nonroad vehicle in the performance of a public works contract unless that vehicle has installed Level 2 Controls and unless such controls are properly maintained and operating (as provided by regulations promulgated pursuant to this act). Except that, upon provision by the contract or to the agency of appropriate and sufficient documentary evidence:
- (1) Subsection (c) shall not apply to any diesel nonroad vehicle on the construction site working three days or less over the life of the project.
  - (2) Subsection (c) shall not apply to any diesel nonroad vehicle with respect to which the Department makes a written finding that such vehicle cannot be retrofit with Level 2 Controls, in which case such fleet owner or operator shall install Level 1 Controls that are available and appropriate for such vehicle as determined by the Department.
  - (3) Any diesel nonroad vehicle that has operational Level 1 Controls installed prior to the effective date of this act shall have an additional one year to meet the requirements of Subsection (c).
- p) Beginning January 1, 2014, for Prime Contractors, and beginning January 1, 2016 for Subcontractors, any solicitation for a public works contract and any contract entered into as a result of such solicitation shall include a specification that a Prime Contractor and all Subcontractors in the performance of such contract shall not operate any diesel nonroad vehicle in the performance of a public works contract unless that vehicle has installed Level 3 Controls and unless such controls are properly maintained and operating (as provided by regulations promulgated pursuant to this act). Except that, upon provision by the Prime Contractor or Subcontractors to the agency of appropriate and sufficient documentary evidence:
- (1) Subsection (d) shall not apply to any diesel nonroad vehicle on the construction site working three days or less over the life of the project.

SPECIAL CONDITIONS

- (2) Subsection (d) shall not apply to any diesel nonroad vehicle with respect to which the Department makes a written finding that such vehicle cannot be retrofit with Level 3 Controls, in which case such fleet owner or operator shall install Level 2 Controls that are available and appropriate for such vehicle as determined by the Department.
- (3) Any diesel nonroad vehicle that has operational Level 2 Controls installed prior to the effective date of this act shall have an additional one year to meet the requirements of Subsection (d).

**Sec. 30-953. Costs.**

All costs associated with meeting these requirements are incidental to the overall contract. No additional time or monies will be granted to the Prime Contractor for compliance with these requirements and any associated regulations.

**Sec. 30-954. Compliance.**

- q) Thirty days before beginning work, the Prime Contractor shall submit to the Department for approval a list of all heavy-duty diesel vehicles, nonroad vehicles, and stationary generators to be used on the project. The list shall include the following:
  - (1) Prime Contractor and Subcontractor name and address, plus contact person responsible for the vehicles or equipment.
  - (2) Equipment type, manufacturer, engine model year, engine certification (Tier rating), ECM calibration, horsepower, plate, serial number, and expected fuel usage and/or hours of operation.
  - (3) For the pollution control technology installed: technology type, serial number, make, model, manufacturer, EPA/CARB verification number/level, and installation date.
- r) If the Prime Contractor subsequently needs to bring on site equipment not on the list, the Prime Contractor shall submit the request in writing for prior approval. Additional equipment shall comply with all contract conditions.
- s) During periods of inactivity, idling of diesel on road motor vehicles and nonroad vehicles shall be minimized and shall not exceed the time allowed under state and local laws.
- t) Any public works contract shall provide for enforcement of the contract provisions required by Section 3 and penalties for noncompliance of such provisions.

**Sec. 30-955. Enforcement.**

- u) Any solicitation for a public works contract subject to the provisions of this section and any contract entered into as a result of such solicitation shall include provisions authorizing independent monitoring and inspection of the Prime Contractor and Subcontractor's compliance with the requirements of this section and requiring that the Prime Contractor and Subcontractor comply with this section. The Prime Contractor shall be liable for a fee of \$200 for the review of Prime Contractor and Subcontractor's compliance with the provisions of this section, and the County may withhold and deduct the fee from monies otherwise due the Prime Contractor.

SPECIAL CONDITIONS

- v) All vehicles and equipment to which these requirements are applicable will be subject to random inspections to ensure full compliance with these requirements. If any equipment is found to be non-compliant, the Prime Contractor, Subcontractor or Supplier must remove or retrofit this equipment or vehicle within 24 hours or be subject to liquidated damages pursuant to subdivision (c) of this section until that piece of equipment or vehicle is removed from Project.
- w) In the event of a violation of any provision of this section, except as provided, in subdivision (d) of this section, liquidated damages shall be assessed against the Prime Contractor in the amount of \$5,000 for each violation (with each piece of noncomplying equipment and each day of noncompliance being a separate violation, not to exceed a total of \$50,000 for any one piece of equipment). Said liquidated damages are not imposed as a penalty but as an estimate of the damages that the County will sustain from delay in completion of the work, as well as resultant damages to public health of its citizens, which damages by their nature are not capable of precise proof. The County may withhold and deduct from monies otherwise due the Prime Contractor the amount of liquidated damages due the County.
- x) No Prime Contractor or Subcontractor shall make a false statement or claim with respect to any matter material to compliance with the provisions of this section to the County. Any Prime Contractor or Subcontractor making such a false statement shall pay the County up to \$10,000 for each such statement as liquidated damages pursuant to the provisions of subdivision (c) of this section.
- y) Fees and liquidated damages paid to the County under this section shall be placed in the Cook County Environmental Management Fund.

**Sec. 30-956. Regulations.**

Within six months of the effective date of this act, the Department shall, after written notice and public hearing, promulgate regulations implementing the provisions of this act.

Effective date: This Ordinance shall take effect upon adoption.

Approved and adopted this 19th day of May 2009.

TODD H. STROGER, President

Cook County Board of Commissioners

Attest: DAVID ORR, County Clerk.

**SC-18 PROCESSING OF EXTRA WORK PAYMENT REQUESTS**

Contractor's payment requests for Extra Work as identified in Article 104.02 of the Standard Specifications and the Special Provision for Contract Extra Work shall be processed in accordance with Article 109.04 of the Standard Specifications and the following additional procedures:

- 31) Contractor shall invoice the County for such Extra Work in accordance with the lump sum price, unit price, or force account as agreed to by the Engineer and Contractor.

SPECIAL CONDITIONS

- 32) Force account billing for equipment expense shall follow the applicable volume of the Equipment Watch Rental Rate Blue Book (Blue Book). Determination of equipment rates shall follow the IDOT Construction Memorandum 08-09. Also, a copy of the Blue Book calculation for each piece of equipment shall be included with the force account billing.
- 33) Contractor shall submit invoice for such Extra Work after the Extra Work has been fully completed by Contractor within sixty (60) days of completion of the work.
- 34) Within sixty (60) days after receipt of the invoice, the Engineer will review the Contractor's invoice and determine whether the invoice complies with the above. If the Engineer disapproves the invoice, the Engineer shall give Contractor notice of the reasons for such disapproval and the Contractor shall resubmit a corrected invoice for the Engineer's review. The County shall have an additional thirty (30) days to review and determine whether that the corrected invoice complies with the above.
- 35) Once the Engineer determines that the invoice complies with the above, the Engineer shall present a recommendation for change in plan for the specific items of extra work. The Superintendent shall execute a change order for the specific items of extra work and submit such change order to the Cook County Chief Procurement Officer, or where appropriate, to the County Board for approval.
- 36) Within thirty (30) days of the Board's or the Cook County Chief Procurement Officer's approval of the change order, payment shall be reflected under the specific items of extra work completed by the Contractor and the corresponding amount shall be deleted from the Contract Extra Work item.

SC-19 CONTRACT

That for and in consideration of the payments to be made by the said County as hereinafter provided, the said Contractor hereby covenants and agrees with the said County to do all the work and furnish all the labor, materials, machinery, apparatus, implements, tools, and other things necessary for the improvement of the public highway known as Cook County Contract # 1628-15554 **Electrical and Mechanical Item Maintenance** in the various locations in and around County of Cook, and State of Illinois, said section known or to be known as Section: **17-8EMIM-00-GM** at his own cost and expense, free from all liens, claims, and charges whatsoever, and in a good substantial, thorough and workmanlike manner, and in strict and full accordance, conformity and compliance with all the terms and conditions of this contract and the requirements under it of the Superintendent of Department of Transportation and Highways of Cook County, Illinois, and under the direction and to the satisfaction of the said Superintendent of Department of Transportation and Highways.

It is expressly understood and agreed by and between said County and said Contractor that the Bid hereto attached and Notice to Contractors, Specifications, Plans, Maps, Blue Prints, and Drawings, on file in the Office of the Superintendent of Department of Transportation and Highways of Cook County, Illinois, and in the office of the Department of Transportation, Springfield, Illinois, copies of which are hereto attached, hereby are included in and made a part of this contract.

The Contractor shall not begin operations until the contract has been approved by the Board of

SPECIAL CONDITIONS

Cook County Commissioners and fully executed by the County. Subsequent to contract execution, the Contractor will be notified by a notice-to-proceed letter from the Superintendent of Cook County Department of Transportation of Highways to commence operations on a specified date. The undersigned agrees to start operations on the date so specified and to complete the proposed improvement in full compliance with the contract.

The Superintendent of Cook County Department of Transportation and Highways shall at the end of each month make an estimate in writing, such as in his opinion shall be just and fair, of the amount of materials furnished, delivered, properly set in place and incorporated into the herein described improvement, and the amount of work properly done by said Contractor in the performance of the work hereunder and the value thereof under and according to the terms of this contract.

The first estimate shall cover the amount of work performed and the value of the materials properly set in place and incorporated into the herein described improvement since said Contractor commenced the performance of this contract, and each subsequent estimate, except the final one, shall be of the amount of work performed and the value of the materials properly set in place and incorporated into said improvement since the last preceding estimate was made.

Such estimates of amount and quality shall not be required to be made by strict measurement, but shall be sufficient if they are made approximately only, and each such estimate shall be submitted to the Board of County Commissioners of Cook County and upon approval by said Board of Commissioners said County shall pay to said Contractor ninety per cent (90%) of the amount stated in said estimates, if applicable.

At least one week before each payment falls due, said Contractor shall submit to said Superintendent of Department of Transportation and Highways requisition for such payment, and, shall, if required, submit therewith an itemized statement of the quantities and cost and proportionate profit of work performed to the termination of the period to be covered by such payment, together with an affidavit setting forth that the items in said statement are true and just, that the services were rendered, that the articles or materials were furnished, that the sum claimed is due and unpaid, after allowing all just credits, that all labor, materials, apparatus, fixtures, and machinery furnished or used have been paid for, and if not, stating those not paid for, giving the amount due, to whom due, and for what due, attaching to said affidavit waivers of lien from those mentioned in said exceptions as having unpaid claims, and such affidavit shall contain such other matter as may be deemed necessary by the said Superintendent of Department of Transportation and Highways to protect said County in its payments, and any such statement shall not be binding upon said Superintendent of Department of Transportation and Highways.

It is expressly agreed by the parties hereto that in the event any defects or imperfections in the materials or workmanship to be furnished by the Contractor herein appear within the period of one year from the date of completion of all the work mentioned herein and the acceptance thereof by said County, the Contractor will, upon notice from the said Superintendent of Department of Transportation and Highways, (which notice may be given by letter mailed to said Contractor to the business address of the Contractor shown in the Proposal), repair and make good at his own cost any such defects or imperfections and replace any defective or imperfect materials or workmanship with other materials or workmanship satisfactory to said Superintendent of Department of Transportation and Highways, and furnish all such new materials and labor as may be necessary to do so; and in the event of the failure, refusal or delay of said Contractor to so make good, repair or replace said workmanship or materials, said County may do so or have same done by others,

SPECIAL CONDITIONS

and said Contractor and the surety or sureties on his bond given for the faithful performance of this contract shall be liable to the County of Cook for all damages and expense occasioned by such failure, refusal or delay.

It is expressly and mutually covenanted and agreed that all of the Plans and Specifications hereinbefore mentioned and this Instrument together are the documents forming the contract between said County and said Contractor and are correlative, and whatever may be provided for and required by one of said documents shall be as binding as if provided for and required by two or more of them.

The Contractor expressly agrees that not less than the general prevailing rate of wages as found by The Board of County Commissioners for the County of Cook in accordance with the provisions of "An Act regulating wages of laborers, mechanics and other workmen employed under contracts for public works", Approved June 26, 1941, as amended, or such wage rates as may be determined by the court on appeal as in said Act provided, shall be paid to all laborers, workmen and mechanics performing work under this contract. The prevailing wage rates as found by the said Board of County Commissioners are on file in the office of the County Clerk for the County of Cook.

It is expressly understood and agreed that if the said Contractor shall fail, refuse or neglect to comply with said contract and Plans and Specifications or any provisions therein contained, or to proceed according to the terms of said contract and Plans and Specifications or any part thereof, in the manner and at the time as directed by the said Superintendent of Department of Transportation and Highways, then the said County shall have the right, and The Board of County Commissioners of Cook County is hereby given authority on behalf of the said County to declare this contract forfeited, and the said County may re-bid the whole or any part thereof upon such terms as it may see fit without prejudice to any of its rights herein.

It is expressly understood and agreed by the parties hereto that the Superintendent of Department of Transportation and Highways shall fix and determine the amount of damages to be paid to said County by the said Contractor by reason of the failure or refusal to perform this contract or comply with the provisions thereof as aforesaid, and the said Contractor hereby agrees to be held liable for the amount so fixed and determined and agrees to pay such amount; and the said County shall apply in payment of any such amount so fixed and determined any and all sums on hand or due and owing to said Contractor, and if there be not sufficient money on hand or due and owing to said Contractor to balance and pay said amount so fixed and determined, then, in such case, any amount remaining unpaid shall be a valid and subsisting claim against the said Contractor and the surety or sureties on his bond given for the faithful performance of this agreement.

**COUNTY OF COOK**

**DEPARTMENT OF TRANSPORTATION  
AND HIGHWAYS**

**COOK COUNTY, ILLINOIS**

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**ELECTRICAL AND MECHANICAL ITEM MAINTENANCE**

**GENERAL PROVISIONS, SPECIAL PROVISIONS and  
SPECIFICATIONS**

List of Locations

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For the Maintenance of Traffic Signal Installations, Street and Roadway Lighting Systems, Navigation Lighting Systems, Bridge Cathodic Protection Systems, Storm Water Pumping Station Systems, and Maintenance Facilities Electrical Systems as shown on the list attached, all of which are under the jurisdiction of the Cook County Department of Transportation and Highways, State of Illinois.

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## I DESCRIPTION OF WORK

This contract is for the maintenance of (1) Traffic Signal Systems, (2) Street and Roadway Lighting Systems, (3) Navigation Lighting Systems, Bridge Cathodic Protection Systems, (4) Storm Water Pumping Station Systems, and (5) Maintenance Facilities Electrical Systems and their appurtenances, located in Cook County.

The Contractor, for specified unit prices listed under Schedule Of Prices, shall: (1) furnish all labor and provide materials to maintain the respective installations and systems, in first class working order and operating condition at all times, (2) make permanent repairs to damaged equipment, (3) clean, repair, perform preventative maintenance, and overhaul specified equipment at stated intervals of time, (4) provide the necessary transportation for workmen, materials, and equipment used to execute the terms of the Contract, (5) **PROVIDE CONTINUOUS MAINTENANCE AND REPAIR SERVICE, INCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS** to correct any malfunction of equipment or effect any temporary emergency repairs to missing, defective, displaced or damaged equipment resulting from any cause in the shortest possible time, and (6) patrol and inspect the respective systems for lamp and other failures and non-operative equipment, shall replace electric lamps in all systems as required, and (7) execute Specialty Items for unit prices as directed by the Engineer, and perform all activities required herein.

The Contractor shall maintain the various systems as described herein. No extra compensation will be allowed over and above the bid prices for meeting these requirements.

The Contractor shall service and maintain existing installations and any new installations of the same or similar type which may be installed or taken over for maintenance by the Department.

CCDOTH will hold quarterly Project Status meetings with the Contractor. The Project Manager and General Foremen shall attend these quarterly meetings which track the progress of routine and non-routine work by the Contractor.

## II GENERAL REQUIREMENTS.

### 1. GENERAL PROVISIONS AND SPECIFICATIONS

#### SPECIFICATIONS AND STANDARDS

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

#### ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS:

- Standard Specifications for Road and Bridge Construction, current version Note: Article 801.02, Standards of Installation shall apply to all systems under this Contract and is not limited to Highway Signs, Luminaires, and Traffic Signals.
- Design Manual Section 3-600 published on Highway Lighting.
- Flaggers' Handbook.
- Highway Standards.
- Manual on Uniform Traffic Control Devices.
- Recurring Special Provisions for Traffic Signals, Road and Bridge and Other Related Laws Safety Code.
- Special Provision for Special Non-RCRA Waste and RCRA Hazardous Waste Working Conditions.
- Supplemental Construction Specifications and Recurring Specifications.
- Traffic Control Plans for Daytime and Nighttime Traffic Operations.
- Work Site Protection Manual.

#### IDOT DISTRICT 1 STANDARDS AND SPECIFICATIONS:

- Confined Entry Space Policy.
- District 1 Standards.
- Recurring Traffic Signal Specifications.
- Recurring Special Provisions for Roadway Lighting.
- Standard Specifications Integrated Closed-Loop Traffic Signal Monitoring.
- Standard Traffic Signal Design Details.
- Traffic Signal Plan Preparation and Design Guide.

NATIONAL STANDARDS AND SPECIFICATIONS:

- An Informational Guide for Roadway Lighting, published by American Association of State Highway and Transportation Officials (AASHTO), 444 N. Capitol St., NW, Washington, DC 20001.
- Insulated Cable Engineers Assn. and Underwriters Laboratories publications when applicable for cable and other materials.
- National Electrical Manufacturers Association Standards, American National Standards Institute, where applicable, for signals, lamps, ballasts, and other accessories.
- American National Standards Institute, where applicable, for ballasts, and other accessories.
- ASTM Standards for materials.
- All applicable manuals and policies of FHWA.
- American National Standard Practice for Roadway Lighting, published by Illuminating Engineering Society of North America, 120 Wall St., 17th Floor, New York, NY 10005, Phone (212-248-5000).
- National Electrical Code, National Fire Protection Association, Batterymarch Park, Quincy, MA 02269, approved by the American National Standards Institute, Publication #ANSI/C2, published by IEEE, 345 E. 47th Street, New York, NY 10017.
- National Electrical Code, NFPA-70-2002, as published by National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.
- Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals AASHTO Publication.
- Institute of Traffic Engineers Technical Report NO.1 (A Standard for Adjustable Face Vehicular Traffic Control Heads).
- Emergency Response Guidebook by U.S. Dept. of Transportation, latest version, for further assistance call National Response Center (NRC) 1-800-424-8802.
- Hazardous Materials Regulations, Hazardous Materials Transportation Uniform Safety Act of 1990, Hazardous Materials Regulations and Motor Carrier Safety Regulating by U.S. Department of Transportation.
- OSHA, all applicable regulations.
- RUS, all applicable regulations.
- IMSA Standards & manuals

**2. DEFINITIONS OF TERMS**

- A. **AEGIS** – Alarm reporting and dialing system at a pumping station.
- B. **ANSI** - American National Standards Institute.
- C. **BRIDGE CATHODIC PROTECTION SYSTEM** - All types of bridge cathodic protection systems including all appurtenances owned or maintained by the County of Cook and under the jurisdiction of the Department.
- D. **CCDOTH INSPECTOR** - Employees of the Cook County Department of Transportation and Highways assigned duties by the Engineer.
- E. **CONTRACT PERIOD** - When used herein shall be the period January 1, to December 31, of any calendar year.
- F. **DAMAGED EQUIPMENT** - Any piece of equipment owned or maintained by the Department that is no longer capable of functioning as originally designed, or as since modified, or any piece of equipment that has deteriorated sufficiently in the opinion of the Engineer so that failure is imminent, or for which safety could be a concern.
- G. **DEPARTMENT SAFETY CODE** -When used herein shall mean the Illinois Division of Highways "Safety Code", latest edition.
- H. **DBE** - Disadvantaged Business Enterprise.
- I. **EMERGENCY** - A condition which is a hazard to the public, or is designated by the Engineer to be a hazard of such severity that life and property are endangered and which requires Immediate Corrective Action.
- J. **ENGINEER** - CCDOTH Engineer on this Contract.
- K. **EQUIPMENT SERVICE** - Refers to the servicing and/or restoration of any equipment to normal operating condition and appearance necessitated by service equipment wear-out, failure, damage or loss.
- L. **FROM ANY CAUSE WHATSOEVER** – When used herein shall include any and all causes except those resulting in extensive damage from declared area-wide disasters (such as fires and floods), acts of the public enemy, or an Act of God. The "area-wide disaster" exclusion will be valid only for the time period and area as defined by a Governor's Disaster Declaration.
- M. **IMMEDIATE CORRECTIVE ACTION** - Refers to all activity necessary to restore the safe operating integrity of a system or system element, without delay.
- N. **IMSA** - International Municipal Signal Association.

- O. **KNOCKDOWN (KD)** - Refers to damage which results in the knockdown of a Light Pole, Luminaire, a Traffic Signal, or a Traffic Signal or Lighting Control Cabinet.
- P. **LIGHTING INSTALLATION** - One or more lighting units powered from one common electric service.
- Q. **LOCATION** - When used in terms of routine payment refers to all equipment to be maintained at a designated installation, usually powered by the same source.
- R. **MAINTENANCE SCHEDULE** - A schedule prepared by the Engineer, or prepared by the Contractor and approved by the Engineer, showing starting and completion dates of maintenance items to be performed on the various installations or systems, or items to be replaced or work to be done for a unit price as listed in the Schedule of Prices.
- S. **MAINTENANCE FACILITIES ELECTRICAL SYSTEMS** -All types of lighting, power, and alarm circuits, including emergency generators, transfer switches, control panels, electric service and all appurtenances in all buildings and grounds designated as a Maintenance Facility owned by the County of Cook and under the jurisdiction of this Department.
- T. **MANUAL UNIFORM ON TRAFFIC CONTROL DEVICES (M.U.T.C.D.)** - The State of Illinois "Manual on Uniform Traffic Control Devices for Streets and Highways".
- U. **NAVIGATION LIGHTING SYSTEM** - All types of navigation lighting units attached to a roadway structure over navigable waterway, including all appurtenances, owned or maintained by the County of Cook and under the jurisdiction of this Department.
- V. **NEC** - National Electrical Code.
- W. **NEMA** - National Electrical Manufacturers Association.
- X. **OSHA** - Occupational Safety Health Administration.
- Y. **PATROLMAN** - Defines an electrician, who is assigned regular electrical system patrol and street maintenance response duties by the Contractor. Patrolmen have the responsibility for inspecting and servicing a pre-assigned select group of installations in accordance with a defined regular recurring time schedule. The assigned installations may be from any one (1) or all, of the Electrical Systems included under the overall scope of the Contract.
- Z. **PERMANENT REPAIR TIME** - Amount of time from initial notification to the Contractor until the time permanent repairs are made, if the Contractor was required to make temporary repairs to meet the service restoration requirement.
- AA. **POTS** - Plain old telephone service.
- BB. **PLNC** - Private line telephone service which provides a direct connection between two points through an automatic ring signal at one end when initiated at the other.

- CC. **PUMPING STATION** - All types of storm water pumping stations for roadway storm water including pumps, electrically controlled devices, pump house and all appurtenances, owned or maintained by the County of Cook and under the jurisdiction of the Department.
- DD. **QA/QC** - Quality Assurance/Quality Control.
- EE. **REGULAR WORK** - Any work upon an existing system or existing installation that is not specified in this contract as Routine Maintenance and is specifically authorized in writing by the Engineer to be performed by the Contractor, except work necessitated by negligence of the Contractor, his employees, or agents. Provisions for Non-Routine are covered in Article II, Item 10.
- FF. **RCRA** - The Resource Conservation and Recovery Act.
- GG. **RESPONSE TIME** - Amount of time from the initial notification to the Contractor until a repair person physically arrives at the location.
- HH. **ROUTINE MAINTENANCE** - Refers to all work required to staff, equip, patrol, inspect and maintain electrical systems, whole and operational, at locations as defined herein, except for work specifically excluded from routine maintenance coverage and paid separately as non-routine maintenance work.
- II. **SERVICE RESTORATION TIME** - Amount of time from the initial notification to the Contractor until the time the system is fully operational again (In cases of motorist caused damage the undamaged portions of the system are operational.)
- JJ. **SPECIAL OR SPECIALTY ITEM** - When referred to in this Contract shall refer to work that may be performed by entities other than the electrical maintenance Contractor who are not pre-qualified subcontractors but whose services are necessary because of specialized equipment, specialized expertise or the maintenance restrictions on a particular piece of electrical system equipment. Examples of specialty service entities include traffic signal control equipment and cabinet repair, motor repair shops, pump rebuild shops, communication and/or electronics repair shops, manufactures' authorized repair agents and similar service providers. Such work is not restricted to in-shop work and such services may be field-performed. Such services will not be considered as materials. Refer to subcontracting requirements for additional information.
- KK. **STANDARD SPECIFICATIONS** - Illinois Division of Highways "Standard Specifications for Road and Bridge Construction", latest edition.
- LL. **STREET AND ROADWAY LIGHTING SYSTEM** - One or more lighting units powered from one common electric service, including all appurtenances, owned or maintained by the County of Cook and under the jurisdiction of the Department.

- MM. SYSTEM** - When used herein refers to any or all Electrical Systems covered by this Contract: Highway and Yard Lighting, Maintenance Yard Electrical, Navigation Lights, Cathodic Protection, Pumping Stations and Traffic Signals.
- NN. THIRD PARTY** - Any entity other than CCDOTH or the Contractor.
- OO. TRAFFIC SIGNAL** - All electrically operated control devices and appurtenances necessary to effect the established method of traffic control at any given location.
- PP. TRAFFIC SIGNAL INSTALLATIONS** - All traffic signals including flashing signals and any such other similar equipment, including all appurtenances owned by the County of Cook or under the jurisdiction of this Department.
- QQ. UPS** - Uninterruptible Power Source.
- RR. U.S. EPA** - US Environmental Protection Agency.
- SS. WEEK** - When used herein shall mean a period of seven (7) calendar days. Any multiple of this term shall mean a corresponding multiple of the number of calendar days.
- TT. Working Day** - When used in connection with this contract shall mean any day the Offices of the Cook County Department of Transportation and Highways are open for normal business.
- UU. YARD** - Any CCDOTH Maintenance Facility.
- VV. 24/7** - Refers to operations required twenty-four hours per day, seven days a week.



### 3. CONTROL OF WORK

The Engineer will be responsible for the control of the work in conformance with Section 105 of the Standard Specifications and Contract Special Provisions.

- A. The Contractor shall designate in writing at least four responsible representatives of his organization to whom instructions may be given by the Engineer. The Contractor shall furnish the names, addresses, and telephone numbers of his representatives to the Engineer. These representatives shall be available at all times. All field supervisors shall have the sole responsibility of overseeing the field operations of their men. Whenever the supervisor is not available due to business or leave, the County is to be informed who is in charge and for how long the supervisor will be unavailable.
- B. The Engineer may make frequent investigations and periodic inspections of the respective systems and installations to determine if all maintenance operations are being performed by the Contractor promptly and satisfactorily, and in the manner specified in this Contract.

In the final month of routine maintenance, the Engineer may apply a withholding of up to 75% of the final month's routine maintenance billing until all authorized routine and non-routine maintenance work is complete, but may progressively release portions of the retainage as the incomplete work is reduced. Key items for completion of work under a calendar year (or term) include:

- All routine work completed approved with all documentations.
- All workforce analysis reports submitted and accepted.

- C. The Engineer may prepare MAINTENANCE SCHEDULES for the prosecution of work on the various items of Routine Maintenance or on special items which are to be completed at regularly stated intervals.

Except as notified in writing by the Engineer, the Contractor is automatically authorized and required to perform routine maintenance work, which includes response, scheduled work and preventative maintenance actions on all County maintained electrical systems in a manner prescribed in this Contract. All labor, personnel vehicles, construction equipment, communication and facility requirements necessary for the routine maintenance work described herein is included in the routine maintenance bid items.

Unless certain work is specifically described herein to be non-routine work, all work required by the Contract shall be included in the requirements of routine maintenance. Specific items of routine maintenance work are described under the description of work for each respective system. General requirements in support of routine maintenance are included in, but not limited to, this article. Maintenance of Department owned equipment, devices, systems and appurtenances at maintained locations shall be covered under routine maintenance unless specifically stated herein.

The Contractor shall continuously watch for System elements that are malfunctioning or in need of replacement. Malfunctioning equipment shall be repaired or replaced as part of routine maintenance. The Contractor shall, however, submit an Inspection Report, per Item 9, Reports and Forms section in this Article, for items which are a safety risk or prone to imminent failure, and receive non-routine payment for the material portion of the repair with Engineer's approval.

The Contractor shall document to the Engineer that the various items of equipment at all locations perform properly, that maintenance operations for the respective installations and systems prescribed by this contract are not to be interrupted, that maintenance completion dates as specified or agreed are met, and that repair work as performed on system equipment meets all applicable codes and Cook County requirements.

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

#### 4. GENERAL POLICIES

##### A. RESPONSE TIME:

- A.1 The purpose of this Contract is to assure that all components of the systems and installations operate essentially as originally installed or as subsequently modified and for preventive maintenance, to guard against and prevent equipment failures due to mechanical or electrical defects. The proper functioning of the systems and installations is essential to maintain the smooth, expeditious, and safe movements of traffic. Consequently, it is imperative that all equipment in the systems and installations be serviceable and in good operating condition at all times so as to insure maximum working efficiency and prevent unnecessary failures. When equipment failures do occur, due to unforeseen events, knockdowns, or from any cause whatsoever, **TIME IS OF THE ESSENCE** in arriving at the scene and taking corrective measures.

To insure this continuous and uninterrupted operation of the equipment, **service calls and emergency calls shall be answered promptly, and extraordinary effort shall be exerted by the contractor to render this service. Response time for all calls is to be one (1) hour, and temporary service restoration is to be four (4) hours, and permanent equipment repairs in seven (7) days, with the exception of cabinet and pole knockdowns which have to be temporarily restored in twenty four (24) hours, and permanently repaired in twenty-one (21) days.**

**Traffic controller, post and pole foundations which have to be permanently repaired in twenty-one (21) days. Mast arm assembly and pole must be set within 7 days after foundation repairs are completed or after a replacement pole and/or arm assembly become available. Temporary head placement shall meet the requirements of the current MUTCD for driver visibility.**

Traffic system maintenance calls shall be responded to within one (1) hour and restoration for all system equipment, (all hardware, software, and information as carried in the database software or communications, including communications hardware between the headquarters computer and all remote terminals) shall be within twelve (12) hours, except as otherwise permitted by the Engineer. Replacement parts and/or equipment shall be on hand and installed within 24 hours of the service request, except as permitted by the Engineer, and permanently repaired in fourteen (14) days.

**Response time damages are a one time charge of two hundred dollars (\$200) per incident. Service restoration penalties are a one time charge of two hundred dollars (\$200) per incident. These moneys, if applied as liquidated damages by the Engineer, will be deducted from the monthly billing.**

**B. EMERGENCY RESPONSE AND CALL-OUT POLICY**

**B.1 EMERGENCY RESPONSE**

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

The following top priorities of work, as listed below, shall take precedence over work of others and other work on this contract, unless permitted, on a case-by-case basis, by the Engineer. The response times to these situations shall be as defined elsewhere herein. It is not necessary for the Contractor to obtain approval to utilize dedicated personnel, as specified herein, to respond to these top priorities.

1. Railroad/Vehicle Conflict.
2. Railroad Interconnect Problem/Outage
3. Traffic Control Conflict.
4. Traffic Obstruction.

5. Electrical Hazard.
6. Power Outage.
7. Water on Pavement.
8. Hazardous Materials on Highway.
9. Other incidents as specifically alerted by the Engineer

When equipment failures do occur due to unforeseen events, motorist caused damage, or from any cause whatsoever, time is of the essence for Contractor personnel to arrive at the scene, shut-down or safely isolate any potentially hazardous electrical condition, clear the pavement of any equipment debris resulting from the damage and take corrective measures to assure the safety of the motoring public, and coordinate the efforts to restore normal traffic operations.

The Contractor's response shall include not only reporting to the location of an incident or trouble but also timely immediate action as prescribed for the various Systems herein, or as required by the situation to mitigate immediate hazards and effect necessary temporary and/or permanent repairs and restoration of electrical systems.

Normal response time shall be one (1) hour, with temporary service restoration in four (4) hours, and permanent equipment repairs in seven (7) days. Refer to Articles herein for specific response time requirements. A Ticket is required to document every call-out/dispatch response (temporary and/or permanent repair).

All damaged equipment, determined by the Contractor not to be re-usable, shall be removed from the County highway right-of-way within twenty-four (24) hours from the time of the notification of the incident, exclusive of Saturdays, Sundays, and Holidays, and taken to the Contractor's shop area and shall be disposed of by the Contractor.

All shoulder, or lane closures required for clearing, and installing temporary or permanent repairs shall be in conformance with existing Departmental standards governing lane closures.

## B.2 CALL-OUT POLICY

The Contractor is required to have a Call-Out policy that formalizes the 24/7 response necessary to provide continuous maintenance for Systems covered under this Contract. The Contractor shall appoint managerial level personnel to be on-call (on a rotating basis) after the normal workday hours and on weekends to serve as an Emergency Response Coordinator to prioritize the emergency response for all electrical systems. In this capacity the Emergency Response Coordinator shall arrive on scene to coordinate work with the Dispatch Center Supervisor.

The Emergency Response Coordinator shall have the authority to call out additional personnel for dispatching or patrol duties. During storms or other emergency situations, the Dispatch Center Supervisor and all dispatchers shall be responsible to the Emergency Response Coordinator (or the Project Manager, if in attendance at the Dispatch Center).

Under storm conditions, emergency situations or other special circumstances requiring the

setting of priorities from among system needs requiring immediate corrective action, which go beyond the Contractor's immediate ability to respond, the assigned on-call Emergency Coordinator shall set response priorities in such a manner as to minimize hazard and inconvenience to the public and otherwise optimize the effectiveness of the Contractor's forces, but only, after first initiating the callout of additional forces in sufficient number to address the situation. The Contractor shall communicate and coordinate with the Engineer in such situations.

The Engineer reserves the authority to re-direct the Contractor's work priorities in response to emergency situations, potential hazards, contract coordination and incomplete or deficient work and the Contractor will be allowed no additional compensation for priorities so redirected.

Each Thursday the Contractor shall email to the Engineer the weekend and following week's On-Call Work Schedule for the Emergency Response Coordinator, Dispatch Center personnel and On-Call Patrolmen.

Following repair work, the associated area restoration shall be equal to or better than the original area condition. For example, in a construction area the Contractor shall regrade the surface work area with black dirt, placing seed or sod.

The Contractor may be required to perform maintenance or repair on equipment not maintained by him at Contract unit prices as requested by the Engineer.

C. PERSONNEL QUALIFICATION:

C.1 The Contractor shall at all times provide a force of qualified personnel sufficient in the opinion of the Engineer to perform the routine work, non-routine work and specialized operations required and described herein. The force of qualified workmen shall be sufficient to simultaneously perform routine maintenance activity, non-routine work and emergency operations at all times of the day and night. **A minimum of five (5) dedicated patrol persons plus one (1) General Foreman shall be assigned to work exclusively on this Contract.** The General Foreman and patrol persons will be under a supervisor who is in the Contractor's main office, but is not dedicated exclusively to this Contract. Three of these patrol persons shall have a minimum of four years experience with closed loop systems. This is in addition to loop, pump house, knockdown repair and construction crews (minimum size of 2 men per crew) who shall finish all County work and regular work before being able to do work for other entities.

All patrol persons shall meet the following qualifications:

- IMSA Traffic Signal Field Technician level II certificate with a minimum of eight (8) year experience.
- Ability to respond to callout tickets, trouble calls and emergencies 24/7 and shall meet the one (1) hour in-district response requirements

- Ability to maintain the integrity of all traffic signal timing, parameter programming information, traffic responsive and time of day signal systems
- Substantial experience with NEMA traffic signal closed loop systems operating in the traffic responsive mode
- Extensive experience in troubleshooting equipment malfunctions including all closed loop signal system malfunctions.
- Ability to troubleshoot low voltage equipment malfunctions.
- Ability to perform communication equipment repairs.
- Knowledge and familiarity with single mode fiber optic cable installations.
- Knowledge and familiarity with troubleshooting electronic equipment.
- Knowledge and familiarity with OSHA safety requirements.
- Knowledge and familiarity with IDOT Traffic Control standards.
- Valid electrician's card.

**The individuals appointed to these positions shall be approved by the Engineer prior to the start of the Contract. Any position change shall be approved by the Engineer.**

The personnel responding to emergency calls shall be stationed so that their travel time to arrive at any designated point of trouble shall not exceed one hour during normal and under normal traffic conditions.

Electronic Patrol and all Closed Loop System reports are not to be done by a patrolman. This work is to be done by general foreman in the Contractor's shop or main office.

General foreman shall also meet the following qualifications:

- Advance training in NEC and MUTCD guidelines and methods in the last 3 years.
- Attendance in advance IMSA seminars in the last 3 years.
- Have IMSA level III certification by July 1, 2016
- Trained in the operation of Aries, MarcNX and Centracs traffic signal management software.
- Trained in the operation and programming of Econolite and Eagle/Siemens controllers,

including those interconnected to railroad warning devices.

- Trained in the operation and management of closed loop traffic signal systems.
- Trained in the Traffic Control and Protection measures and procedures.
- Managed a government maintenance contract in the last 5 years with a technical staff of five (5) or more.
- Have a minimum of ten (10) years experience in construction, maintenance, and operation of all traffic signals and traffic signals systems currently being used in Cook County.
- Hands-on experience in solving trouble calls for any traffic signal cabinet or communications failure.
- Maintain a current driver's license. Maintain equipment and Work Zone safety certification.
- Be able to communicate effectively.
- Experienced journeyman electrician with a valid electrician's card.

Pump Station personel shall also meet the following qualifications:

- Extensive construction experience in mechanical and electrical of pump station or commercial and industrial work with a minimum of five (5) years' experience.
- Basic fundamental skills, knowledge and understanding of power distribution 4160 volt.
- Electrical and mechanical maintenance experience, working on all types of storm water pumping station equipment with pumps that are rated at 480/240 volt and capacity that range from 300 GPM to 30,000 GPM.
- Knowledge of implementation and preventive maintenance of vertical and submersible pumps.
- Experience, training and skills to troubleshoot and repair pumps and other mechanical equipment at pump stations.
- Experience with low voltage motor-control centers for 3-phase (240/480) systems.
- Experience with relay logic controls, SCADA systems, PLC program controls and responsible for its design, installation, testing and acceptance.

- Experience in the maintenance and operation of switch-gear and, MCC, circuit protection equipment, motor controls, fire and gas alarm system.
- Experience in acceptance inspection and testing of pumping stations.
- Familiarity with engine power generators and related transfer switch equipment.
- Familiarity with Hazardous materials operations.
- Familiarity with OSHA Safety Standards.
- Familiarity with Traffic Control Standards.

All work crews shall also meet the following qualifications:

Work performance requirements for all work crews to perform specified tasks, inspections, and motorist caused damage, outages, cable locate, repair and other work specified herein and its installation performance requirements dictate that individuals have:

- Minimum of five (5) years hands-on experience working with 120/240 volt and 240/480V service. Work experience as an electrical trades person with local electrical contractor companies.
- Valid electrician card.
- Ability to meet the 24/7, one (1) hour response requirements.
- Experience interpreting contract drawings and wiring diagrams.
- Experience using and reading current and voltage meter, Meggers and other test instruments, extensive experience reading and troubleshooting control ladder logic.
- Knowledge and familiarity with OSHA safety requirements and its application Knowledge and familiarity with Traffic Control standards.
- Experience in troubleshooting, special maintenance problems, cable repairs, outage repairs, underground cable repair, cabinet replacement, temporary repairs, inspections, knockdown replacement, and other maintenance work as specified herein.
- Extensive experience in clearing motorist caused damage for safety.
- In depth knowledge of Safe work practices, applicable codes, laws and ordinances, circuit diagrams and industrial controls.



- Experience using computers and their operation, maintenance, software programs and application needs.

Traffic Signal Systems/Railroad shall also meet the following qualifications:

- Advance training in NEC and MUTCD guidelines and methods in the last 3 years.
- Attendance in advance IMSA seminars in the last 3 years.
- Have IMSA level III certification.
- Experienced in the operation, testing and trouble-shooting of District 1's traffic signals that are interconnected to railroad warning devices. Has working knowledge of ICC procedures and practices for traffic signals interconnected to railroad warning devices.
- Trained in the operation of Aries, MarcNX and Centracs traffic signal management software.
- Trained in the operation and programming of Econolite and Eagle/Siemens controllers, including those interconnected to railroad warning devices.
- Trained in the operation and management of County closed loop traffic signal systems.
- Trained in the County's Traffic Control and Protection measures and procedures.
- Have a minimum of ten (10) years' experience in construction, maintenance, and operation of traffic signals and traffic signals systems currently being used in the County.
- Experienced in solving trouble calls for any traffic signal cabinet or communications failure.
- Maintain a current driver's license.
- Maintain an electrician's card.
- Maintain equipment and Work Zone safety certification.
- Be able to communicate effectively.

The repair facility staff shall include at a minimum one full time employee dedicated to the repair and testing of traffic signal equipment. This employee shall be capable of conducting the required conflict monitor/MMU testing and performing cabinet and controller troubleshooting onsite at the repair facility.

When dedicated patrol persons and foremen are off for any reasons, the Contractor must make substitutions so that the total amount of dedicated personnel remains constant.

The Contractor shall provide individual photo card identification for all personnel working on this Contract.

The Contractor may use dedicated personnel for **emergency** situations of others provided that he first gets approval from the Engineer. The emergency use for others shall not be sufficient grounds to not do routine and non-routine duties in the prescribed time frames.

The Contractor may use knockdown, pump station and repair crews for other work, but Department work must come first. The Contractor is to keep weekly payroll reports for this Contract at his office for review by the Engineer. The Contractor is to report monthly with a listing of all workers and subcontractors being used for this Contract.

The Contractor is to supply an organizational chart with resumes of all workers to be used on this Contract at the Pre-Construction meeting. The Engineer has the right to reject any worker if he feels that the worker is not qualified.

D. PERSONNEL TRAINING PROGRAMS:

D.1 GENERAL

The Contractor shall establish a work training program for equipment requiring detailed training or troubleshooting and/or situations requiring special attention. Proper training of contract personnel shall assure acceptable maintenance by the Contractor while attaining the highest level of safety for contract personnel and the motoring public. Although these personnel training programs shall be included under routine maintenance, depending upon the dedicated personnel workday, the Contractor may be required to conduct these training sessions on employee overtime in order to have all training sessions completed by June 1, 2017, or unless otherwise approved by the Engineer.

The Training programs shall be taught by qualified instructors, and where certification of the trainer is applicable, the trainer shall be certified. The Training Programs shall be submitted for approval by the Engineer at the Pre-Construction Meeting. All instructors and instruction materials shall be approved by the Engineer prior to all training sessions.

Unless otherwise indicated or arranged, the Contractor shall provide for the attendance of four (4) County staff at each formal training session, coordinating attendance with the Engineer.

D.2 OSHA AND OTHER SAFETY TRAINING

All Contractor personnel shall receive training in applicable OSHA requirements and other safety related topics to include, but not be limited to, Lock-Out/Tag-Out, Confined Space, Safety, Respirator Training (as applicable), Use of Safety Harnesses for work on structures and basic First Aid.

**D.3 NATIONAL ELECTRICAL CODE/GROUNDING/LIGHTNING PROTECTION**

The Contractor shall establish a training- program not less than one (1) day in duration to address proper and safe grounding and/or National Electrical Code and/or lightning protection of electrical systems. The program shall be taught by a professional trainer regularly engaged on this topic, and the training shall specifically address applications to typical CCDOTH systems such as electrical installation and maintenance, traffic signals, highway lighting, pump stations, and maintenance facilities. Treatment of this material and selection of the trainer shall be coordinated with the Engineer in advance. This training shall be provided for all appropriate technical personnel, including all personnel engaged in electrical wiring work. The Contractor shall also provide for the attendance of six (6) CCDOTH staff. It is anticipated that this somewhat customized, program would be taught on site within Cook County.

**D.4 OTHER TRAINING**

The Contractor shall provide in-house training sessions for those individuals who would be maintaining specific equipment requiring detailed maintenance or troubleshooting and/or situations requiring special attention, or for specific procedures which are unique to this Contract.

The Contractor shall submit to the Engineer for approval a copy of the training criteria and list of personnel to be trained. The Engineer shall witness all specific equipment and dispatch center training sessions. This in-house training may be required more than once per year if situations and/or personnel changes occur. Required in-house training includes:

**D.4.1 TRAFFIC SIGNAL SYSTEM:**

The Contractor shall provide user training on traffic signal controller operations, from the controller manufacturers for all Patrolmen and CCDOTH personnel as specified above for each of the types of controllers in use by the Traffic Signal System in Cook County, or as approved by the Engineer, including but not limited to

- NEMA TS-1 Cabinets.
- NEMA TS-2 Cabinets.
- Econolite System Controllers.
- Eagle System Controllers.
- Intersection Controllers – Transyt, TCT Multisonic, Traconex, Eagle Econolite, Honeywell, and Singer.
- Video Detection - Iteris, Autoscope.
- Conflict Monitors – EDI, RENO
- MMU – EDI, RENO, Econolite.
- BIU - Eagle, Econolite.
- Fiber Optic Troubleshooting.

- System and Intersection Controller Software Uploading and Downloading (Closed Loop System Operations).
- Detector Amplifiers.
- Grounding Troubleshooting.
- Railroad Interconnect.
- UPS Systems.
- Radio interconnect trouble shooting.
- Traffic Signal system timings.
- Traffic Signal trouble shooting.
- Wireless, Thermal Camera, Magnetic and Radar Vehicle Detection.

**D.4.2 LIGHTING SYSTEM:**

Contractor personnel responding to the Lighting System shall have basic training on the following items:

- Cabinet Controls.
- Clock Programming.
- Control Wiring.
- Lock Out - Tag Out.

**D.4.3 PUMP STATION SYSTEM:**

Contractor personnel, conducting any routine and/or non-routine work on the Pump Station System shall have introductory training on the following items:

- Ladder Logic.
- Mechanical Training.
- Emergency Response Training for Water-on-Pavement.
- Emergency Response Training for Hazardous Material Situation.
- Lock Out - Tag Out.

**D.4.4 MAINTENANCE FACILITY SYSTEMS:**

Contractor personnel, conducting any routine and/or non-routine work on the maintenance facility systems shall have introductory training on the following items:

- Alarm Systems.

- Emergency Generators and Transfer Switches.
- Calcium Chloride Control Systems.
- Proper check-in procedures.

#### D.4.5 DISPATCH CENTER

The Dispatch Center personnel shall be trained on Contract requirements including alarm response and documentation, and field response documentation. A field tour to view electrical equipment shall be required.

- Ticket Entry.
- Maintenance Transfers.
- Traffic Signal Patrol Logging.
- Water on Pavement Reporting.
- PS AEGIS Alarms.
- Maintenance Facility Alarms.
- Cable Locate Entry.

The Contractor shall submit to the Engineer for approval a copy of the training criteria and list of personnel to be trained. The Engineer shall witness all specific equipment and Dispatch Center training sessions.

### E. SAFETY PROGRAMS AND REQUIREMENTS:

#### E.1 GENERAL REQUIREMENT

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

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

The Contractor shall assure that all personnel be trained in, and have knowledge of approved equipment grounding methods for all work under this contract. The

Contractor shall be fully responsible for compliance with all NEC requirements. The Contractor shall be responsible for the maintenance of all existing system and equipment grounding under routine maintenance.

Should locations be identified for which system or equipment grounding is missing or otherwise not in compliance with NEC requirements, the Contractor is obligated to report such locations to the Engineer.

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

## E.2 CONFINED SPACE ENTRY

The Contractor shall submit at the Pre-Construction Meeting, a copy of the Contractors Confined Space Entry and Training Policy which shall be in full compliance with all OSHA requirements for the duration of this Contract. Employees shall be required to:

- Follow all general safety rules and regulations
- Abide by Confined Space Regulations
- Wear proper safety equipment at all times
- Report unsafe conditions to supervisory personnel and the Engineer
- Report any injuries sustained within a Confined Space.

The Contractor shall train and provide safety equipment to all field personnel that are involved with work within a space, as defined as Confined Space within the Training Policy. A listing of personnel who are trained or who will be trained for entry into confined spaces shall be included in the Pre-Construction Meeting submittal.

## E.3 HAZARDOUS MATERIALS OPERATIONS:

All activity with contaminated waste shall conform to the Department's Standard Specifications for Road and Bridge Construction Article 669. The Contractor shall employ the services of, or have a full-service Sub-Contractor designated as the Hazardous Waste Contractor, familiar with and capable of complying with all Federal, State, or local regulatory requirements and regulations pertaining to RCRA hazardous and Special non-RCRA waste management and shall be responsible for ensuring the implementation of these requirements. The Hazardous Waste Contractor shall have a 24 hour emergency call number and shall be capable of responding to a Pump Station within one (1) hour of notification: No additional compensation will be allowed for

these services.

The Supervisor shall direct the Hazardous Waste Contractor and other Contractor personnel as necessary to remove and properly dispose of oil, gasoline or other pollutants from the pump station wet pit or other area as directed. Removal shall be by means other than pumping pollutants into the normal station discharge sewer or receiving open water channel. (The Contractor may store suitable absorbent battens in a drum at each Pump Station which discharges to a waterway.)

The Contractor shall provide a list of proposed full service contractors, for Engineer-approval, at the Pre-Construction Meeting.

The Hazardous Waste Contractor shall:

- Coordinate with all pertinent regulatory agencies to secure all necessary permits and approvals and shall be responsible for coordinating all permits with the Illinois Environmental Protection Agency (IEPA).
- Submit to the Engineer, for approval. A copy of all federal, state, or local required licensing documents to perform this work.
- Select a Hazardous/Special waste landfill/disposal facility, verifying that selected landfill/disposal facility is in compliance with applicable standards for hazardous and special waste and whether the disposal facility is presently, has previously been, or has never been, on the U.S. Environmental Protection Agency's (U.S. EPA's) National Priorities List or the RCRA List of Violating Facilities.
- Obtain written approval of the selected landfill/disposal facility from the Engineer, who reserves the right to review and to accept or reject the selection.
- Perform all tests required and make all necessary arrangements for waste disposal approval with the selected landfill/disposal facility.
- Be responsible for transporting and disposing all material classified as a 'Special Waste' or 'Hazardous Waste' from the job site to the approved landfill/disposal facility assuring that the transporter and vehicles comply with all Federal, State, and local regulations governing the transportation of Special Waste and Hazardous Waste.
- Shall prepare a technical report within 30 days of the conclusion of the project, describing the activities conducted during the life of the project and submit two (2) copies to the Engineer.

#### E.4 TRAFFIC CONTROL SAFETY AND PLAN

Traffic Control and Safety - The Traffic Control shall be in accordance with the

applicable sections of the Standard Specifications, the Supplemental Specification, the "Illinois Manual on Uniform Traffic Control Devices for Streets and Highways", any special details and Highway Standards contained in the plan, and the Traffic Control Plan for the Contract. The Contractor shall give special attention to Articles 107.09 and Division 700 of the Standard Specifications.

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

The Contractor shall request and gain approval from the Engineer twenty-four (24) hours in advance of all daily lane, and shoulder closures, and seventy-two (72) hours in advance of all permanent and weekend closures in Cook County.

The Contractor shall provide bound copies of the Traffic Control Plan for the Contract operations for all patrol vehicles, work crew vehicles, and supervisory vehicles.

The Contractor shall submit the name of the subcontractor for traffic control installation and maintenance if one shall be requested for use on this Contract at the Pre-Construction Meeting.

#### E.5 TRAFFIC PROTECTION

The Contractor shall not occupy any portion of the roadways during peak traffic periods from 6:00 A.M. to 9:00 A.M. and from 3:00 P.M. to 6:00 P.M., Monday through Friday, or at other times of peak traffic volumes when directed by the Engineer, except to respond to an emergency call, or upon approval from the Engineer. Twenty-four (24) hours prior to starting any major maintenance work on any roadway proper, a letter requesting Traffic Control Authorization shall be submitted to the Engineer for Approval. No work will be started on the roadway unless an approved authorization is on file in the Department. One lane of two-lane roadways, and at least one through lane in each direction on multilane highways, must be kept open for traffic, unless otherwise directed by the Engineer. These restrictions shall not apply when and for the time necessary to clear from the roadway damaged equipment, debris, or other objects which constitute a hazard.

The Contractor shall erect barricades, signs, cones, flags, and lights as may be required by Section 107.14 of the "Standard Specifications" to properly protect his workmen and the motoring public when repairs are being performed on or near the roadway. Number, type, color, size and placement of all traffic control devices shall conform to the "Manual on Uniform Traffic Control Devices for Highway Construction and Maintenance Operations" latest edition. Flagmen shall be supplied with suitable safety equipment as prescribed in the Department Safety Code. Should the Engineer require additional flagmen, they will be paid for in accordance with Section 10 of this Article. The expense to the Contractor in fulfilling the above obligations shall be considered as incidental to the contract and no extra compensation will be allowed



except for extra flagmen required by the Engineer.

F. VEHICLE

F.1 GENERAL REQUIREMENT

The Contractor shall furnish transportation for his employees and equipment used in the performance of this Contract. All vehicles used by the Contractor shall conform to all applicable laws and safety code and shall carry such lights and safety appurtenances as may be prescribed by the Department. All vehicles are to be clearly identified by a decal with the Contractor's name, location and Contractor's phone number. The decal shall be readily visible on the exterior sides and rear of each vehicle. Removable magnetic signs or similar non-permanent identification is not permitted at any time. Sub-Contractor vehicles shall be held to the same requirements. Patrol cars, trucks, and supervisory cars operated by the Contractor in connection with this Contract shall be equipped with air conditioning, 2 power jacks, a cell phone, a Lap Top PC, a spotlight, a directional light bar, an utility tent of quick setup by one person, all necessary test equipment as listed below, and a wireless field communications system to be approved by the Engineer. Supervisory vehicles shall also be equipped with cellular telephones, as a means of expediting and maintaining 24-hour communications with the Contractor's headquarters, field crews, and this Department.

This Contract shall include the Contractor furnishing (for the duration of the Contract) one (1) vehicle to be used by the Mechanical, Electrical, Architectural and Landscaping Division. The new vehicle shall be a compact SUV manufactured by a domestic owned company and assembled in America and shall be of the current model year. The vehicle shall include power steering, four wheel anti-lock disc brakes, intermittent windshield wipers with washers both front and rear, 3.6 liter or 2.5 liter engine, all-wheel drive or four wheel drive, 6 speed automatic transmission, minimum of 63 cubic feet cargo volume, minimum of 6.9 inch ground clearance, minimum of 106 inch wheel base, air conditioning, deep tinted windows, electric rear window defogger, four (4) door, navigation system, amber safety lights (hide away type which shall be mounted in headlights and backup lights) and power windows. The Contractor shall be responsible for all licensing, insurance for the vehicle and drivers, furnishing I-PASS units for the vehicle, all operating costs (gas, oil etc.), maintenance and repairs of the vehicles supplied. When maintenance or repairs are required for the vehicle the Contractor shall provide spare vehicle for use until the repairs and/or maintenance is completed. Depending on the type of maintenance that is required, the Contractor shall be required to pick up and return the vehicle.

If this contract is reviewed for a second year, the vehicle shall have no more than 60,000 odometer miles. If the vehicle has more than 60,000 odometer miles, it shall be replaced with a new vehicle. If this contract is reviewed for a third year, the vehicle shall have no more than 100,000 odometer miles. If the vehicle has more than 100,000 odometer miles, it shall be replaced with a new vehicle.

Prior to the start of the contract period, the Contractor shall have all vehicles and equipment staged and available for inspection by the Engineer. The Engineer shall provide not less than five (5) calendar days advance notice to the Contractor of the desired inspection date.

These required fleet vehicles shall have no more than 60,000 certified odometer miles as of the beginning of the contract, January 1, 2017. If this contract is renewed for a second year, all required fleet vehicles shall have no more than 120,000 certified odometer miles as of January 1, 2018. If this contract is renewed for a third year, all required fleet vehicles shall have no more than 130,000 certified odometer miles as of January 1, 2019. Two bucket trucks shall be assigned to the County dedicated patrolmen to use daily. The buckets are to have hinged doors. One is for northern portion of the County and the other one is for southern portion of the County.

## F.2 PORTABLE TRAFFIC SIGNAL MAST ARM SYSTEM

The Contractor shall have a minimum of two trailer mounted temporary portable, folding traffic signal mast arm systems. Portable traffic signal mast arm systems shall meet NEMA and AASHTO requirements and be able to be hardwired into the existing traffic signal installation.

## F.3 VEHICLE EQUIPMENT (PER VEHICLE)

- Lap-Top Computer, minimum 2.66 GHz, Intel Core 2 Dual Processor, power cords to run in vehicle, Carry-Bag operating all applications/software required for the Traffic Signal Systems, video detection and flashing beacons.
- Tablet with 10" screen.
- Amp-Volt Meter.
- Loop Analyzer Model ILA-550.
- Conduit-Cable Locator.
- Light Source for Fiber Cable.
- Emergency Pre-emption Emitter.
- Fish Tape - 100 ft.
- Measuring Wheel.
- ASC-2S Controller.
- ASC-3 Controller.
- EPAC Controller.
- Eagle M50 Controller.
- EDI Conflict Monitor.
- EDI Malfunction Monitor (MMU 16E or better)
- Loop Amplifiers (shelf & rack) usable for both TS1 & TS2.
- Load Switches.

- Loop Splicing Equipment.
- Cabinet Keys & Locks.
- Relays, Fuses, Circuit Breakers.
- Paint – Yellow.
- Electric Drill - ½" chuck.
- Shovel.
- TS2 BIU.
- Cell-Phone Interface for PC.
- Quantity of 8 Stop Signs.
- Quantity of 8 Traffic Cones.
- Vacuum cleaner.
- Work Lights.
- Signal Heads, Pedestrian Heads.
- Pedestrian Pushbuttons.
- Service Door Covers.
- Bulbs.
- Bolt Cutters.
- Graffiti Removal Solvent.
- Extension Cord, 100 ft.
- Set of Tools.
- Cables, Uniducts
- Visors, Backplates
- Cabinet Fan, Filter.
- Cabinet Thermostat.
- Duct Seal.
- Cabinet Silicone Caulk.
- Digital Camera or Camera phone.
- Strobe warning lights, spot lights, and directional bar that meets or exceeds current standards.

**G. AVAILABLE TEST EQUIPMENT:**

The Contractor shall own all the following equipment.

- O.T.D.R. Siacor Model 340 or equal with necessary modules capable of testing both single-mode and multi-mode fiber cable.
- 3-Point Ground Tester.
- Camera, Digital.
- Lane Closure Signing.
- Portable PROM Programmer Dataman 54 or equivalent.
- Lineman's test set Harris Dracon TS-21x89.
- Digital multimeter, true RMS multimeter, with case Tektronix TX3 or latest version.
- Wide band scope with case equal to or exceeding Halcyon704A-200 or W & G VF-I.
- Digital AC clamp on meter with case equal to or exceeding Fluke Model 30 or latest.
- Breakout box with case equal to or exceeding Black Box Model SAM232-6S.
- Hand held digital Oscilloscope equal to or exceeding Tektronix (THS710A) with spare battery and case or Latest version.
- Wide band TIMS/Signaling test set equal to or exceeding Halcyon 704A-400.
- Pipe and cable locator equal to or exceeding Nilsson Pipe And Cable Locator Model #715 with Nilsson 12 volt Rechargeable battery Model #110A or latest version.
- Clamp on ground resistance meter equal to or exceeding AEMC Model #3700 or latest version.
- Major Megger.

H. CONSTRUCTION TEST EQUIPMENT:

- H.1 The Contractor shall own and maintain test equipment available for specialized maintenance testing at all times by Contractor's work crews, and given two (2) hour notice, for the Engineers use in inspecting the Contractor's work. All equipment shall be owned or under long-term lease to the Contractor.

The Contractor is expected to maintain all test equipment, in accordance with the manufacturers specifications at all times, including certified calibration by a responsible test lab. The equipment shall have the test lab's most recent calibration ticket attached.

The types of required test equipment as listed below shall be ready for inspection by the Engineer by January 2, 2017.

The Contractor shall submit an itemized list of all test equipment and copies of each instrument certification calibration at the Pre-Construction Meeting:

- Multimeters with Current Probe, and Thermal Probe.
- LINEMAN'S TEST SET - Equal to Harris Dracon Model TS-21x89.
- TIME DOMAIN REFLECTOMETER - With case equal to Tektronix Model 1502B (metric version) with battery pack and chart recorder.
- RUSTRAK RANGER 11 POWER LOGGERS - Model RR2-123 or equal, with communications module or recording, monitoring, and reporting multimeters with current probe, and thermal probe.
- CLAMP-ON GROUND RESISTANCE METER AEMC Model 3700 or equal.
- AMPROBE AND DIGITAL MULTIMETERS - Equal to FLUKE, latest model.
- HOTSPOT LOCATOR - Equal to Gen-Eye hotspot pipe locator GL 185 with 5-watt transmitter
- OTDR Fiber Optic Tester w/launch kit, equal to EXFO model FTB200.
- Microwave frequency county for 6 Ghz and 11 Ghz frequencies, HP/Agilent model 5350B.
- LINEMAN'S TEST SET - Dracon Model TS-21 x89.
- BREAKOUT BOX WITH CASE - Equal to Black Box Model SAM232-6s.
- HANDHELD DIGITAL OSCILLOSCOPE - Equal to Tektronix (THS71 0A) with spare battery, case and charger.
- PIPE AND CABLE LOCATOR - Equal to Pipehorn 800 series pipe and cable locator.
- GROUND RESISTANCE TESTER - Equal to AEMC Model 3700 with AEMC 4500 test kit or latest.
- MAJOR MEGGER.
- DIGITAL TACHOMETER - Latest Model.
- SURVEY RODS-LEVEL - Round Fiberglass, 25'- 5 Section, D electric Certified.
- 4 CHANNEL GAS DETECTOR.
- DIGITAL LOW RESISTANCE OHMMETER.
- Fiber Optic light source and detector for testing both SM and MM fiber optic cables, Noyes Model SMLP 5-5 or equal.

- Signal Field Strength Meter with case equal to POTOMAC INSTRUMENTS, Model FIM-21.
- Triaxial Gauss Meter, equal to Bell Technologies, Model 4080 or better.
- Coaxial Cable Tester, equal to TWA Communication Model #62-204.
- Infrared thermometer, equal to Fluke 62 series or equivalent.
- Digital Multimeters, equal to Fluke latest model.
- Insulation Resistance Test Equipment, equal to Megger or approved equal.
- (2) Digital Low Resistance Ohmmeters, which meet the following requirements:
  - Ranges: 2, 20, 200, 2000, and 20000 Ohms
  - Resolution:  $0.5 \times 10^{-3} \times \text{range}$
  - Accuracy:  $\pm (0.2\% + 2)$
  - Power Source: Line Voltage/Battery
  - Accessories: Ground Test Kit
  - Make: AEMC Digital Ground Resistance Tester or approved equal
- (2) Digital Multimeters, which meet the following requirements:
  - Voltage AC: Maximum Voltage: 1,000 V
  - Basic Accuracy:  $\pm (1.0\% + 4)$
  - Resolution: 0.1mV X Range multiplier
  - Voltage DC: Maximum Voltage: 1,000 V
  - Resolution: 0.1 mV X Range Multiplier
  - Basic Accuracy:  $\pm (1.5\% + 3)$
  - Resistance: 600 Ohms – 50 M Ohms
  - Power Source: Rechargeable Battery
  - Make: Fluke 80 Series DMM or approved equal
- (2) Fall-Off-Potential Ground Resistance Tester, which meets the following requirements:
  - Ranges:  $2\Omega$  to  $20k\Omega$
  - Resolutions:  $0.5 \times 10^{-3} \times \text{range}$
  - Accuracy:  $\pm (2\% + 1)$  from 10% to 100% of range
- (4) Insulation Resistance Test Equipment, which meets the following requirements:
  - Resistance: 0 to 2,000 M Ohms
  - Voltage: 250, 500, 1000 V dc + 30 % Max.
  - Accuracy:  $\pm 1.25\%$  of full scale deflection on 2.8" arc length Lo- $\Omega$  resistance 0 to 5,000 Ohms@ 3 V  $\pm 0.2$  V
  - Voltage: 0 to 600 Volts
  - Accuracy:  $\pm 3\%$  of reading
  - Power Source: Hand Crank/Line/Battery
  - Make: Megger or approved equal

- (2) Amprobes, which meet the following requirements:
  - Current AC
  - Range: 1 A - 600 A, AC 1 A - 1,000 A, DC
  - Lowest: 0.5 A 0.5 A
  - Accuracy: 2 % + 0.5 A
  - Useable
  - Frequency: DC - 10 KHz
  - Output Levels: 1 mV/A
  - Power Source: Rechargeable Battery
  - Make: Fluke 80-i1010 or approved equal

Fiber Optic Light Source and Detector for testing both SM and MM fiber optic cables,  
Noyes Model SMLP 5-5 or equal

The Contractor shall also maintain and repair, including furnishing and installing all necessary batteries, and calibrate, maintain and repair all County owned test equipment.

I. COMMUNICATION SET UP

- I.1 The Contractor shall have in place a County wide wireless field communications system for the Contractor's maintenance fleet, ( including all patrol, construction and supervisory vehicles), as well as for the Department personnel monitoring the Contract. The system shall be a multiple-location-infrastructure based, digital wireless communication system (trunked radio system with integral cellular telephone capability).

All units shall have digital radio one-to-one and telephone communications service allowing the capability to initiate and receive calls in a direct connection from party to party, and dial telephone service, have numbers assigned by the local exchange carrier, a name and number called display, choice of ring or vibrate call notification, and have the capability of storing at least ninety-nine (99) preset numbers. The system shall provide voice-messaging capability to store at least ten (10) messages. All Contractor patrolmen, field supervisory or management personnel, subcontractor supervisory personnel, and six (6) Department personnel shall be provided units equal or better than the Kyocera Brigadier with Android 4.4 KitKat OS, as approved by the Engineer. The units shall have push to talk, unlimited voice, unlimited text, unlimited data and with activated wireless tethering capability, the largest battery available, a 16Gbit micro SD card with an 8.0 megapixel camera or better, email service, and immediate photo labeling message and transmission capability. Each communication unit and its accessory equipment shall be new, and shall be tested and approved by the Engineer prior to purchase or lease by the Contractor. The Contractor shall furnish and maintain three (3) 10" tablets with 128 GB storage 4th generation Intel core i7 or equal for use by the Engineers by January 1st, 2017. The tablets shall come with protective cases, type cover, office 365, OneNote, latest acrobat reader multi-position kick stand, power supply adapters and shall have the shall have data package.

Cigarette lighter charger/adapters, AC recharging units in the form of cords, largest Lithium-Ion battery available, separate carry case or protector (unless flip-top model), belt carry

attachment, hand free receivers, meeting all requirement of State laws and designed for the approved model, shall be provide for Department. The Contractor shall furnish SIM cards, memory card, mobile web access, field e-mail access for data/photo transfer for each unit, one adaptor for memory card for connecting computer, all necessary cables, original CD with PC compatible software for the programming of numbers, name changes and other programmable functions and device necessary for the copying of SIM cards.

Following the award of the Contract the Contractor shall provide catalog cuts of the proposed unit(s). The Engineer shall agree with the Contractor on two proposed sample units for a one week trial. When a unit is found acceptable the Engineer shall notify the Contractor so the delivery of the new units will meet a delivery date. If a sample unit is found acceptable the Engineer shall notify the Contractor so the delivery of the new units will meet the specified dates.

All units and the list of assigned call numbers shall be furnished to the Engineer by January 1, 2017. The units shall be new and the models shall be approved by the Engineer prior to purchase or lease by the Contractor.

The system shall have transmit and receive coverage throughout the complete geographic area of Cook County. The system shall have a central base established at the Contractor's 24 hour dispatch center or other location as approved by the Engineer. The system shall be operated such that all field response calls, both dispatch and response, are handled in an "all-call" mode which includes all in-service field response units, Contractor's supervisory units, County units, and the Contractors dispatch center. No extra compensation shall be granted to the Contractor for revisions required by the Engineer to provide complete coverage as specified.

Separate work groups such as knockdown re-set crews, which do not have regular field response responsibilities, may be separated from the "all-call" communications, but such work groups shall have wireless communications which County units can monitor, and County units shall also be capable of communicating with these units. When such groups communicate on a response incident, such communications shall be on the "all-call" group.

The system shall include digital one-to-one communications capabilities for the dispatch center, all of the Contractor's units and the County units. The system shall also incorporate various separate talk groups for special functions, as approved by the Engineer. County units shall basically mirror the Contractor's supervisory units relative to type and functionality.

The Contractor shall program and maintain up to eight (8) communication units as designated by the Engineer. The communication units shall be operated on the same frequency as the Contractor's maintenance vehicles. The Contractor is to furnish and maintain up to eight (8) communication units with built in cellular phone functions, two (2.0) megapixel camera, engineer approved method of photo transmission, for each unit, as well as email service as agreed by the Engineer for use by County Personnel.

The Contractor shall have the following telephone and data communication lines installed and fully operable with a list of assigned call numbers to be furnished to the Engineer by January 1, 2017.



- One (1) telephone line at the Dispatch Center for dial-up access to the Pump Station.
- Two (2) telephone lines to monitor Econolite and Eagle traffic signal systems.

The Contractor shall keep a list of all contract required telephone lines, their outlet locations, and applicable telephone numbers. The Contractor is responsible under routine maintenance for installation charges, monthly billing, number change charges, and any other related telephone installation charges.

The contractor shall implement and use a live web based program to document arrival and departure time of the routine patrol schedule. The patrolmen shall input arrival and departure time on a 10 inch minimum screen size tablet. This program shall also be able to be viewed by the engineer from the office. This program shall be able to generate the data to a spread sheet. Data for this field can only be entered when the patrolman is located within 200 feet of the location. The complete patrol schedule shall be accessible to all patrolmen and the County. The patrol shall be listed by patrol area and by the bi-monthly (twice a month) patrol. This report shall be furnished to the County by email on the first day of the month.

The program shall list:

- Location
- Location Identification Number
- GPS Coordinates (Longitude and Latitude) with an accuracy of 3 feet.
- Field notes
- List of duties to be performed at the location

The patrol location shall be shown on a map and the color of the location icon (pin) shall indicate the status of that location (Green-complete, yellow-work needs to be done, red -work not done on time, blue-off maintenance). The pin shall automatically change colors depending on the status of the location.

Each time the location is patrolled, the following will be checked and enter on the electronic form before departing the location.

- Arrival and departure time
- Controller operation and timing
- Signal outage
- Vehicle detectors
- Signal head focusing
- Leaning posts
- Handholes
- System operation if applicable
- UPS operation if applicable
- EVP operation if applicable
- Illuminated street name sign if applicable

- Pedestrian operation if applicable
- Railroad pre-emption if applicable
- Lighting system if applicable
- Flashing beacon

On the first patrol of the year the patrol man shall enter the GPS position (longitude and latitude) at controller cabinet in the web based data sheet. The web based program shall be used along with the radio call-in procedure and shall follow this procedure until the operability of the web based program is acceptable.

J. CONTRACT FACILITY REQUIREMENTS

J.1 GENERAL REQUIREMENTS

At the time of bidding the Contractor shall have an established business presence in the County to assure the timeliness of the assumption of the contract work on the first day of the Contract.

The Contractor shall have and maintain adequate facilities at all times for the timely completion of work under this contract. These facilities shall include an EMIM office, 24-hour Dispatch Center and other permanent facilities, which may be strategically located, geographically, to support the Contractor's work force.

All Contractor's facilities shall be complete and ready for operation and inspection by the Engineer no later than December 23, 2016.

J.2 DISPATCH CENTER

Unless another location is approved by the Engineer, the Contractor shall maintain a staffed 24-hour dispatch at his headquarters, which may be used for other Contractor dispatch, but shall be adequately equipped and staffed to service this Contract on a first-priority basis. This dispatch center to be equipped with air conditioning, air cleaner, emergency lighting, fire and smoke detectors and an on-line (true) UPS system is required to provide clean power and backup electrical power for all dispatch electronic equipment capable of eight (8) hours of operation. A telephone answering service handling any calls other than the type of calls as required under this contract shall be deemed not acceptable under this contract. Call forwarding to other than the staffed 24 hour dispatch center at his base of operations is not allowed. A listing of two-way radio call numbers, cellular telephone numbers and pager telephone numbers shall be prepared and furnished to the Engineer two (2) weeks prior to the beginning of the Contract.

**J.3 STORAGE/TEST FACILITY**

The Contractor shall maintain adequate storage facilities and/or shops with at least three (3) shops and/or storage facilities with minimum of 1000 square feet strategically located in the region as follows:

1. In Cook County North of Devon Avenue and East of Meacham Road,
2. In Cook County South of 131<sup>st</sup> Street.
3. Contractor's Main location.

The locations of which shall meet the approval of the Engineer, in connection with the performance of the Contract. The Engineer shall have the privilege of visiting such storage facilities and shops at any time. All Contractor's facilities shall be complete and ready for operation no later than December 23, 2016, ready for a demonstration inspection by the Engineer.

Each shop/storage facility shall be in a permanent building, provided with an office containing adequate heat, artificial lights, sanitary facilities, hot and cold potable water and air conditioning. The sanitary facilities shall be inside the shop storage facility and shall be maintained clean and in good working condition and stocked with lavatory and sanitary supplies at all times during the Contract. Portable office trailers and sanitary facilities are not acceptable. The office facilities shall not be shared with any other contractor. There shall be a desk with a chair, a meeting table with chairs for six (6) people, telephone and plain paper all-in-one machine each with its own telephone line for use by the Contractor and the Engineer and his representatives. The County shall be furnished with keys to the shop/storage facility for use of the office if Contractor personnel are not present. The Contractor shall provide, at his main location a separate fenced in and locked area, with a minimum size of 50' x 75' for the exclusive use and storage of County equipment.

The Contractor shall comply with the instructions given by the Engineer relating to the care, storage, and marking of County Stock Inventory for identification purposes. All County Stock Inventory is to be kept in defined, separated areas from the Contractors owned stock of materials, parts, and equipment. The Engineer may require inside, protected storage of specified equipment.

All equipment, materials, miscellaneous items and component parts are to be furnished by the Contractor at his expense, unless otherwise specified by the Engineer, and shall be of the best grade of their respective kinds for the purpose. Replacements made to the Department's inventory by the Contractor shall be equal in quality or better in all respects than the original items. The Engineer shall decide the questions of equality. Whenever required by the specifications, or when called for by the Engineer, the Contractor shall furnish the Engineer for approval full information concerning the materials or articles which he contemplates incorporating in the work.

The Contractor shall maintain, equip and staff a facility for the testing, repairing and overhauling

of all traffic signal control equipment to be maintained under this Contract

The Contractor shall supply and deliver to the County, in January, one (1) black for both of HP color LaserJet 3800 and CP3505n printer, cartridges for any other printer(s) the County shall add during the course of the Contract one (1) Seagate portable External Hard Drive 250GB, one(1) USB 2GB Mini Flash Drives, one case of laser/ injet printer paper for use with the printers which is in addition to the paper supplied for the multipurpose machine specified below, one(1) rolls (250 labels per roll ) of # CL-317-969-BK Matte Metallized Permanent Polyester Labels with Border, one (1) ink tape for Brady XCPLUS printer and one(1) ink tapes for a Brady I. D. Pro Plus portable printer.

Before the award of the Contract, the Engineer shall have the right to inspect the facilities as designated herein for the purpose of determining the ability of the low bidder to perform the services as required under this Contract.

K. CONTRACT TRANSITION

K.1 GENRERAL REQUIREMENTS:

It is the obligation of the Contractor to make every effort to facilitate a smooth transition from the prior Contract to this Contract. This may involve adjustments in ongoing operations to adjust to revised contract provisions or it may involve a start-up of operations and the assumption of maintenance responsibility if there is a change in Contractor. In either case, full professional cooperation by the Contractor is expected by the Department to assure that the Department's electrical systems remain continuously monitored and maintained. Furthermore, this obligation extends to the transition from this Contract to any subsequent contract. These responsibilities will be among the factors contributing to the Contractor's overall evaluation.

The Contractor shall assure the Department that at 12:01 a.m. on January 1, 2017 the maintenance transfer is complete and transparent to the public, that CCDOTH's electrical systems remain continuously monitored and maintained. It shall be recognized that the transfer and transition from one contract to the next will not be instantaneous with regard to all aspects of all systems. The Contractor shall cooperate fully to facilitate this transition period work including prompt communications, transfer of all County owned materials and documents, cooperation on access to all electrical system equipment, and the timely completion of authorized work.

The Contractor remains obligated for completion of all outstanding routine work and all authorized non-routine work. All applicable contract requirements shall remain in force for this work, unless otherwise directed by the Engineer.

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

K.2 LOCKS AND KEYS TRANSITION

The Contractor will be provided keys to system equipment including alarm keys and keys to traffic signal cabinets, railroad cabinets, lighting cabinets, high mast towers, pump station gates, doors and hatches, navigation equipment by the outgoing Contractor by December 31, 2016. The Contractor shall assure that at 12:01 AM on January 1, 2017, the maintenance transfer is complete and transparent to the public.

Padlocks for all pumping station doors, hatches, and gates shall be replaced by Jan. 31, 2017. All locks shall be keyed alike. The Contractor shall submit a catalog cut of the proposed locks as soon as possible after award of the Contract. Whenever it is necessary to change, replace or add new locks, the Contractor shall assume the cost of such new locks and keys. All existing, replacement and/or new locks added to the system are/shall become the property of the Department.

### K.3 AEGIS ALARM SYSTEM TRANSITION

At 12:01 AM on January 1, 2017, the Contractor shall accept the transfer of the existing Pump Station AEGIS telephone line from the outgoing contractor. The Contractor shall assure that all units are functioning for emergency call-out to the receivers and shall supply and program PROM chips as required for each alarm transmitter unit, or arrange for transfer of the alarm notification telephone number, as necessary, to assure a functioning alarm system. By January 31, 2017 the Contractor shall have all pump station AEGIS prompts programmed to the Contractor's AEGIS phone number. At the end of the Contract term(s) the call forwarding of the AEGIS telephone number shall only be terminated upon notification of the Engineer. The Contractor is responsible under routine maintenance for installation, monthly billings, phone number change and any other related telephone charges for the AEGIS phone line(s). Pump Station 106 alarms are transmitted by radio by ADS. The Contractor shall be responsible for all cost associated with the radio system.

### K.4 MAINTENANCE FACILITIES ALARM SYSTEMS TRANSITION

At 12:01 AM on January 1, 2017, the Contractor shall accept the transfer of the existing Maintenance Facility Alarm Systems monitoring from the outgoing contractor. The Contractor shall assure that all District fire and burglar alarms are functioning for emergency call-out and arrange for transfer of the alarm monitoring, as necessary, to assure a functioning alarm system. By January 31, 2017, the Contractor shall have all alarm system programmed for monitoring. The Contractor is responsible under routine maintenance for installation, monthly billings, phone number change and any other related telephone charges for the dedicated alarm phone line(s).

### K.5 END OF CONTRACT TRANSITION

The Contractor shall deliver all County Stock Inventory on or before December 31, 2017 (or at the termination of this Contract), to the incoming contractor or the Department at locations designated by the Engineer. All items shall be accounted for from the latest Stock Inventory

Report. The Contractor shall replace missing stock in kind (due to loss, theft, burglary, Contractor caused damage or use).

The Contractor shall cooperate with any new contractor during the transition to the next contract at the termination of this Contract. If necessary, locks and keys shall be transferred to a new contractor during December 2017 (or at the termination of this Contract) or at a date to be determined by the Engineer. The AEGIS telephone numbers shall not be terminated until Authorized by the Engineer.

During December 2017(or at the termination of this Contract), the Contractor shall furnish to the County all uncompleted items and work orders from all contract years specified herein with date and plan for completion.

L. REGULAR WORK

Regular work shall be performed by the Contractor as authorized under section 10 of this article when directed by the Engineer.

5. DAMAGED PARTS. MATERIALS AND EQUIPMENT

Unless specifically noted herein as a non-routine item, the Contractor is responsible under routine maintenance, for the replacement with new or repaired parts or equipment, for all County maintained system equipment found damaged or malfunctioning for any reason, including vehicular caused damage, third party damage, vandalism, natural causes, or incidental damages on or affecting system equipment as caused by the failure or the fault of utility company equipment.

The Contractor is required to provide immediate corrective action and provide immediate temporary repairs to all systems, unless otherwise directed by the Engineer, regardless of the type of damage, or who caused the damage. Refer to Article III for each type of system herein for specific time requirements.

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

All shoulder, or lane closures required for the response and repair of damaged system equipment is routine maintenance work and shall be in conformance with existing Departmental standards governing lane closures.

The Engineer shall have the sole determination as to whether material (equipment) is re-usable as system equipment. Except as otherwise indicated herein, all removed items remain property of the County.

The Contractor may not dispose (scrap) any materials without receiving prior approval from the Engineer in writing. If the materials are determined to be scrapped, the Engineer shall convey ownership of the scrap materials to the Contractor. Upon receiving the transfer of ownership, the Contractor shall be responsible, at his expense, for the proper, legal disposal of all scrap items; materials, parts, equipment, etc. The estimated salvage value of scrap materials shall be reflected in the bid unit prices for routine maintenance items.

All lamps removed as part of re-lamping operation, outage repairs or other authorized work on any type of System shall become property of the Contractor and shall be disposed of in full compliance with Environmental Protection Agency (EPA) regulations. The EPA Rule 40 CFR, part 273, established a guideline for the recycling of lamps and the mercury from scrapped lamps. Fluorescent, high-intensity, low pressure sodium, and other lamps bearing mercury may be classified as a potential hazardous waste.

The Contractor shall recycle removed lamps to the maximum extent possible and shall submit to the Engineer, for approval, the name and background of a qualified lamp recycling specialty service which shall be used for lamp recycling under this Contract. Over the course of the Contract, the Contractor shall provide documentation of all lamp recycling activity to the satisfaction of the Engineer.

## **6. REIMBURSEMENT FROM THIRD PARTY FOR REPAIR OF DAMAGES**

The County reserves the right to make recovery from third party or parties for damage to any part of the installations or systems and no part of such recovery or recoveries shall inure to the benefit of the Contractor. Contractor shall make all repairs under ROUTINE MAINTENACE and at no additional cost to the County. As an exception, this provision shall not apply to damage to underground conduit, handhole, pull point, or cable inflicted by a third party.

To enable the County to assess damages against said third part or parties, the Contractor shall furnish the Engineer, an itemized statement of the cost of repairs, separating the cost of labor, materials, and equipment. In all cases the Contractor shall submit a Damage Report indicating damage done to all County-owned equipment.

Upon arrival at the location of the motorist caused property damage the dispatched Patrolman or other Contractor personnel shall take a minimum of 3 digital photos of the overall damage; one for the damage with the street area showing, and two of the damaged equipment but zoomed photos must show the damage. (As an example do not take a photo of only the light pole decal.) Clear, concise photos are required regardless of the hour of day or night, so the camera or camera phone used by the Contractor personnel shall be of good quality; a minimum of 8 megapixel, have excellent flash capability, and have email capability to send jpg photos of approximately 15KB to 30KB each to the Engineer. In addition, the Patrolman shall use a spotlight of 1,000,000 foot candle power during the night hours to illuminate the area for the photos. The Patrolman should check the photos for their clarity before leaving the site of the damage. Photos which do not show the damaged equipment due to an unlighted area shall be considered Unsatisfactory Service. The Engineer will approve the format, specific size, and conveyance of the photos when the Contractor's camera phone is selected.

The Contractor shall assign one person to have the responsibility to coordinate the photo receipt from the Patrolmen or other Contractor personnel to the Contractor files. This individual shall be responsible to assure that the photos are in compliance to contract requirements, compile all knock down ticket photos by the month, and label with the correct ticket number. The digital photos shall be retained by the Contractor for a minimum of one year since the process for matching police accident reports to the Tickets can be a lengthy process. When requested by the Engineer, the Contractor may need to re-email photos from past months Tickets due to insurance company requests or other claims.

An Unsatisfactory Service (and liquidated damages assessed after the first warning) will be issued if a photo is not available for a motorist caused damage ticket, when requested by the Engineer. A flash drive with the monthly photos, each file labeled with the ticket number, shall be given to the Engineer with the monthly routine work submittal.

Nothing herein shall be construed as relieving the Contractor of his obligation to take immediate corrective action and make emergency temporary repairs to any part of the installation or systems including underground conduit and cable as required under Scope of Work. The relationship of the third party to the County shall not relieve the Contractor of this obligation.

The Contractor is allowed to invoice the offending third party for clearing the site for safety and providing immediate corrective action and temporary repairs to system equipment. The Contractor may complete the permanent repairs if the offending 3<sup>rd</sup> party agrees in writing or the offending 3<sup>rd</sup> party does not respond to certified letters sent by the Contractor (see below procedures). It is the Contractors responsibility to locate the offending party.

The Contractor shall assign the duties of corresponding with 3<sup>rd</sup> Parties to one individual and this individual shall be the sole point of contact for all 3<sup>rd</sup> Party billing documentation.

### **3rd Party Damage Repair Documentation**

Upon finding 3<sup>rd</sup> party damage to state property (not caused by Department personnel), the first Contractor patrolman responding to the scene shall obtain the following information for the Ticket:

- A date stamped, digital photo of the damage
- The name of the contractor at the scene, address, contract, or permit number and contact name and phone numbers

The Contractor assigned individual shall immediately initiate communications, by certified mail to the offending 3<sup>rd</sup> party/contractor (and email copies to the County Engineer, Construction Resident Engineer or Permit Engineer). Attached shall be copies of photos showing the extent of the damage to state property, a full explanation of the damage, and an estimate of temporary repairs which will be completed by the Contractor. The letter will also state that an estimate of the cost of permanent repairs will follow, but that it will be the offending parties' choice as to whether the Maintenance Contractor or a contractor selected by the offending party will complete the permanent repairs, to the standards of the County and within the next thirty (30) days. The



Contractor shall ask for a written response from the offending party within ten (10) days as to the choice of contractor for the permanent repairs.

Upon completion of the temporary repairs, and ten (10) days after the date of the 3<sup>rd</sup> party damage, the Contractor shall send a 2<sup>nd</sup> letter by certified mail to the offending 3<sup>rd</sup> party with the invoice for the temporary repairs and the cost estimate for the permanent repairs (with email copies to the Construction Resident Engineer or Permit Engineer). The Contractor shall state that if the permanent repairs are not completed within thirty days from the date of the 2<sup>nd</sup> letter that the Maintenance Contractor will complete the permanent repairs and the offending party shall be billed.

If there is a timely response from the offending party the Contractor shall email the response to the Construction Resident Engineer or Permit Engineer. The Contractor shall work with offending party as to the resolution of the permanent repairs. It is the Contractor's responsibility to assure that the 3<sup>rd</sup> party contractor adheres by the Electrical Maintenance Contract requirements specified herein. The Contractor shall inspect the equipment and its operation prior to final acceptance.

If thirty days have passed and there is no response from the offending party the Contractor shall email the Engineer the complete packet of information regarding the 3<sup>rd</sup> party damage and Contractor work to date, including the date of the scheduled permanent repairs and their estimated cost. The Engineer will confirm if the Contractor should complete the permanent repairs.

After receiving Engineer approval and the Contractor has completed the permanent repairs the 3<sup>rd</sup> certified letter shall be sent to the offending party with the invoice and entire amount due the Contractor (with email copies to the Construction Resident Engineer or Permit Engineer). All invoices shall provide a brief description of the cause of the damage and the repairs made, identifying the location by the location number, route, county, city or village, and any applicable Ticket numbers.

## **7. MAINTENANCE SCHEDULES**

This section supplements Section 108 of the Standard Specifications.

- A. The Engineer may present MAINTENANCE SCHEDULES to the Contractor, or may require the Contractor to present proposed schedules to him. Where schedules are required, the Contractor shall submit schedules a minimum of two (2) weeks before work begins.
- B. Except as provided below, the Contractor shall complete all work items contained in MAINTENANCE SCHEDULES within the periods specified. Failure to complete the work items as specified is sufficient cause for the Department to collect liquidated damages as defined in Article II, Item 15.
- C. The Contractor may request a change of the dates of MAINTENANCE SCHEDULES by submitting proposed changes in writing to the Engineer at least five (5) working days prior to the scheduled starting date of any item(s). Any such changes will become effective only upon the written approval of the Engineer.

- D. The Contractor shall submit a "Maintenance Schedule Completion Report" on a form provided by the Engineer within two (2) working days after completion of each work item contained in the MAINTENANCE SCHEDULES.

Each form must be certified, notarized, and signed by the Contractor attesting to 1) completion in workmanlike manner, and (2) completion date of said work item.

**8. ROUTINE MAINTENANCE**

Routine Maintenance shall consist of the following, except as modified under individual items hereinafter.

- A. Patrol and inspect each installation and system once every two (2) weeks or more often if so directed by the Engineer. The Contractor's personnel shall give a radio call upon arrival at any location and give a radio call upon leaving any location listed on the Contractor's maintenance schedule.

The Dispatch Center is required to keep a Patrol Route Maintenance Log which includes the arrival and departure times and the time and reason for patrolman departure from approved route inspection location and name of municipality or agency requesting the emergency service (Example: Accident with damage and traffic signal full outage - Schaumburg requesting the Emergency Service). All Patrol records shall be maintained and submitted to the Engineer weekly.

- A web based program shall be used along with the radio call-in procedure and shall follow this procedure until the operability of the web based program is acceptable.
- B. Prior to the beginning of each contract year, the Contractor shall submit for Engineer approval, a listing of daily patrol routes and schedules for all work requiring patrols, including the names and call numbers (applicable communication unit numbers) of patrolmen assigned to those routes.

The Contractor shall strictly adhere to the approved routes and schedules. The patrolling of a new location accepted for maintenance shall be instituted immediately. The Contractor shall immediately notify the Engineer, by e-mail, of any changes in daily routes and schedules.

- C. Test each system as detailed under the specific items.
- D. Replace all burned out lamps and LED modules with new lamps or LED modules. All replacement lamps and LED modules shall be new and shall be of the same wattage and type as the lamps or LED modules replaced, and of equal or better quality. LED modules shall be of the same manufacturer as the module being replaced.
- E. Keep all of the various parts and components of the installations in proper alignment and adjustment at all times.
- F. Clean the various parts and components of the installations as detailed under the specific items.

- G. Take immediate corrective action to safeguard the public and the installations **AT ANY TIME, DAY OR NIGHT, WHEN ANY SYSTEM OR ANY PORTION THEREOF BECOMES INOPERATIVE, OR ANY UNIT OF THE SYSTEM HAS BEEN DAMAGED** from any cause whatsoever.
- H. Keep all traffic signal and pedestrian indication/display clear of snow, ice, dirt, debris or other conditions that obstructs visibility of any signal indication/display.
- I. Report to the Engineer, by the fastest means of communication (a) any unauthorized work being performed by others affecting the system, (b) any other work in progress which may come to his attention and which may endanger any installation of the system, and (c) any emergency temporary repairs.
- J. Make emergency temporary repairs and permanent repairs to the installations. Unless specifically authorized by the Engineer, permanent repairs shall be started not later than the first working day following emergency temporary repairs and shall be continued insofar as possible without interruption, until completion.
- K. Respond to all emergency calls by the Engineer, and all calls by the Engineer to supervise additional installations by others or to locate underground cables or any other components of the systems to prevent damage by any proposed construction. The Contractor is responsible to locate all items covered in this Contact at no charge to the County. The Contractor shall review all the incoming locate tickets, evaluate all the tickets and take action within 24 hours to respond to the request for items that are maintained by CCDOTH. To prevent damage and facilitate work by others, the Contractor shall promptly respond to calls requesting a locate of County owned electrical Systems at all locations. The Contractor is required to perform a locate of County owned underground cables or any other components, ONE TIME for each system location, per project or contract, as requested by the General Contractor of the construction project, before or after the transfer of maintenance responsibilities. Each request may involve multiple locations where separated electrical systems are involved. Markings shall be given with a horizontal tolerance of one foot to either side.  
  
The Contractor is required to keep a log of all cable locate requests, and submit them to the Engineer as requested. This refers to County, IDOT and permit construction of all types of systems. The Contractor is responsible for multiple locates for utilities and other agencies.
- L. Keep records of repairs and services to all serial-numbered pieces of equipment and make them available to the Engineer upon request. Keep records in the field books of all routine and preventive maintenance operation at the option of the Engineer.
- M. Upon request by the Engineer, the Contractor is required to provide system access for other contractors and consultants who have approved contracts to work on County equipment, to utility workers to read meters or do emergency repair, or for other special situations. Also, emergency or urgent situations occur which require the Contractor to

provide personnel to conduct an immediate system or component inspection, travel to a designated location/installation to determine ownership, or travel to the site of a hazmat spill to oversee proper pump station operations. When requested by the Engineer, the Contractor is required to provide personnel labor, transportation and equipment to assist CCDOTH inspectors in their inspection of any portion of a system(s). In addition to the requirements of Article 105.08 of the Standard Specifications, the Contractor shall, under Routine Maintenance, perform various other coordination and assistance activities.

N. Upon discover of corrosion on posts and mast arm assemblies and poles, the Corrosion shall be coated with a bright color spray on Zing coating

O. Keep incoming power service in proper condition at all times. The Contractor shall cooperate with the utility company in this matter. Maintain interconnection lines owned by the County. The Contractor shall cooperate with any utility company leasing interconnection lines to the County and perform such work at line terminals as may be required.

The Contractor shall:

1. Keep incoming power service in proper condition at all times. The Engineer shall be promptly notified for cases such as the planned disruption of service power to system equipment.
2. Monitor the condition of electric service wiring and equipment for all systems, telephone service wiring and equipment (at pumping stations and traffic signal systems only), radio alarm equipment, water service piping and appurtenances (at pumping stations only), for all systems and facilities maintained under this contract. The Contractor shall maintain contacts with the respective utilities or providers for these services and shall coordinate with the utility and the Department to assure that services are installed in a timely manner, in compliance with requirements established for the service. Should any service require disruption due to repair or other work, the Engineer shall be promptly notified.
3. Fully coordinate access as required for inspection, modification work as applicable, repair work as necessary and other matters as necessary to assure continuity of services and proper revisions when needed. When new services are requested, the Department will generally initiate the request with the utility/provider and the Department will be responsible for utility service charges.
4. The Engineer may require the Contractor to inspect related non-system equipment, such as ComEd power lines, that may interfere with the functioning and/or maintenance of systems as covered in the contract.
5. Coordinate his work on this Contract to work with the utility company work. The fact that the Department separately arranges associated special work shall not be acceptable grounds for the Contractor's failure to coordinate the completion of other work. Such an example would be construction by a construction contractor and the necessary inspection of the required electrical ducts by the Contractor.

6. The Contractor shall assist the Engineer with the inspection of any work completed by others. Any unscheduled maintenance work performed, or necessary to be performed, to any electrical system, as found on patrol, shall be immediately documented via radio to the Dispatch Center for entry as a Ticket.
- P. Under Routine Maintenance the Engineer may require the Contractor to provide additional special patrols, inspections, and tests to confirm proper system equipment operation and/or collect information to define the nature of repetitious or intermittent system malfunctions. Also, the Engineer may require the Contractor to inspect related non-system equipment such as the proximity of ComEd power lines that may interfere with the functioning and/or maintenance of systems as covered in the contract.
- Q. The Contractor shall cooperate with the Engineer and construction contractors with respect to transfers of maintenance on system elements, temporary traffic signal turn-ons and inspection of completed construction work for Department acceptance. The Contractor shall assist the Engineer and/or County Inspectors (prior to or at the transfer meeting) to make field equipment inspections of installations to be added or removed from routine maintenance to ascertain that the equipment and/or workmanship is in proper working order and verify equipment inventory quantities. It shall be the responsibility of the Contractor to furnish the Engineer with a written record of the total quantities of equipment by type or model, wattage, power center locations and other information as applicable for each location to be transferred on or off routine maintenance of the Contract. This information shall be e-mail to the Engineer within 24 hours of the maintenance transfer meeting. The Contractor shall attend the official joint transfer site meetings and shall fill out and sign any required Maintenance Transfer Forms or Equipment Inventory Forms. The Contractor shall provide the Engineer, a minimum of 24-hours in advance of the Maintenance Transfer Meeting, the names of the Contract personnel who shall be attending the meeting. The Engineer may request the Contractor provide new locks for system equipment at the maintenance transfer meeting.
1. Transfer of Location to the County - In examining construction work for acceptance by the Department, the Contractor shall advise the Engineer with respect to the completeness, workmanship, safety and maintainability of the installation, and the Engineer will make the final determination regarding acceptance. The Contractor is required to assume maintenance responsibility for system work accepted by the Engineer.
  2. Transfer of Location from the County - Following the site meeting, if a corrective work list has been developed, the Contractor shall be required to correct any outstanding deficiencies through routine maintenance or unless otherwise permitted by the Engineer.
  3. Transfer Documentation - Upon acceptance of routine maintenance responsibilities or transfer of maintenance responsibilities to another entity, the Contractor representative shall immediately radio the Dispatch Center to update any changes in maintenance responsibility for system locations. The Dispatch Center shall send an email confirmation of the change to the Engineer. If the

Contractor determines that the equipment is not working properly, the Contractor shall immediately notify the Engineer.

- R. All interconnecting cable, conduit and handholes between various parts of the system shall be maintained by the Contractor.
- S. Repair or replace any part or parts of the systems damaged from any cause whatsoever, except extensive damage resulting from major disasters such as fires, floods, acts of public enemy or an Act of God\*. \*Act of God is as defined in Article 108.08 of the Standard Specifications.
- T. All closed loop traffic signal systems and centerized traffic signal systems shall be monitored on a daily basis from the traffic signal equipment repair shop, unless another location is approved by the Engineer.
- U. Red-Light Running Camera Survey and Coordination: While performing patrol duties, for the duration of the Contract, the Contractor shall make note of any red-light running camera locations and agency responsible for their installation (known) and report the installations or removals to the County.
- V. When bagging signal heads is required, light tan colored traffic and pedestrian signal reusable covers shall be used to cover dark/un-energized signal sections and visors. Covers shall be made of outdoor fabric with urethane coating for repelling water, have elastic fully sewn around the cover ends for a tight fit over the visor, and have a minimum of two straps with buckles to secure the cover to the backplate. A center mesh strip allowing viewing without removal for signal status testing purposes shall be part of the cover. Covers shall include a message indicating the signal is not in service.

## 9. REPORTS AND FORMS

The following reports, in addition to other reports or forms, listed under the Scope of Work or elsewhere in the Contract shall be submitted when required.

- A. Unsatisfactory Service Report - Failure to perform all functions in the manner specified herein or in Standard Specification and within any time limit specified may seriously jeopardize the welfare of the general motoring public. Should the Contractor refuse or fail to perform the work or any separable part thereof promptly and in the manner specified in this Contract with such diligence as will insure its satisfactory completion, the Engineer will advise the Contractor in writing via a formal letter or email of an Unsatisfactory Service Report of the nature of unsatisfactory service. The Contractor shall respond back to the Engineer within five (5) working days from the time of receipt of the notice, explaining the reasons for the improper service and the remedial action being taken to resolve the problem.

If the situation warrant, the Engineer may take additional remedial action such as to

assess liquidated damages, withhold payment of routine maintenance monies due the Contractor, suspend work, or de-authorize non-routine work.

- A.1 Suspension of Work - If in the opinion of the Engineer any maintenance work performed on this Contract does not comply with the requirements of the Contract and/or as described in the Standard Specifications, the Engineer has the authority to order the immediate suspension of the work task. Depending on the offense, liquidated damages may also be assessed and/or withholding of funds due to the Contractor.

The Contractor shall receive notice, via the Unsatisfactory Service Report, e-mail or formal letter, explaining the non-compliance or omission of work. The Contractor shall respond back to the Engineer within twenty four (24) hours from the time of receipt of the notice, explaining the reasons for the improper service and the remedial action being taken to resolve the problem. The Contractor shall receive written approval from the Engineer before the Contractor can resume the specified work task.

- A.2 De-Authorization of Work - If after two (2) written warnings, via a formal letter, email or Unsatisfactory Service Report, a work item is not in Contract compliance, or work has not been completed per the agreed time frame, the Engineer may permanently suspend the Contractor's right to perform the requested task, per Article 108.07 of the Standard Specifications for Road and Bridge Construction, and will authorize the work to be performed by an outside contractor, by contract or otherwise, with the cost of that work deducted from the Contractor's monthly payment for routine maintenance.

It will be the Engineer's option to require the Contractor pay another contractor, as approved by the Engineer, for all corrective work in accordance with Article 109.05, with the Contractor's mark up deducted as liquidated damages. Failure to pay for the work within an allocated time limit shall require additional liquidated damage deductions from each subsequent monthly routine maintenance invoice until paid.

- B. Condition Report - The Contractor shall submit to the engineer, when requested, a Condition Report showing the history of any item in the installation or system. This report shall contain the following information or such other information as required by the Engineer:

1. The general condition of the item, including the results of tests.
2. The record of any breakdown and of remedial action taken.
3. The Contractor's recommendation for corrective measures necessary to insure the proper performance of the item.

- C. Inspection Report - The Contractor shall continuously be on the watch for system elements that are malfunctioning or in need of replacement. Malfunctioning equipment shall be repaired or replaced as part of routine maintenance. If the Contractor identifies system elements, which, due to age or normal wear and tear have become prone to recurring or imminent failure or which otherwise pose a significant liability or a safety risk, the Contractor may recommend replacement or repair by e-mail an

Inspection Report to the Engineer.

The Engineer reserves the right to determine a course of action for any identified condition. When the Engineer concurs with the Contractor's basic recommendations, a non-routine authorization will be issued for the material portion of the repair and this will reduce the Contractor's routine maintenance obligation to the labor necessary to replace the deteriorated system element.

If components fail, in the absence of an Inspection Report received, or if an Inspection Report had been submitted by the Contractor but the item was not acknowledged by the Engineer as prone to recurring or imminent failure or a safety risk, then the Contractor is obligated for the full cost of replacement or repair under routine maintenance. Such obligation is not limited only to individual components but may extend to the multiples of components at a location(s).

If system elements fail or are observed by the Engineer to be causing recurring failures or imminent safety hazards, and the Engineer has determined that the deteriorated condition is due to neglectful maintenance on the part of this Contractor, all remedial work shall be performed as routine maintenance.

- D. Report Submittals – All reports required under this Contract, shall be submitted or returned to the Engineer within ten (10) working days after being requested, unless otherwise specified.
- E. Telephone Report - Whenever defective, non-operative, or damaged equipment is reported to the Contractor by telephone or radio, a sequentially numbered report shall be initiated. Copies of said reports shall be provided to the Engineer weekly.

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

- name of informant and call back number
- time of departure
- time of arrival at scene
- problem found( including unit number of effected equipment)
- time incident is cleared
- description of work completed at scene
- follow-up work necessary
- police accident information, if known
- clearing information



- notify proper maintainer of equipment malfunction or problem
  - call received
  - call dispatched
- F. Work Order - Whenever a copy of a Report is required as provided above, copies of the Work Orders issued to correct the defect shall be provided to the Engineer weekly after completion of the work. The copy of the Work Order shall show the defects found, and the action taken to correct the defects, and in addition, shall show the Report number associated therewith. The form of the copy of the Work Order shall be as required by the Engineer.
- G. Corrective Action Report - When damage or outages are reported to the Contractor by telephone from the Department, a report of completion of Immediate Corrective Action shall be telephoned to the Engineer immediately upon completion.

**10. REGULAR WORK**

The Engineer may authorize the Contractor to perform Regular work and furnish the necessary materials and parts provided that the changes are not of such magnitude as to constitute a substantial or material variation in the original contract. However, the Department reserves the right to advertise for competitive bids to effect changes on any system. Authorization for Regular work shall be given by the Engineer in writing and when so authorized shall be performed by force account with a completion date. If the work is not finished by the completion date the installation where the work is being performed will be removed from the County's maintenance responsibility unless the Contractor requests in writing, with sufficient reason, for an extension of time and this time is granted by the County. If taken off of County Maintenance, the Contractor shall maintain the installation at no cost to CCDOTH until all work is finished and accepted by CCDOTH. Failure to complete the work items as specified is sufficient cause for the Department to collect liquidated damages as defined in Article II, Item 15. It will be the Engineer's option to require the Contractor pay another contractor, as approved by the Engineer, for all corrective work as defined in liquidated damages. Failure to pay for the work within an allocated time limit shall require additional liquidated damage deductions until paid. Regular work to repair damages to equipment of installations or systems caused by Department personnel in the performance of their assigned duties shall be paid for by the Department, CLAIMS FOR REGULAR WORK WHICH HAVE NOT BEEN AUTHORIZED BY THE ENGINEER SHALL BE REJECTED.

- A. The Department reserves the right to furnish any or all of the materials or parts for Regular work, in which case no charge for items so furnished shall be made by the Contractor. Materials or parts furnished by the Department may be from the "Department's Inventory of Parts and Materials" or from other stock maintained by the Department.
- B. When the Contractor is authorized to furnish both materials and labor, at the direction

of the Engineer, as an expediency, parts may be taken from the "Department's Inventory of Parts and Materials". The Contractor shall then replace the items used as previously provided in Article II. The invoices for all materials used to replace items taken from the inventory shall show the entire cost of each item including any freight charges. No freight charges, other than those shown on original bills, shall be allowed the Contractor for transportation of materials. A mark-up of fifteen (15) percent per Article 109.04(b)(3) of the Standard Specifications is allowed for material costs, which shall include any shipping and handling fees shown on the original bills.

- C. The Department is under no obligation to authorize any non-routine work. The Department shall authorize unit price work wherever possible, as meets the system needs, or unit price work in addition to agreed price or force account work for the same project/location, if in the best interest of the Department.
- D. Regular work will be paid for as either (1) the estimate submitted by the Contractor prior to the performance of work, or (2) the force account basis as calculated in accordance with the below paragraph.
- E. All Regular work will be paid for in the following manner:
  - E.1 Unit price (PAY ITEM) regular work shall consist of work which has been authorized based upon the Unit price (PAY ITEM) bid on this contract for the various regular work items.
  - E.2 Agreed-Price Authorizations: Agreed-price regular work shall consist of work for which bid price are not applicable. The Contractor shall submit an estimated quote for agreed price work with a note of "not to exceed price" prior to the beginning of a job, when quantities are estimated. If specifically requested by the Engineer, the Contractor shall submit a fixed, agreed price quote for the necessary work. The Contractor shall enter all agreed price regular work authorizations within five (5) working days of the Engineer request. One quote shall be necessary for each regular work authorization letter. The agreed price submitted to the Department should take into account the expected completion date of the work.
  - E.3 Force Account Authorizations: Force Account Work shall consist of work for which an agreed price cannot be established between the Engineer and the Contractor. The Engineer may direct the Contractor to perform any non-routine work as force account work which shall be measured and paid as described in Article 109.04(b) of the Standard Specifications. A daily time/work accounting, with the name of each individual, shall be kept on the daily general billing log, which shall be signed by the Contractor's field supervisor and submitted to the Engineer at the completion of each work day for the authorized work. A summary of all daily general billing logs, as well as proper documentation of materials used, shall be submitted to the Engineer within seven (7) working days following the completion of work. A general foreman's time will not be billable on force account work unless there are more than five

(5) additional crew workers employed at any one time, place and job and then only with the prior approval of the Engineer. A mark-up of fifteen (15) percent is allowed for material costs, which shall include any shipping and handling fees. The Contractor shall not be allowed overtime and/or prime time billing unless prior approval is received from the Engineer.

- E.4 In compliance with all of the requirements of Article 109.04 of the Standard Specifications.
- E.5 Subcontracting: For portions of Regular work performed by approved subcontractor, the Contractor shall submit to the Department in writing the name of the Subcontractor he intends to utilize prior to performance of said work. The Department retains the right to reject or approve said Subcontractor before the work is performed. The Contractor shall submit a true copy of the Subcontractor's invoice to which cost shall be added as specified in article 109.04 (b) (7) of the Standard Specifications.
- E.6 Expenses Incurred by the Department: In accordance with Article 109.05 of the Standard Specifications for Road and Bridge construction, as hereby modified, upon written request of the Engineer, the Contractor shall pay the bills for specialty service work and/or expenses incurred by the Department. The Contractor shall be paid administrative costs of an amount equal to five (5) percent of the first \$10,000, with a minimum of \$ 100.00, and the Department shall allow an additional one (1) percent of any amount over \$10,000 of the total approved costs, for an individual work authorization. This work shall be authorized on an EMIM estimated authorization letter.

## 11. PAINING

Painting of traffic signal installations, flashing beacons, and light standards, shall be done in accordance with Section 851 of the Standard Specifications, with the following modifications and except as modified under the individual items hereinafter.

- A. Cleaning the work shall consist of removing all rust and scaling paint.
- B. All bare spots shall be spot painted with Duro Brand "Extend" rust treatment.
- C. All bare spots shall then be spot painted with a rust preventive primer.
- D. All surfaces shall be given two coats of approved paint, color to be determined by the Engineer.
- E. The Contractor shall stencil the date of painting on the controller cabinet if it is painted, or on the controller foundation if the controller cabinet is unpainted.

**12. CONTRACTOR'S RESPONSIBILITY FOR MATERIAL AND EQUIPMENT OWNED BY THE DEPARTMENT**

- A. To facilitate prompt repairs, the Department has on hand a stock of parts, materials, and equipment to be used exclusively in the maintenance of the installations and systems. The Contractor shall use CCDOTH inventoried equipment only when directed by the Engineer in writing, by e-mail.
- B. The Contractor shall conduct an audit of the County Stock Inventory as of January 1, 2017, and create an initial County Stock Inventory Report, accounting for all parts, materials and equipment. After approval signature of the principal of the company and the Engineer, the Contractor shall have full responsibility for all County Stock Inventory on the January 1, 2017, County Stock Inventory Report, including the reporting of use, disbursements or receipts
- C. All county stock inventory shall be clearly identified and physically separated from the storage of Contractor-owned materials and equipment. County stock shall be kept screened or fenced, with locked access.
- D. The Contractor shall use County stock only when directed and approved by the Engineer. The Department is not obligated to furnish specific parts or equipment in the County stock inventory for Contractor to use. The Contractor may not use any County stock inventory for any work outside the scope of this contract.
- E. The Contractor, within a reasonable time after the use of any parts, materials, or equipment shall replace said parts, materials or equipment with items of equal or better quality and in quantities used. A reasonable time as used in this section shall be determined by the Engineer, based on facts submitted by the Contractor concerning availability of items used, delivery schedules, or his efforts to procure the items.
- F. The Engineer at his discretion may increase or decrease the quantities or kinds of parts, materials or equipment supplied by the Contractor.
- G. All parts, materials, and equipment furnished to the Contractor shall be transported by him at his sole expense, to his warehouse, shops, or sites, where such materials and equipment are to be stored, repaired, or used. Upon receipt of such parts, materials, and equipment, the Contractor shall acknowledge receipt thereof on forms and furnish to the Engineer.
- H. The parts, materials, and equipment furnished by the Department and stored by the Contractor at his facilities and at the County facility shall constitute the Department's Stock Inventory as used herein.
- I. The Contractor shall maintain a perpetual inventory of parts and equipment used in the maintenance of the installations and systems furnished him by the Department, and shall furnish the Engineer a copy of this inventory at the end of each month. The inventory shall include the type and location of any equipment installed as temporary replacements for equipment being repaired.

- J. The parts, materials, and equipment furnished by other contractors due to under construction projects and stored at the Contractor facilities. A receipt ticket shall be issued to the contractor and e-mail to the Engineer. The ticket shall include the location and type of any equipment, serial numbers, and model numbers. This shall be included in the monthly County Stock Inventory Report.
- K. The Engineer shall have the privilege of visiting storage facilities and shops at any time for the purpose of examining the inventory of County-owned parts and equipment. The Contractor shall comply with any instructions given by the Engineer relating to the care, storage and marking of County-owned parts and equipment for identification purposes.
- L. The Contractor shall keep an Engineer approved current database of all County Stock Inventory information, including stock totals, material reservations, receipts, and disbursements for each electrical system, and shall include information as to size, type, manufacturer, location (including all materials at the warehouse facility, shop facilities, etc.) and state of repair of all parts and equipment, as well as a record of where the prior months' stock was utilized, by staging area category of routine or non-routine maintenance, and Contract number if applicable.
- M. A monthly County Stock Inventory Report from the Contractor shall be sent to the Engineer by the 5th day of the following month. The County Stock Inventory Report shall be signed by the person directly accountable for the accuracy of same and an officer of the firm with a statement attesting to the accuracy of the report and proper use of the inventory. The Contractor is required to retain all inventory records for a period of 5-years following the completion of the Contract.
- N. If the report submittal is not timely, or significant errors are found, there will be withholding of the routine maintenance payment to the Contractor.
- O. Nothing herein shall be construed as obligating the Department to furnish any parts.
- P. At the termination of the contract, the Contractor shall be solely responsible for any replacements required due to loss, theft, burglary, damage or destruction from any cause whatsoever, of any and all such parts, materials and equipment.
- Q. The Contractor shall provide the Engineer on December 1, 2017 (or December 1, 2018 or December 1, 2019 if this contract is renewed) a list of all County stock inventory and its applicable location that is in his possession on that day. All stock inventory and/or other equipment or materials owned by County in the possession of the Contractor shall be moved to locations as designated by the Engineer, by a date to be specified by the Engineer (during December). The Contractor also shall provide all labor and equipment as necessary to relocate any County equipment (stock) to new facilities. The Contractor shall use his own spare parts for contract work for the remaining days of the term of the Contract.
- R. Regular work Inspection: Following a field inspection, if all required documentation of work has been received, and record drawings submitted if requested, the Engineer shall enter the final pay item quantities, work inspection approval date, and the Engineer approval in the final Inspection Report. This final Inspection Report is transmitted to the Contractor. In cases where

deficiencies are found at the inspection of the Contractor's work, the Engineer shall issue an inspection report to the Contractor. The Contractor should view the report in order to promptly address any work deficiencies. When the Contractor has completed the work deficiencies, the Contractor shall notify the Engineer that the work is ready to be re-inspected.

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

### **13. NEW INSTALLATIONS, INCREASED OR DECREASED QUANTITIES**

Whenever the quantity of any item of work as listed in the Schedule of Prices is increased or decreased due to additions or deletions of items in the installations or systems, payment will be made on the basis of the actual work performed.

The Engineer shall notify the Contractor in writing when changes are made in any installations or systems, which changes will increase or decrease the quantities in the Schedule of Prices. This notification shall give the following information:

- A. A description of the equipment unit or item to be added or removed.
- B. The location of the equipment, unit or item.
- C. The revised totals of the respective item as shown in the Schedule of Prices.
- D. Effective date of change.
- E. The "start and completion dates" for any items subject to MAINTENANCE SCHEDULES, either under Routine Maintenance or to be completed for a unit price.

In case of installation of new equipment to be added to this Contract, the Contractor shall make such inspection as is necessary at the time of actuation to ascertain that the equipment is in working order. In the event the Contractor feels that the equipment is not in proper working order, he shall notify the Engineer in writing within six (6) working days. If, upon the expiration of the 6 working days, the Contractor has failed to notify the Engineer that the equipment is not in proper working order, it shall constitute acceptance of the responsibility for maintenance. It is immaterial whether or not the new equipment to be added to the Contract has been accepted by the Department; the Contractor shall monitor the operation prior to the time of acceptance by the Department. In addition, at no extra cost to the Department, the Contractor shall notify the Engineer concerning matters pertaining to failure of parts, guarantee periods, failure due to faulty construction and knockdowns. This provision is an exception to Section 107.30 of Standard Specifications.

#### 14. METHOD OF BILLING

Quantities included for bidding are only estimates and actual quantities may vary. Unpredictable factors will cause variances from these indicated quantities, both for routine maintenance pay items as well as non-routine maintenance pay items. 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.

The Contractor's unit prices are expected to be realistic and no additional compensation will be allowed due to a variance in quantities; however, the Engineer retains the right to seek a revised unit price where quantities exceed estimated quantities to the extent that additional economies of scale would be normal. The Engineer also retains the right to use force account procedures or use other procurement means available to the Department where unit prices reflect pricing significantly higher than Department project norms. The Contractor is cautioned against unbalanced bidding and is directed to Article 102 of the Standard Specifications.

Within ten (10) days following the receipt of the monthly Routine Maintenance Listing, the Contractor shall submit invoices in duplicate to the Engineer.

The invoice shall contain each of the several installations and systems for the Routine Maintenance performed under this Contract at the unit prices stated in the Schedule of Prices, and the items shall be listed in the order contained in the Schedule of Prices.

Billings for the cost of Routine Maintenance operations shown on invoices shall be for full monthly periods only, and shall not be prorated for shorter periods. Work performed on new installations completed and activated, and installations on which the Department has accepted maintenance responsibility any time during the month shall be billed to cover the entire month. Equipment that has been inactivated, eliminated or on which the Department has relinquished maintenance responsibility at any time during the month shall be considered not maintained for the entire month and will not be billed for the month.

Separate invoices to the Engineer shall be submitted by the 25th of each month for each of the several installations or systems for work performed by the Contractor during the previous month, when the work is paid for on a per-month basis or is on a schedule requiring a monthly work accomplishment.

Separate invoices to the Engineer shall be submitted by the 25th of each month for Item BU for work performed by the Contractor during the previous month. Such invoices shall identify the equipment repaired by location, pole number, or work order number, and shall show the total number of items billed at the unit prices in the schedule of prices.

Each Regular work shall be inspected and accepted by the Engineer before billing for the cost of Regular work.

Separate invoices to the Engineer shall be submitted no later than thirty (30) calendar days after completion of the work for Regular work and work performed for a unit price when the

work is to be performed once per authorization. Each invoice shall show the date of authorization for the work and shall not be prorated.

Each invoice shall have a notarized certification by the Contractor to the effect that the work shown thereon has been complete in accordance with the provisions of the Contract and all applicable specifications.

The Engineer may withhold up to 100% of the total monthly routine maintenance payment for all systems for the incomplete or otherwise unsatisfactory performance on any system, including but not limited to failure to respond to reported incidents in a timely manner, perform proper field maintenance, complete authorized work, or document dispatch or response work activities in the time and/or manner specified herein.

After previously uncompleted or deficient work has been substantially completed to the satisfaction of the Engineer, the Contractor shall advise the Engineer in writing, requesting the release of funds previously withheld. The Engineer shall approve the release of funds previously withheld from the Contractor through an authorization letter.

#### **15. DELAYS IN PROSECUTION OF WORK - LIQUIDATED DAMAGES**

Whereas, the Contractor is obligated to assure that the various items of equipment in the installations and systems perform properly; whereas, maintenance operations to the respective installations and systems prescribed by this Contract must not be interrupted; whereas, maintenance schedules and completion dates are specified for various items of work which schedules are deemed of paramount importance in the maintenance functions; whereas, failure to perform all functions in the manner specified and within any time limit specified may seriously jeopardize the welfare of the general motoring public, the Contractor agrees that should he refuse or fail to prosecute the work or any separable part thereof promptly and in the manner specified in this Contract with such diligence as will insure its satisfactory completion, the Engineer at his direction may take one or more of the following actions: (1) Withhold payment of any monthly or final remittance for any installation or system until all work has been performed to the satisfaction of the Engineer, (2) Remove the installation from the County's maintenance to the Contractor's maintenance responsibility until said work is completed and inspected by this Department, (3) Deduct a proportionate amount of money for work not performed on any installation or system from any monthly or final remittance due to the Contractor with the amount of money deducted to be determined by the Engineer, (4) By written notice to the Contractor terminate his right to proceed with the work or such part of the work that has been delayed, in which event the Department may take over the work and prosecute the same to completion, by contract or otherwise, and the Contractor and his sureties shall be liable to the Department for any excess cost, occasioned by the department, it will be the Engineer's option to require the Contractor pay another contractor, (as approved by the Engineer) for the corrective work, the actual time and materials cost of which shall be deducted from the Contractor monthly routine maintenance payment as liquidated damages. (5) If in the option of the Engineer any work performed on this Contract may seriously jeopardize the welfare of the general motoring public, the Engineer has the authority to order the immediate suspension of the work task. Depending on the offense, the Engineer may withhold all or a portion of the monthly routine maintenance payment due to the Contractor, as liquidated



damages (6) Assess liquidated damages; if any work covered by maintenance schedules in any of the installations or systems, or if any other work which under this Contract is to be completed by a certain date or at the expiration of a certain time interval, shall remain uncompleted after such date or the expiration of such time interval, or after any authorized extension of such stipulated time, the Contractor expressly agrees to pay to the Department the sum as specified in Special Provision for "Failure To Complete The Work On Time" found elsewhere in this Contract for each and every Calendar Day and for each and every item of such work remaining uncompleted, and such monies shall be paid as liquidated damages to partially cover losses and expense to the Department, and not as a penalty.

The Department shall recover said liquidated damages by deducting the amount thereof from any monies due or that may become due to the Contractor, and if said monies are insufficient to cover said damages, then the Contractor or the sureties shall pay such amount due. In any of the above instances, the right of the Contractor to proceed shall not be terminated because of any unavoidable delay in the completion of the work caused by the Department, other Contractors employed by the Department or unforeseeable causes beyond the control and without the fault or negligence of the Contractor. The Contractor shall as soon as practicable notify the Engineer in writing of the cause of such delay, if any, and request of the Engineer in writing, such additional time or relief as he may deem necessary.

The liquidate damages shall be assessed initially per incident. If that incident continues, the per day will be assessed in addition to the per incident assessment.

Liquidated Damage Assessment

Per Day	Per Incident	Per Contract Specifications:
\$ 500.00	\$ 1,000.00	Failure to Respond, Per Ticket or Per Engineer Direction
\$ 200.00	\$ 500.00	Failure to Respond, Per Time Specifications (Refer to Articles herein)
\$ 200.00	\$ 500.00	Failure to Provide Timely Routine Repairs and/or Meet Non-Routine Work Due Dates
\$ 200.00	\$ 1,000.00	Failure to Provide Documentation (Authorizations, Ticket Information, Reports, Submittals for Routine or Non-Routine
\$ 200.00	\$ 500.00	Failure to Supply Replacement Parts
\$ 200.00	\$ 500.00	Failure to Provide Proper Service
\$ 200.00	\$ 500.00	Failure to Follow Specified Procedures
\$ 200.00	\$ 500.00	Failure to Provide Proper Staffing
\$ 200.00	\$ 500.00	Improper Use of Materials or Methods
\$ 500.00	\$ 1,000.00	Failure to Replace CCDOTH Stock
\$ 500.00	\$ 3,000.00	Failure to Return CCDOTH Stock at End of Contract

### III SPECIAL PROVISIONS

#### Item A TRAFFIC SIGNAL INSTALLATIONS ROUTINE MAINTENANCE

In addition to the requirements listed above as **ROUTINE MAINTENANCE**, the following shall be part of this item:

Check, test, and service each installation once every two (2) weeks, or more often if directed by the Engineer, to assure that each installation and component part is functioning properly and efficiently.

##### 1) Traffic Components, Controller And Cabinet Inspection:

Check for alignment of signal heads, posts, mast arm poles, control cabinet, EVP, check for light outages, and check all visors, backplates, masking of optically programmed faces and general operation. Repair or replace all worn, missing or damaged components within the time limits specified. All poles, foundations, posts and astro brackets must be straightened to be vertically plumb.

Check all anchor bolts for mast arm poles, signal posts, controller cabinets, and, in addition, all bolts used to attach the mast arm to the pole.

Replace missing or damaged bolt covers, mast arm shrouds and handhole access covers. Tighten screws related to signal post bases, backplates, anchor bolt covers, handhole access covers, service installation covers and controller cabinets.

Repair or replace any failed or damaged signal components including signal controllers, cabinets or peripheral equipment, signal heads or mounting hardware, posts or mast arms, illuminated signs, pedestrian signs, uninterruptible power supply, uninterruptible power supply backup battery, detectors (vehicle and pedestrian), grounds, cable, conduits and other appurtenances which are part of a signal installation except those items which have been added under permit and for which the County has not assumed maintenance responsibility.

The Contractor shall at all times maintain his own stock of sufficient materials and equipment to make temporary and permanent repairs.

The Contractor shall provide signal operating inspection tasks upon request such as:

- i) Inspect the timing operation of a signal installation at a specified time period and provide a recommendation for improving traffic flow.
- ii) Program timing parameter changes.
- iii) Determine the phasing or operation of a signalized installation.
- iv) Check the condition or verify the presence of equipment at a signalized location.
- v) Provide a copy of timing parameters in use at a signalized location.
- vi) Provide recommendations to improve the safety or the operations of a signalized location.
- vii) Provide a compiled list of all locations meeting specified criteria.

All controllers to be checked, which will include visually inspecting all timing intervals, coordination programs, clocks, vehicle and system detectors, pedestrian push buttons, LED street name signs, photo cells for LED street name signs, box prints, cable logs, manuals, relays, backup battery system for the intersection and railroad and emergency vehicle pre-emption equipment (including testing of railroad and emergency vehicle pre-emption using test switches) to ensure that all are functioning properly. The cost of repairing or replacing the emergency vehicle pre-emption equipment shall be invoiced, by the Contractor, directly to the local agency, as instructed by the Engineer. The Contractor shall notify the agency immediately that their pre-emption equipment is not operating and ask if immediate repairs are requested or if an estimate of repairs is necessary before repair work is provided.

Uninterruptible Power Supply (UPS) shall be tested to assure proper operation of the traffic signals upon loss of normal electric utility power. Manual transfer and power loss transfer shall be tested which shall not put the signal in flash. Nominal output voltage and current along with battery string voltage shall be measured and compared to manufacturer's expected values and recorded. Batteries not meeting minimum ratings and capacities shall be replaced under routine maintenance.

Keep the interior of all control cabinets clean, neat and in a workmanlike condition at all times and make sure duct seal is in place over all conduit openings. Remove the dust from the interiors of controller cabinets with a brush and vacuum cleaner. The Contractor is responsible for removing posters and graffiti as soon as it is found from controller cabinets and all components of the traffic signal installations and shall repaint as necessary and as directed by the Engineer. Change the air filters in controller cabinets at least once every three (3) months, or more often if so directed by the Engineer at specific locations.

The Contractor shall replace the backup battery in an all solid state intersection controllers and master controllers and flasher controllers during July in even years. The new battery shall meet the minimum requirements of the controller manufacturer.

All traffic signal posts that are knocked down are to be replaced by a new galvanized post and galvanized base. Painted and galvanized are not allowed on the same post.

All illuminated signs that are knocked down are to be replaced by new or repaired parts. Signs with LED modules should be replaced with LED modules of the same make to minimize performance differences, unless directed otherwise by the Engineer.

Maintain proper timing of the control equipment, and of dial settings, detector relays, and amplifiers, as directed by the Engineer or as dictated by changes in traffic volumes. The Contractor is responsible to perform adjustments to the traffic signal timings to address observed operational issues. All timing changes made on closed loop systems are to be approved by the Engineer. Test and adjust emergency vehicle preemption equipment and report to the City, Village or Fire Protection District, if the system is not working properly.

Check Detector Loop layout on traffic signal installations under construction.

**2) Repair of Signal Lamp and LED sign Lamp Outages:**

Replace all burned out lamps/modules and damaged sockets within ONE HOUR if less than two far lamps/modules are lit for one movement, and within ONE HOUR for all pedestrian signals and illuminated signs. All replacement lamps/modules shall be of the type and wattage specified below. If two or more far signal indications remain in operation for each vehicle phase (movement), the replacement of the burned out lamp, modules or damaged socket shall be accomplished within one (1) working day. Immediate corrective action must be provided if only a single signal indication remains in operation for any vehicle phase. At the time of replacement of a burned out lamp/module or lamps/modules, the reflector and lens shall be cleaned. Lamps in other than traffic signals shall be group replaced, replacing all similar lamps in the unit containing the burned out lamp. Burned out controller indicator lamps, LED and LCD displays shall be replaced as discovered. LED signal sections are to be replaced with LED signal section with LED modules of the same make.

**3) Signal Damage Equipment Replacement:**

The location of a temporary or permanent traffic signal head installation shall also meet the requirement of the Manual on Uniform Traffic Control Devices. Two far signal heads facing each through traffic approach, two signal faces directed toward any right or left turn movement and two pedestrian signal faces for each crossing shall be considered the minimum acceptable signal operation pending permanent repairs.

When bagging signal heads is required, light tan colored traffic and pedestrian signal reusable covers shall be used to cover dark/un-energized signal sections and visors. Covers shall be made of outdoor fabric with urethane coating for repelling water, have elastic fully sewn around the cover ends for a tight fit over the visor, and have a minimum of two straps with buckles to secure the cover to the backplate. A center mesh strip allowing viewing without removal for signal status testing purposes shall be part of the cover. Covers shall include a message indicating the signal is not in service.

Where the distance from the stop bar to the far signal is greater than 150 feet, a near right signal shall also be maintained. Signal faces for through traffic on any approach shall not be less than eight feet apart measured horizontally between center lines of face with a minimum mounting height of seventeen feet above the crown of pavement surface. See the Standard Detail Sheets for additional mounting requirements.

A temporary signal face shall contain the same type, number and size of lenses as the signal face being replaced. Twelve inch sections shall be used to replace eight inch sections.

LED modules should be replaced with LED modules of the same make to minimize performance differences, unless directed otherwise by the Engineer.

Damaged signal heads including pedestrian signal and all mounted hardware shall be replaced in-kind. Incandescent shall replace incandescent; LED's shall replace LED's; new pedestrian count-downs shall replace pedestrian count-down types, etc.

Locations where pedestrian signal indications are present one (1) pedestrian signal head must face each direction of a pedestrian crosswalk.

**4) Power Outages and Flashing Operation Procedures:**

When repairs at a signalized intersection require that the controller be disconnected and if power is available, the Contractor shall place the intersection on flashing operation. Install a flasher if none is provided in the controller cabinet. The signal shall flash red for all directions unless a different flashing indication has been directed by the Engineer.

At signal installations where power is not available, due to a power failure, or a flasher must be installed, the Contractor shall first place at least one "Stop" sign, Illinois standard Sign R1-1-36x36 on each approach to the intersection as a temporary means of regulating traffic except for those approaches to which a flashing yellow indication will be shown. The stop sign shall be located at the stop bar and mounted at a height of 5-ft above curb or shoulder with a set-back of 12-ft from travel pavement unless otherwise directed by the Engineer. The Contractor when installing temporary stop signs must switch the controller to the flashing operation when responding to a power failure. If the approach flash is yellow, the Contractor is not to place a temporary stop sign unless the flashing operation is changed to red by direction of the Engineer. The Contractor shall furnish and equip all vehicles involved with the maintenance of traffic signal installations with a sufficient number of stop signs to be erected as specified herein.

Refer to Article II General Contract Policies - Emergency Response and Call-Out Policy for response and repair time requirement.

In case of failure from any cause whatsoever of new equipment being maintained prior to ultimate approval or while under guarantee, the Contractor shall install spare control equipment as approved by the Engineer. The faulty equipment shall be taken to the Contractor's shop and the Contractor shall notify the Engineer. The Engineer will notify the installing Contractor or distributor of the failure, and that the equipment is to be picked up, repaired, and returned to the Contractor.

**5) New, Revised or Transferred Traffic Signal and Flashing Beacon Inspections:**

The Contractor shall furnish a trained representative for each traffic signal inspection that requires a new or existing traffic signal installation to be added to the Contract or the transfer of an existing traffic signal installation of this Contract to another agency or contractor. Refer also to transfer requirements in the previous Article.

The Contractor shall:

- i) Analyze all induction loop detector loops at the controller cabinet insuring that each detector loop or set of detectors conforms to the Standard Specifications and the CCDOTH Traffic Signal Specifications.
- ii) Analyze the controller program provided by the controller manufacturer to insure that the phase and overlap designation on the traffic signal sequence drawing is provided correctly in the controller program and cabinet wiring drawings.
- iii) Insure that the phase timings in the traffic signal controller are those provided by the Department.
- iv) Assist in placing the traffic signal in operation by observing the signal display and checking of the conflict monitor while all vehicle traffic is stopped, and shall report any operational discrepancies or signal outages to the Engineer immediately.

- v) Assist the Engineer in walking all approaches of the signal installation inspecting all traffic signal items for conformance with the Departments specifications for the project and aiming of the traffic and signal heads.
- vi) Assist in the testing and adjusting of emergency vehicle preemption equipment. The Contractor shall insure that any time railroad preemption is in operation with emergency vehicle preemption that the railroad preemption has priority over the emergency vehicle preemption equipment.
- vii) Assist in the testing and adjusting of UPS equipment.
- viii) Insure that the locations containing railroad preemption are programmed in accordance with the approved railroad preemption program and that all special lock out devices are operating.
- ix) Be responsible for inspecting each location to determine the completion of construction punch lists as directed by the Engineer. The punch lists shall be prepared and provided by the Engineer and the Contractor shall return written verification of punch list completion or non-completion.
- x) Upon request, review locations proposed for loop replacement in ongoing pavement resurfacing or grinding construction contracts.

**6) Relamp Traffic Signal Sections and Clean Lens:**

Change all 135 watt and 90 watt signal lamps and wash all signal lenses including LED's once during the even contract year of this contract in April and wash video detector lenses four times a year or more often if so directed by the Engineer at specific locations. All remaining incandescent lamps shall be relamped annually. All LED signals shall be relamped every eight (8) years from date of installation. All LED street name signs shall be relamped every thirteen (13) years from the date of installation. Refer to Article VI and VII, List of LED Locations with installation date. This work is not to be done by the five (5) patrolmen, but is to be done by a separate crew. In addition, clean the reflector and wash inside and outside of lens each time a lamp is replaced. Lenses that are damaged in any manner whatsoever must be replaced. Steam clean and wash all components exposed to weather in even contract year or more often if so directed by the Engineer at specific locations. Replace damaged lenses or any part of the signal system as needed or as directed by the Engineer, regardless of annual relamp schedule.

The Contractor must furnish, in writing, a schedule indicating the dates on which the above work will be done prior to the start of work. Contractor shall relamp an entire intersection on the same day. Upon completion of the relamping, lens washing and reflector washing, the Contractor shall furnish to the Engineer a completion report.

Old lamps shall be disposed of in accordance with the manufacturer recommendations and Environmental Protection Agency and requirements in this Article as stated herein.

All used LED lamps must be taken to a certified processing facility meeting Environmental Protection Agency (EPA) Standards. A receipt shall be furnished to the County showing that the lamps have been disposed of properly. The LED lamps shall be taken to Sims Recycling Solutions (630) 231-6060 or to another EPA and the County approved lamp recycling center.

All replacement lamps shall meet the following specifications:

- i) 12" T.S. Section: The lamp shall be a nominal 135 watt; 1650 lumens; average rated life of not less than 16,000 hours, with a 3" light center.
- ii) 8" T.S. Section & 9" Pedestrian Section: The lamp shall be a nominal 54 watt; 530 lumens; average rated life of not less than 8,000 hours, with a 3" light center.
- iii) 12" Pedestrian Signal Section: The lamps shall be a nominal 90 watt; 1000 lumens; average rated life of not less than 16,000 hours, with a 3" light center.
- iv) 12" Optically Programmed Section: The lamp shall be a nominal 150 watt sealed beam; average rated life of not less than 6,000 hours.
- v) All other lamps shall meet the recommendations of the manufacturer and shall meet with the approval of the Engineer.

**7) Conflict Monitor Testing Program:**

The Contractor shall conduct a complete test of all conflict monitors and malfunction management units once a year by September 1. The testing method shall be pre-approved by the Engineer and shall test all the features of the monitors or units as required by the Engineer.

Unless prior approval is given by the Engineer, all testing shall be completed by the Contractor within the same working day at a single traffic signal installation. The Contractor shall provide a schedule for this work to the Engineer. Any deviation from the approved schedule shall be approved by the Engineer.

The Contractor shall provide a final completion report listing all the signal installations with the date the work was completed and verifying that each item has been completed. The Contractor will be required to provide Progress Reports at the Engineer's request showing the locations which have been completed to that date.

Conflict Monitors/ Malfunction Management Units shall not be replaced at railroad interconnected intersections without prior notification of the Traffic Signal Engineer.

In addition, the conflict monitor or MMU shall be tested after damage is done to the cabinet such as a lightning strike, cabinet hit or knocked-down, etc.

The testing method shall be pre-approved by the Traffic Signal Engineer and shall include:

- Removing the intersection's monitor and running a complete test at the Contractor's shop with a conflict monitor/MMU tester unit.
- A spare monitor should be installed temporarily while the test is being performed or monitors may be shop-tested by rotating pre-tested monitors to the field.
- Documentation of the tested monitor should be made which includes the following:
  1. Date
  2. Name of Technician
  3. Location – including EMCMS location number, intersection name, city and/or county
  4. serial number of conflict monitor
  5. Comments regarding fail or pass conditions
- Failed monitors should either be repaired so that they pass the monitor test or

- replaced with a new monitor that passes the test.

**8) Mast Arm Assemblies And Pole Inspection:**

The Contractor shall inspect all mast arm assemblies, mast arm poles and brackets (or other types of hardware) supporting traffic signal heads or pedestrian signal heads.

This inspection shall be completed between April 1 and August 1 of the contract year and may be concurrent with the group relamping or done separately. The Contractor shall furnish schedules for this program a minimum of one week in advance of the start of work. The inspection requires reporting the Daily Work Schedule and follow-up documentation of the work. The inspection shall focus on the structural elements of the mast arm assembly and must include a close-up arms length investigation of the following elements:

- i) Mast Arm
- ii) Mast-to Pole Connection
- iii) Pole
- iv) Base Plate
- v) Anchor Bolts
- vi) Concrete Foundation

The arm of the assembly shall be visually inspected at all signal head connections for any defects, such as cracks or buckles. The mast arm-to-pole connection shall be inspected for significant loss of section, cracks in welds or base metal, and deterioration of the connection plates. The bolts of the arm-to-pole connection shall be inspected for tightness and condition.

The pole shall be checked for external corrosion, impact damage, perforation by rust through, and any discernible deflection, distortion or cracking. The pole shall be closely checked for corrosion near the base plate, especially if mounted on a grout bed. The welds of the pole-to-base plate connection shall be checked for cracks.

The base plate shall be checked for any severe section loss or deformation. The anchor bolts of the mast arm shall be inspected to verify that the existing nuts are not loose or missing. The anchor bolts shall also be checked for any corrosion or bending.

Upon discovery of any buckles, significant structural defects (loose nuts, severe corrosion or dents, cracks in welds, plates or structure, etc.), the Contractor will immediately notify the Engineer and take corrective action as directed by the Engineer to insure the assemblies do not pose an immediate hazard. Upon discovery of corrosion, the pole shall be coated with a bright color spray zinc coating.

The Contractor's crew must inspect the entire intersection on the same working day. The Contractor shall provide the Engineer a completed form for each Department maintained traffic signal installation with all mast arm assembly and pole inspections at that installation on a single form.

**9) Annual Railroad Interconnected Traffic Signal Inspection:**



The Illinois Commerce Commission will conduct an inspection of all Department traffic signal locations which are interconnected with railroad crossing flashing signal warning devices with or without railroad gates. Locations not maintained by the Contractor but under the County route jurisdiction System are also included. The inspection shall be completed on an annual basis during the calendar year. In addition to the Contractor an inspection team may consist of personnel from the County, the railroad responsible for the railroad crossing warning equipment, and the Illinois Commerce Commission. The Engineer will schedule the inspection of each railroad interconnected location based on the availability of personnel from each involved agency.

The Contractor shall be responsible for making all necessary measurements as directed by the Engineer. He shall determine all signal time intervals and controller settings which pertain to railroad preemption. The sequences of operation shall be checked and the Contractor shall conduct all necessary tests. Any deficiencies or recommendations shall be reported directly to the Engineer.

The Contractor shall maintain and update individual security software and proms for the railroad interconnected signals in Cook County. These items shall remain under strict security and be transferred back to the Department at the end of the Contract. The Contractor shall at all times provide and maintain one (1) Eagle/Siemens traffic signal controller and (1) Econolite traffic signal controller, at a location to be approved by the Traffic Signal Engineer, loaded with District 1 approved security software, which can be used to replace damaged equipment in the field. The controller model shall be as directed by the Engineer.

**10) Uninterruptible Power Supply System Maintenance and Test:**

The Contractor shall conduct a complete test of all Uninterruptible Power Supply Systems once a year by September 1. The testing method shall be pre-approved by the Engineer and shall test all the features of the monitors or units as required by the Engineer. Unless prior approval is given by the Engineer, all testing shall be completed by the Contractor within the same working day at a single traffic signal installation. The Contractor shall provide a schedule for this work to the Engineer. Any deviation from the approved schedule shall be approved by the Engineer.

Quick Check once every two (2) weeks the following items:

- i) Remove any dust or dirt.
- ii) Check fan for operation.
- iii) Check battery cable connections.
- iv) Clean battery terminals, if necessary.
- v) Check AC connections.
- vi) Keep UPS clean.
- vii) Check for alarms.

A complete test of all Uninterruptible Power Supply Systems once a year shall include the following items:

- i) Document the battery voltage of each battery under the normal operation, on inverter full load, inverter no load and power down batteries disconnected conditions.

- ii) For multiple batteries, the readings will be compared to each other. Their battery voltages should be within 1/10 of a volt of each other. Under normal operation, battery voltages that vary more than 3/10 of a volt may a potentially weak battery.
- iii) With the battery being discharged, if the reading is below 11.5v, this indicates a weak battery.
- iv) Replace this weak battery with the same manufacturer and rating with a label indicating new installation date. If the batteries are more than three years old, replace all batteries with the same manufacturer and rating as original with a label indicating new installation date on each battery.
- v) When the batteries are five years old, replace all batteries with the same manufacturer and rating as original with a label indicating new installation date on each battery and be considered routine maintenance.

Existing batteries shall be recycled meeting all applicable sections of US EPA and IL EPA publications along with the Code of Federal Regulations for transportation.

The Contractor shall provide a final completion report listing all the signal installations with the date the work was completed and verifying that each item has been completed. The Contractor will be required to provide Progress Reports at the Engineer's request showing the locations which have been completed to that date.

#### **11) Vehicle Detector Maintenance and Replacement:**

Maintain and replace magnetic detectors, video detectors, cameras, detector loops, thermal detectors, micro loops, preformed detector loops, microwave detectors, wireless detectors, radar presence detectors, thermal detectors and emergency vehicle detectors along with their related amplifiers, microprocessors, relays, diodes and power supplies damaged from any cause whatsoever. The maintenance of video detection, thermal infrared detection and radar presence detectors shall include all necessary modifications to programmable detection zones. Microwave or fiber optic communications equipment for video and radar presence detections on both the sending and receiving end, or in between, shall be included as part of the detection.

All detector loops which become inoperable must be replaced by the Contractor. All existing detector loops shall be resealed when found with exposed wires or missing or damaged sealant or as directed by the Engineer. The cost of replacing the detector loop shall be part of Traffic Signal Routine Maintenance. Detector loops that are damaged by Department forces shall be replaced and paid through a Non-Routine Authorization letter. A detector loop which is milled out during a pavement resurfacing will be replaced as part of the Departments resurfacing contract or through a Non-Routine authorized letter. The Departments Electrical Maintenance Contractor will be notified by the Engineer and dispatch a patrol person to the location to disconnect the loop detector cable from its terminals and place the affected phase or phases on maximum recall. At this time the Engineer will instruct the Contractor representative as to the maximum green time that is to appear for each of the affected phases.

System Detector Loops shall be replaced throughout the entire year. Non-System Loops, at the Contractor's option, between November 30<sup>th</sup> and March 1<sup>st</sup> may be replaced by a loop, with a temporary video detector at no additional cost to the Department. The video or radar presence

detector shall be installed to provide adequate detection in place of the detector loop to the satisfaction of the Engineer and it shall be removed and replaced permanently by a detector loop by March 31st. If the contractor is unable to install cable for the temporary detectors due to frozen or full conduits, with prior approval from the Engineer, the Contractor may temporarily span the cable overhead as long as proper clearances over the roadway can be maintained. No additional compensation shall be provided for detector cables or for any special installation requirements.

At locations where the Contractor deems the pavement condition to be unfit to replace an existing inoperable detector loop with a new loop due to pavement deterioration, the Contractor shall, with prior approval from the Engineer, install a preformed detector loop in place of the existing detector loop. The preformed detector loop shall be installed in accordance with the specification "Preformed Detector Loop" under Non-Routine Work. The cost of providing and installing the preformed detector loop, complete including all necessary connections, handhole drilling, trench and backfill, coilable non-metallic conduit and restoration shall be included in routine maintenance of the traffic signal installation and no extra payment shall be allowed.

The Contractor shall provide licensed software for each of the Patrolmen who have video detection and/or radar detection in their respective area. The Patrolmen shall be fully instructed in the operation and maintenance of each video and radar detection system. The Contractor shall provide licensed software for each of the Patrolmen which have tilt/pan/and zoom video cameras in their respective areas. The Patrolmen shall be fully instructed in the operation and maintenance of these cameras.

**12) Equipment Malfunction And Repair Tracking:**

Malfunction and repair of traffic signal equipment shall be recorded by the Contractor and reported monthly to the Traffic Signal Engineer in a data base on a CDROM. Information shall include date of failure, date of repair or replacement, reason for failure (lightning, water damage, etc.), equipment type, model, manufacturer, location and any other pertinent information as directed by the Traffic Signal Engineer. Equipment replacement information shall include model, manufacturer, and source (new, County stock, other location, etc.). Reports shall include monthly and accumulative totals. LED module failures/outages shall include the information noted above and include age of module, color, and display (ball, arrow, pedestrian hand/man/outline/full/count-down, etc).

**13) Traffic Signal Outage And Operation Report**

The Contractor shall maintain a data base that tracks traffic signal outages and operation and generates a report that provides a comprehensive list of these traffic signals locations on a daily and monthly basis. The report shall include, but not limited to:

- Traffic signal locations that are currently dark or are in flashing red mode
- Traffic signal locations that have been dark or in flashing red mode within the last 24 hour period.
- Locations identified by TS number, intersection and route, county and community
- Identify reason for dark or flashing condition with estimated time/date of restoration to normal operation.
- Corrective action taken with date and time normal operation was restored

The report shall be generated from the data base and emailed to the County. Monthly reports shall be submitted to the County on CDROM.

**14) Closed-Loop Traffic Signal Monitoring System:**

Maintain the County Close Loop Traffic Signal Monitoring System (CLMS) as described in detail within Item A-9. This includes monitoring and maintenance of any signals included in the future State-County or County-County Traffic Management Center (TMC). The signals within the TMC network will be monitored as described in Item A-9. The necessary computer components (use of one or more PCs is anticipated) and one or more standard phone lines required to interface with the TMC are included in the CLMS. All CLMS requirements shall remain in effect for all signals transferred to this proposed system.

Monitor all closed loop systems maintained by him for the County from his main office or repair shop on a 24 hour per day, 7 days per week basis. The Contractor shall program all closed loop systems so that he will receive all system alarms, events and messages on his monitoring systems. The Contractor shall provide an electronic patrol of each master and local controller at least once each week. This is in addition to regular field patrols.

The General Foreman shall review the report and forward any discrepancies to the patrolman for repair. A log showing the date of any discrepancies and date fixed shall be done by the General Foreman. The Contractor shall prepare a closed loop system status report and log once every week and system monitoring report monthly which format and content required shall be approved by the Engineer and e-mail it to the Engineer and the County monitoring Consultant. This status report shall document that all equipment is working properly and the timings and programming in each system have not changed from their correct values. In addition, this electronic patrol shall include, but not be limited to, system loop checks (failed, maximum presence and no activity), local loop checks (phases on recall and locked detectors), loops with system outputs (volume and occupancy tests), master controllers answering, local intersections on line and telemetry checks. Any exceptions found shall be reported to the Engineer via e-mail and corrected within seven (7) days. Once a month the Contractor, County System Monitoring Consultant and the Engineer shall meet to discuss system reports.

The Contractor shall maintain the integrity of the timings and programming information contained in the local and master controllers. The Contractor shall maintain his own database of all local and master controller timings, settings and programming information including graphic displays for intersections and systems. This database shall be kept by him at his place of business and **the Contractor's data base is considered the CCDOTH Master Database**. This data base shall also include County maintained Closed Loop Traffic Control Systems that are on IDOT maintained routes.

**TRAFFIC SIGNAL ROUTINE MAINTENANCE PAY ITEMS****Item A -1 TRAFFIC SIGNAL INSTALLATION**

Maintain all traffic signal equipment located at a traffic signal installation owned and/or maintained by the County. A traffic signal installation shall consist of all equipment controlled by one local traffic signal controller, including but not limited to the following:

- 1) Traffic signal heads, traffic signal posts, mast arm assemblies, poles, illuminated signs and foundations. The traffic signal heads shall consist of signal sections, backplates, louvers, visors, and special signal sections, lamps, incandescent lamps, and light emitting diodes.
- 2) The controller cabinet with its associated equipment, closed loop system communications equipment, uninterruptible power supply systems, switching units, intersection coordinators, service installation, TMC communication equipment, time switches and, where applicable, control pedestal and foundation.
- 3) Pedestrian signal heads, Pedestrian countdown signal heads, pedestrian pushbutton detectors, infrared pedestrian detectors and associated signs.
- 4) A NEMA TS 1 or NEMA TS 2 actuated controller and cabinet: The controllers may be electrical-mechanical or solid state types with volume density features, railroad preemption, fire preemption, and time base coordination. The railroad preemption, fire preemption, and time base coordination may be internal, a module or external to the controller.
- 5) Emergency vehicle preemption equipment and intersection monitoring devices, where applicable, shall be checked for operation and maintained. The cost of repairing or replacing the emergency vehicle preemption equipment shall be invoiced, by the Contractor, directly to the local agency, as instructed by the Engineer.
- 6) Red Light Running Enforcement equipment and connections within the traffic signal cabinet shall be maintained where applicable. The cost of maintaining or repairing Red Light Enforcement equipment shall be invoiced, by the Contractor, directly to the local agency, as instructed by the Engineer. For Cook County Red Light Running Enforcement maintaining and repairing connection shall be considered routine.
- 7) Magnetic detectors, video detectors, cameras, detector loops, micro loops, preformed detector loops, microwave detectors, wireless detectors, radar detectors, cameras with pan-tilt-zoom (PTZ), thermal infrared detectors and emergency vehicle detectors, along with their related amplifiers, microprocessors, relays and diodes. The maintenance of video detection, radar detection and thermal infrared detectors shall include all necessary modifications to programmable detection zones. Microwave and wireless communication for detection including transmitters, receivers, antennas, reflectors and all other communication equipment either on the sending end, receiving end, or in between shall be included as part of the detection. The cost of repairing or replacing the emergency vehicle light detectors shall be invoiced, by the Contractor, directly to the local agency, as instructed by the Engineer. By direction of the Engineer, the Contractor will inspect loop layout to assist the Engineer on the Construction Contacts.

- 8) Illuminated regulatory and Street Name sign systems. The illumination shall be accomplished by incandescent lamps, fluorescent lamps, neon tubes, light emitting diodes or fiber optic lights.
- 9) Electrical and telephone service installations.
- 10) Railroad interconnected traffic signal equipment, conduit, wiring, and security Systems.
- 11) Traffic signal cable and interconnect cable including copper wires and fiber optic cables.
- 12) Traffic signal wireless interconnect systems.
- 13) Signal heads and conduits attached to railroad cantilever or truss structures.
- 14) Grounding systems complete with ground rods, ground wells, and grounding cables.
- 15) Traffic signal conduits and interconnect conduits. The conduits may be in the ground or attached to structures.
- 16) Traffic signal handholes and interconnect handholes.
- 17) All combination poles with luminaire mast arms including the luminaire(s), lighting mast(s), combination pole lighting controls and cabling.
- 18) Uninterruptible Power Supply (UPS).
- 19) Traffic master controllers with solid state features with associated equipment and where applicable, cabinet and foundation. The associated equipment shall consist of modems, telephone jacks, switching units, transceivers, network switches, interface boards for copper and fiber optic type interconnect cables, noise suppressers and associated components for coordinated traffic signal systems.
- 20) Check and adjust daylight saving time on each master and local controller.
- 21) Other maintenance items to be performed by the Contractor as included under this Pay Item include:
  - a) Maintain the CCDOTH inventory of Traffic signal equipment on Microsoft Access Software.
  - b) Maintain a library of repair and operation manuals for equipment in the CCDOTH signal inventory.
  - c) Purchase and maintain up to date licensed software to operate and maintain all Closed Loop Traffic-Signal Systems (Econolite and Eagle), Video and Detection Systems (Auto Scope, Iteris, Flir, Interceptor, Sensys, Smartmicro Optelecom), Flasher Systems (software for Rectangular Rapid Flashing Beacons) and related management systems.

- d) Purchase and maintain repair and testing equipment necessary to meet the response or repair time requirements of the Contract. Calibration of test equipments shall be completed in accordance with manufacturer recommendations.
- e) Provide technical assistance at traffic signal inspections, traffic signal turn-on, temporary traffic signal turn-on, and maintenance transfers.
- f) Provide two week inspections of the traffic signal system through Contractor provided staff of IMSA level II technicians.
- g) Replace all incandescent lamps as stated in this Article Item A , "Relamp Traffic Signal Sections and Clean Lens". All LED signals, LED illuminated signs and all LED street name signs to be relamped every eight (8) years from date of installation.
- h) Inspect all mast arm poles yearly and provide report on damage poles.
- i) Inspect and test conflict monitors every year.
- j) Inspect all railroad interconnected signals on the County highway System (even those maintained by others) on a yearly basis. (This inspection shall be coordinated with members of the Illinois Commerce Commission (ICC) and the associated railroad companies.)
- k) Replace all batteries in local and master controllers, time clocks and coordination units yearly. Place a sticker on the unit showing the date when the battery was replaced.
- l) If the batteries for Uninterruptible Power Supply Systems are more than five years old, replace all batteries with the same manufacturer and rating as original with a label indicating new installation date on each battery.
- m) Measure crosswalk distance from curb to curb and provide controller pedestrian phase timing to the Engineer by May in the even year of the Contact. Adjust pedestrian timing by the direction of the Engineer within a month after receive Engineer's revised pedestrian timing sheet.
- n) Provide yellow timing and all red timing to the Engineer by May in even year of the Contract. Adjust yellow timing and all red timing by the direction of the Engineer within a month after receiving the Engineer's revised timing sheet.

**Item A-2 TEMPORARY TRAFFIC SIGNAL INSTALLATION**

Maintain a temporary traffic signal installation, complete. The installation shall consist of all equipment controlled by one local traffic signal controller including signal heads, two (2) or more per approach and any number of signal sections, wood poles with down guys, span wire cable, span wire accessories, tether wires, electric cables, and service installation. Pedestrian signal heads and detectors, vehicle detectors

and all other items listed under A-1 (Traffic Signal Installation), including system equipment, shall be included in this Item where applicable.

### **Item A-3 FLASHING BEACON INSTALLATION – OVERHEAD**

Maintain a signal head, flashing beacon, overhead mounted, flasher controller in a housing and where applicable, the complete span wire installation. The signal head shall consist of one (1) or more faces with any number of signal sections. The span wire installation shall consist of two (2) or more wood poles with down guys, span wire cable, span wire accessories, electric cable, conduit, handholes, ground rods and service installation.

### **Item A-4 FLASHING BEACON INSTALLATION - POST MOUNTED**

Maintain a signal head, flashing beacon low mount, flasher controller in a housing, service installation, conduit, handholes, ground rods, where applicable a time clock, traffic signal post and foundation. The signal head may consist of one (1) or more signal sections mounted on the same object.

- 1) If the flashing beacon has a galvanized post that is knocked down, the Contractor will reset the galvanized steel flasher post, signal head and any other equipment attached to the post.
- 2) Time clock shall be checked.
- 3) Coordinate with school throughout the school year to adjust flashing schedule accordingly.

### **Item A-5 SOLAR FLASHING BEACON INSTALLATION - POST MOUNTED**

Maintain a signal head, flashing beacon low mount, flasher controller in a housing, conduit, handholes, ground rods, where applicable a time clock, where applicable a solar powered system (with batteries, electronic components, solar panels, etc.), traffic signal post and foundation. The signal head may consist of one (1) or more signal sections mounted on the same object.

- 1) The batteries shall be replaced at 75 percent of their life expectancy. When the batteries are replaced. The Contractor shall bill the private entity that paid for the installation (school district, City or Village) directly or as directed by the Engineer, if batteries are less than five years old.
- 2) If the flasher controller, charging system, or solar cell develop problems, the Contractor shall repair them and bill the private entity that paid for the installation (school district, City or Village) directly or as directed by the Engineer.
- 3) All batteries are to be tested under load yearly with a report of the results emailed to the Engineer.
- 4) If the flashing beacon has a galvanized post that is knocked down, the Contractor will reset the galvanized steel flasher post, post base, signal head and any other equipment attached to the post.
- 5) The batteries shall be included under this pay item and replaced every 5 years.



- 6) Coordinate with school throughout the school year to adjust flashing schedule accordingly.
- 7) Time clock shall be checked.
- 8) County own flashers will follow the above requirements.

#### **Item A-6 RECTANGULAR RAPID FLASHING BEACON SYSTEM**

Maintain signal heads, flashing beacons low mount, flasher controller in a housing, conduit, handholes, ground rods, pedestrian pushbutton detectors and associated signs, solar powered system (with batteries, electronic components, solar panels, etc.), traffic signal posts and foundations. The signal head may consist of one (1) or more signal sections mounted on the same object.

- 1) The batteries shall be replaced at 75 percent of their life expectancy. When the batteries are replaced. The Contractor shall bill the Village, City, School District or Park District for the installation directly or as directed by the Engineer, if batteries are less than five years old.
- 2) If the flasher controller, charging system, heads, pushbutton or solar cell develop problems, the Contractor shall repair or replace them and bill the Village, City, School District or Park District for the installation directly or as directed by the Engineer.
- 3) All batteries are to be tested under load yearly with a report of the results emailed to the Engineer.
- 4) If the flashing beacon post is knocked down, the Contractor will reset the flasher post, signal head and any other equipment attached to the post. If the flasher controller, charging system, heads, pushbutton or solar cell are damaged due to knocked down, the Contractor shall repair or replace them and bill the Village, City, School District or Park District for the installation directly or as directed by the Engineer.
- 5) The batteries shall be included under this pay item and replaced every 5 years and bill the Village, City, School District or Park District for the installation directly or as directed by the Engineer.

#### **Item A-7 SPEED RADAR SIGN INSTALLATION**

Maintain a LED speed radar sign installation, local controller including LED speed sign, wire accessories, conduit, electric cables, and service installation, where applicable a solar powered system (with batteries, electronic components, solar panels, etc.).

- 1) The batteries shall be replaced at 75 percent of their life expectancy. When the batteries are replaced. The Contractor shall bill the private entity that paid for the installation (school district, City or Village) directly or as directed by the Engineer, if batteries are less than five years old.
- 2) If the LED speed radar sign, charging system, or solar cell develop problems, the Contractor shall repair them and bill the private entity that paid for the installation (school district, City or Village) directly or as directed by the Engineer.
- 3) All batteries are to be tested under load yearly with a report of the results emailed to the Engineer.

- 4) If the LED speed radar sign has a galvanized post that is knocked down, the Contractor will reset the galvanized steel flasher post, signal head and any other equipment attached to the post.
- 5) The batteries shall be included under this pay item and replaced every 5 years.
- 6) Coordinate with school throughout the school year to adjust LED speed radar sign schedule accordingly.
- 7) Time clock shall be checked.
- 8) Clean sign face four times a year.
- 9) County own signs will follow the above requirements.

**Item A-8 ADVANCED RAILROAD WARNING SYSTEM**

Maintain an Advanced Railroad Warning System, complete. The system consists of all equipment controlled by one local traffic signal controller including illuminate sign, video detectors, light poles, posts, electric cables, conduits, handholes, ground rods, foundations and service installation. Verify and redefine detector zones every two weeks. Clean video detectors a minimum of four times a year, adjust camera as required and maintain detectors and controller as stated in Item A-1.

**Item A-9 CLOSED LOOP SYSTEM MONITORING**

Maintain the CCDOTH central display monitors and all computers used for field and office use and monitor the closed loop systems as described below:

- 1) The Contractor will, on a daily basis, monitor, review, and maintain the CCDOTH closed loop monitoring system. The Contractor shall use a computer system with licensed software for each brand of master controller (used in Cook County) to monitor the Cook County closed loop signal system. The Contractor shall provide weekly reports updating the status of the Closed Loop Monitoring System. The Contractor shall also provide licensed master software for all patrolmen laptop computers.

A copy of the Official CCDOTH Closed Loop Data Base electronic files shall be supplied to the Engineer at the Termination of this contract the data base shall also be digitally transferred to the next Maintenance Contractor at the termination of this contract.

- 2) The Contractor shall concurrently monitor all Closed Loop Traffic Control Systems maintained by him under this contract on a 24 hour per day, 7 days per week basis. The Contractors system monitoring functions shall include, but not be limited to, the reception of telephone calls from Closed Loop System Master Controllers and the storing, displaying, and acting upon any reported events, alarms, equipment failures, operational exceptions and programmed data collection. The Contractor shall have sufficient dedicated telephone lines, his own dedicated Close Loop Monitoring System(s) with appropriate software, Centralized Monitoring Systems and qualified electrical technicians to provide for the simultaneous monitoring of all closed-loop traffic control systems being maintained by him under this Contract.

- 3) The Contractor shall program all Closed Loop Systems, so that he will receive all system alarms, events, and messages on his Central Closed Loop Monitoring System(s). The Contractor shall respond to all alarms, events, and messages and provide the indicated response or corrective action within the appropriate time frame. The Contractors 24-hour Dispatch Center shall be equipped with the necessary equipment to receive all alarms, events, and messages as described above. Before the end of the first month of the contract, the Contractor shall submit a list of alarms, events, or messages that each brand of Closed-Loop System is programmed to send to the Contractors dispatch center for approval by the Engineer.
- 4) The Contractor shall maintain the integrity of the timings and programming information contained in the local controllers and the master controllers. The Contractor shall maintain each Closed Loop Traffic Control System in the mode for which it has been setup and programmed (i.e., Traffic Responsive (TRP), Time-of-Day (TODD), FREE, etc.). The Contractor shall maintain his own data base of all the local and master controller timings, settings and programming information including graphic displays for intersections and systems. This data base shall be kept by him, at his place of business, for his own use in the normal course of system maintenance. The Contractor's data base shall be the Official Cook County Closed Loop Data Base. This data base shall also include State and Municipal maintained Closed Loop Traffic Control Systems that are on Cook County maintained routes or connect into Cook County systems or Lake County system. The Contractor shall insure data base agreement by synchronizing the CCDOTH data base in Downtown Chicago office and the County monitoring Consultant with the Official Data Base kept by the Contractor. Monthly conference calls between the Contractor, the Engineer and the County monitoring Consultant are required.
- 5) The Contractor shall provide an Electronic Patrol of each master controller and its local controllers at least once every week. This Electronic Patrol shall be done in addition to any field patrols done as part of Routine Maintenance. The Electronic Patrol shall document that all equipment is working properly and the timings and programming in each system have not changed from their correct values.
- 6) In addition, this electronic patrol shall include, but not be limited to, system loop checks (failed, maximum presence, and no activity), local loop checks (phases on, recall, locked detectors), loops with system outputs (volume/occupancy checks), failed, Max presence, no activity, master controllers answering, local intersections on line (telemetry checks). The General Foreman shall review the report and forward any discrepancies to the patrolman for repair. A log showing the date of any discrepancies and date fixed shall be done by the General Foreman. The Contractor shall prepare a closed loop system status report and log once every week and system monitoring report every week which format and content required shall be approved by the Engineer and e-mail it to the Engineer and the CCDOTH monitoring Consultant. This status report shall document that all equipment is working properly and the timings and programming in each system have not changed from their correct values.
- 7) All changes to Local or Master Controller programming shall have prior approval of the Engineer. Minor temporary changes to alleviate some sporadic operational anomaly will be acceptable provided it is done by a qualified electrical technician, and reported to the Engineer as soon as practical. It is anticipated that major re-programming will only be brought about through a comprehensive traffic study, optimization of timing effort independent of the routine maintenance

portion of this maintenance contract. However, the Contractor may be required to effect (program) such timing changes in the closed-loop system masters and/or local controllers. The Contractor shall keep records of all changes to local and master controller data bases with the dates the changes were implemented and who authorized the changes.

- 8) The Contractor shall maintain a Closed-Loop System Operational Log accumulating in it the day to day operational information for all Closed Loop Traffic Control Systems. This log shall contain a listing of all program and mode changes that have occurred in each system and any anomalies to normal operation. The Contractor shall monitor this log for any persistent and recurring deviation from normal system operating modes and he shall report them to the Engineer as soon as is practical. In particular, repeated cycle failures, loss of coordination, excessive pre-emption or conditions that dictate manually commanded free operation shall be reported. In addition, the Contractor shall verify (at least once a week) that program changes in traffic responsive Closed Loop Systems are occurring at normal times. This will insure that these systems are not oscillating between programs. This check will be considered part of the operational log. The operational log shall be maintained by the Contractor for the duration of this contract. The last 6 months of this log shall be available for inspection at any time and copies shall be provided the Engineer upon request the format content, and method used to keep the Operational Log shall be approved by the Engineer.
- 9) The Contractor shall maintain a Closed-loop System Failure Log for all Closed Loop system alarms, events, anomalies, and reported failures. It shall further contain the date, time of occurrence, the corrective action taken, a notation as to the cause, and a record thereon as to the repair time required to correct the malfunction. The System Failure Log shall be maintained by the Contractor for the duration of this contract. The last 6 months of this log shall be available at any time for inspection by the Engineer and copies shall be provided to the Engineer upon request.
- 10) The Contractor shall prepare a System Monitoring Report every week. Copies of the System Monitoring Report shall be forwarded to the Engineer and the County Monitoring Consultant every week. The System Monitoring Report shall describe the status of each closed loop system being maintained by the Contractor under this Contract and a summary of failures and alarms occurring within each system during the week reporting period. This report shall summarize the information contained in the Closed-loop Operations Log and the Closed Loop Failures Log. The System Monitoring Report shall in addition highlight any equipment failures that were not attended to, repaired or brought back into operation within the required time frame specified in the Repair Time Table and the reason for failing to meet the specified response/repair time schedule. The report format shall be approved by the Engineer.
- 11) The Contractor shall not make any timing or programming changes on any Closed Loop Systems or its components except through qualified electrical technicians.
- 12) The Contractor will reassign system detectors in an existing Closed Loop System as directed by the Engineer. This may include rewiring system detectors to different inputs into the local controller, installing diodes to provide a second channel of detector output to use an existing local detector as actual system/local detector, changing system detector assignments, wiring system detectors directly to a master controller or rewiring system detectors to different inputs in the master controller. Any additional amplifiers or dual output amplifiers that are necessary will be paid

separately, otherwise all remaining materials and labor required to complete this work shall be included in this item.

- 13) Where applicable, to insure proper system operation and alarm reporting should the master controller ever go into backup, the Contractor shall maintain a location specific backup program in the backup PROMS of each Master Controller. The backup program in PROM shall duplicate the normal controllers programming as closely as possible. The Contractor shall be responsible for maintaining the backup programming and incorporating appropriate changes whenever normal programming changes are made at a Master or when directed to do so by the Engineer. Should a Master Controller ever need to be removed or replaced, the Contractor shall make the appropriate backup PROM switches with the replacement controller.
- 14) One month prior to the contract start date, the Contractor shall supply to the Engineer for approval, his proposal for the Closed Loop Monitoring System to be located at his place of business. The proposal shall include a detailed description of the proposed Closed Loop Monitoring System and a timetable for the installation of the system and components.
- 15) The Contractor shall assist the Engineer in changing modem baud rates.
- 16) The first year of this Contract, the Contractor shall also purchase one notebook field monitor computer which shall become property of the CCDOTH. This will replace an existing CCDOTH notebook monitor computer which will become the property of the Contractor. The Contractor shall be responsible for transferring all of the existing files and programs on the existing CCDOTH notebook monitor computer to the one provided by the Contractor. This includes all the standard pre-installed software plus Norton System Works (any costs associated with keeping Norton System Utility Completely active), Lotus SmartSuite Professional edition, Microsoft Office Professional (Latest edition of each), Aries (Latest edition), and SYNCHRO (Latest edition). Prior to purchasing this notebook computer, the Contractor shall contact the Engineer to ensure that the following make, model, and options are still valid and meet the requirements of this specification: HP ZBook 17 G2 Mobile Workstation with 2.5 Ghz, Core i7 Processor 8 GB RAM, 1 TB hard drive, 17.3" Full HD, DVD SuperMulti, 6 USB ports, Windows 7 professional Edition Operating System, internal modem, Econolite external modem extra high capacity battery, Built in 3G HotSpot including monthly service, Mobility auto adapter, connection cables between notebook and Econolite or Eagle controllers with label on each cable.

All of the above hardware and software are to be installed and tested before it is delivered and must be operational to the satisfaction of the Engineer before the end of January. Thereafter the Contractor will pay a penalty of two hundred and fifty (250) dollars a day for the duration of the Contract or until all hardware and software is complete and accepted by the Engineer.

- 17) The Contractor shall maintain the county monitoring systems which consist of: a local area network system (LAN), various laptops and desk top computers, video monitoring system, printers, additional equipment added during the Contract, and all peripheral equipment belonging to the above units. All costs to maintain daily communication between the Contractor's LAN and the County's LAN and all monitoring hardware and software will be included under routine maintenance.

- 18) The Contractor shall assist consultants who are preparing Signal Coordination and Timing (SCAT) reports for the Department. This assistance shall be limited to a one-time download by the consultant of system timings with a qualified Contractor representative at the system location at the time of the download. The Contractor shall assist consultants in changing controller addresses, if the change is approved by the County. Occasional operational questions by the consultants may also need to be answered by the Contractor as well as any required correction of items related to the maintenance of systems. In instances beyond these such as multiple requests for assistance in downloading system timing, programming errors which result in Contractor maintenance intervention, or multiple requests for assistance in programming, the Contractor will be allowed to bill the consultant. An itemized bill, including the date and system number, as well as the reason for the bill shall be submitted to the Engineer in conjunction with the actual bill being sent to the consultant.

### **TRAFFIC SIGNAL REGULAR WORK PAY ITEMS**

#### **Item AX PAINT TRAFFIC SIGNAL INSTALLATIONS**

Under this item, for unit price per intersection as shown in the Schedule of Prices, and as directed by the Engineer in writing, the Contractor shall paint all exposed surfaces of the various components of a traffic signal installation, temporary traffic signal installation, traffic signal controller cabinet and flashing beacon installation and shall conform to Article 851 of the Standard Specifications.

In addition to the requirements listed above under PAINTING, the date of painting shall be stenciled in one inch numerals at a point near the base of the controller cabinet or as otherwise directed by the Engineer and as listed in Article II Section 11.

#### **Item AX-1 PAINT TRAFFIC SIGNAL INSTALLATION**

#### **Item AX-2 PAINT FLASHING BEACON INSTALLATION**

#### **Item AX-3 PAINT TEMPORARY TRAFFIC SIGNAL INSTALLATION**

#### **Item AX-4 PAINT TRAFFIC SIGNAL CONTROLLER CABINET**

#### **Item AX-5 PAINT TRAFFIC SIGNAL INSTALLATION BACKPLATES**

#### **Item AY TEMPORARY TRAFFIC SIGNAL INSTALLATION:**

Under this item, for a unit price per installation, as shown in the Schedule of Prices, and when directed by the Engineer in writing, the Contractor shall either install or remove a temporary traffic signal installation.

#### **Item AY-1 TEMPORARY TRAFFIC SIGNAL INSTALLATION TYPE - 1:**

- Plans for the temporary traffic signal installation shall be prepared by the Cook County Department of Transportation and Highways.

- Cook County Department of Transportation and Highways traffic signal equipment shall be utilized. All cable, wire, anchoring materials, mounting brackets and service installation shall be furnished by the Contractor.

The installation of the temporary traffic signal installation shall include the Contractor contacting Commonwealth Edison Company for a service location and furnishing and installing a service installation.

**Item AY-2 TEMPORARY TRAFFIC SIGNAL INSTALLATION TYPE - 2:**

- Plans for the temporary traffic signal installation shall be prepared by the Cook County Department of Transportation and Highways.
- The Contractor shall furnish and install a complete temporary traffic signal installation which when completed and accepted shall become the Property of Cook County. Minimum size of cabinet shall be Type IV aluminum, and controller furnished shall be suitable for eight (8) phase operation, even if fewer phases are being used. The Control cabinet shall be wired and furnished with a sixteen (16) position load bay. The Controller and cabinet to be NEMA TS2 Type 1 and meet all requirements of items AZ-2 or AZ-3.
- The installation of the temporary traffic signal installation shall include the Contractor contacting Commonwealth Edison Company for a service location and furnishing and installing a service installation

**Item AY-3 REMOVE TEMPORARY TRAFFIC SIGNAL INSTALLATION**

That portion of a temporary traffic signal installation that is the property of Cook County shall be delivered to the County and listed on the spare parts inventory. This shall include poles, traffic signal and pedestrian heads along with all mounting hardware and all control equipment. All wire, cable, anchoring devices, and service shall become the property of the Contractor.

**ITEM AZ REPLACEMENT AND/OR INSTALLATION OF TRAFFIC SIGNAL EQUIPMENT**

Under this item, for unit price per installation as shown in the Schedule of Prices and when directed by the Engineer, shall furnish all materials, equipment, and labor to perform the work as specified. All materials of work not expressly specified but necessary for the proper completion in a neat, workmanlike manner shall be included under the unit bid price and shall use the following Standards: 720001-01, 720016-03, 805001-01, 814001-03, 814006-02, 857001-01, 857006-01, 862001-01, 873001-02, 876001-03, 877001-05, 877002-02, 877006-04, 877011-05, 877012-02, 878001-10, 880001-01, 880006-01, 886001-01, County Traffic Signal Work Special Provisions, Standard Specifications for Road and Bridge Construction and IDOT District One STANDARD TRAFFIC SIGNAL DESIGN DETAILS or latest revision of each except as stated in each following pay items.

**The equipment shall be of a manufacturer that is approved by this Department. The manufacturer shall have a representative and shop located in the six (6) county Chicago area.**

All iron and steel products, which are to be incorporated into work shall be domestically manufactured or produced and fabricated. The contractor shall obtain from the iron or steel producer and/or fabricator, in addition to the mill analysis, a certification that all iron or steel materials meet these domestic source requirements.

- Item AZ-1 FULL ACTUATED CONTROLLER, IN TYPE III CABINET
- Item AZ-2 FULL ACTUATED CONTROLLER, IN TYPE IV CABINET
- Item AZ-3 FULL ACTUATED CONTROLLER, IN TYPE V CABINET
- Item AZ-4 FULL ACTUATED CONTROLLER, IN TYPE IV CABINET - RAILROAD
- Item AZ-5 FULL ACTUATED CONTROLLER, IN EXISTING CABINET
- Item AZ-6 FLASHER CONTROLLER WITHOUT CABINET, SOLID STATE - NEMA
- Item AZ-7 TRAFFIC SIGNAL CABINET LOAD SWITCH
- Item AZ-8 INDUCTIVE LOOP DETECTOR

The furnishing and installation of a Traffic Actuated Controller and an Inductive Loop Detector shall meet the requirements of Section 857 and 885 of the Standard Specifications, and the Cook County Special Provisions except as revised with this Special Provision.

Equipment shall be NEMA TS 2 TYPE I Econolite ASC/2S-1000, ASC/3, Eagle/Siemens M41, or M50 Series Controller unit unless otherwise approved by the Engineer. At the time this item is authorized, the Engineer may indicate what brand of equipment is to be supplied for that authorization. Removal of the existing controller and related items, if required, shall be considered included in this item. The Contractor shall deliver the existing equipment to the County Stock per the requirements of this Contract.

When installing the new controller into an existing system, the new controller shall contain all necessary telemetry modules, modems, circuit panels and wiring harnesses. All items necessary to enable the new controller to communicate/operate within an existing closed loop system shall be included in this pay item.

This work will be paid for at the contract unit price EACH which price shall be payment in full for furnishing and installing the inductive loop detector complete with all harnesses and connections for proper operation, and/or for furnishing and installing the controller complete, including conflict monitor, load switches, flashers, flash transfer relays, etc. in a new cabinet or an existing cabinet as specified, with the necessary connections for proper operation.

- Item AZ-9 CABINET FOR EXISTING TRAFFIC SIGNAL CONTROLLER, TYPE III
- Item AZ-10 CABINET FOR EXISTING TRAFFIC SIGNAL CONTROLLER, TYPE IV
- Item AZ-11 CABINET FOR EXISTING TRAFFIC SIGNAL CONTROLLER, TYPE V
- Item AZ-12 INSTALL EXISTING TRAFFIC SIGNAL CONTROLLER CABINET
- Item AZ-13 INSTALL EXISTING TRAFFIC SIGNAL CONTROLLER



The furnishing and/or installation of a Traffic Signal Controller Cabinet and installation of an existing traffic signal controller shall meet the requirements of Section 857 and 863 of the Standard Specifications and the Cook County Special Provisions except as follows:

Included in the above pay items are the replacement and/or addition of controller harnesses, conflict monitor harnesses, and detector harnesses as required to install the existing controller and/or cabinet at a location directed by the Engineer. New cabinets shall be furnished with panel, terminal facilities, conflict monitor, load switches, and flasher relays complete with necessary connections for proper operations. The Contractor shall provide five (5) copies (11" x 17") of the cabinet wiring diagrams for the new cabinet location. Cable logs must be furnished indicating the number of each cable, the field termination point, and all cables must be tagged with an I.D. number corresponding with the cable log. The Contractor shall transport the proposed equipment to the intersection and transport the existing equipment to County Stock and this shall be included in this pay item.

This work will be paid for at the contract unit price **EACH** which price shall be payment in full for furnishing and/or installing the controller and/or controller cabinet complete with the necessary connections for proper operation.

**Item AZ-14 MODIFY EXISTING TRAFFIC SIGNAL CONTROLLER, PER PHASE**

This item shall conform to Section 895 of the Standard Specifications and the Cook County Special Provisions except as follows:

This pay item shall consist of modifying an existing traffic signal controller, cabinet and all necessary associated components to add a phase, phase overlap, or pedestrian movement to the existing traffic signal. This item shall also include furnishing a new load switch, cabinet wiring, UPS wiring reprogramming the controller, and any other necessary components to complete the modification at a location as directed by the Engineer.

This work will be paid for at the contract unit price **EACH**, per phase which price shall be payment in full for modifying the controller and cabinet complete with the necessary connections for proper operation.

**Item AZ-15 UPDATED PROM SET**

This item shall consist of installing a new PROM or set of PROMs of the latest version of software/firmware license in an existing traffic signal local or master controller. At locations that contain coordination modules, all PROMs in the controller, telemetry module, and coordination module must be of the same version and revision. New system interface board shall be included in this item.

This work will be paid for at the contract unit price **EACH** for UPDATED PROM SET which price shall be payment in full for all work as described herein and as directed by the Engineer.

**Item AZ-16 MASTER CONTROLLER**

The installation consist of a master controller shall meet Section 860 of the Specifications and the Cook County Special Provisions except as revised with this Special Provision.

Only Econolite or Seimens/Eagle NEMA TS2 type 1 closed loop systems. The master controller may be installed in an existing controller cabinet replacing an existing master controller, of the same or different manufacturer, or at a new location. In all cases the Contractor shall furnish all necessary harnesses, relays, modems, transceivers, and telephone jack to place the proposed master controller in operation. Locations where the master controller is installed within an existing system, without the local traffic signal controllers being replaced, shall be of the same brand as the local controllers. At the time this item is authorized, the Engineer will indicate which manufacturer's equipment is to be supplied for that authorization.

At the completion of installing the proposed master controller the Contractor shall, if applicable, remove the existing master controller, harnesses, relays, modems, and transceivers that are not used and deliver them to County Stock per the requirements of this Contract.

The Contractor shall arrange to install a standard voice-grade dial-up telephone line to the master controller. This shall be accomplished through the following process:

- The Cabinet shall be provided with an outdoor network interface for termination of telephone service. It shall be mounted to the inside of the cabinet in a location suitable to provide access for termination of the telephone service at a later date.
- Full duplex communication between the master and its local controllers is recommended, but at this time not required. The data rate shall be 1200 baud minimum and shall be capable of speeds to 38,400 or above as technology allows. The controller, when installed in an Ethernet topology, may operate non-serial communications.
- The cabinet shall be equipped with a 9600 baud, auto dial/auto answer modem. It shall be a US robotics 56K baud rate or equal.
- As soon as practical or within one week after the contract has been awarded, the Contractor shall contact (via phone) the CCDOTH Design Engineer at (312) 603-1730 to request a phone hook-up.
- A follow-up email transmittal to the CCDOTH Design Engineer at rich.jeziorny@cookcountyil.gov with all required information pertaining to the phone installation is required from the Contractor as soon as possible or within one week after the initial request has been made. The required information to be supplied on the email shall include (but not limited to): A street address for the new traffic signal controller (or nearby address); What type of telephone service is needed, the name and number of the Contractor's employee for the telephone company to contact regarding site work and questions. The phone line installation will then be requested from the County Central Services Office.
- The usual time frame for the activation of the phone line is 8 weeks after the CCDOTH Design Engineer has received the Contractor supplied email. It is, therefore, imperative that the phone line conduit and pull-string be installed by the Contractor in anticipation of this time frame. On jobs which include roadway widening in which the conduit cannot be installed until this widening is completed, the Contractor will be allowed to delay the phone line installation request until a point in time that is 8 weeks prior to the anticipated completion of the traffic signal work. The contractor shall provide the

CCDOTH Design Engineer with an expected installation date considering the 6-8 week processing time.

- The telephone line shall be installed and activated one month before the system final inspection.
- All costs associated with the telephone line installation and activation (not including the contract specified conduit installation between the point of telephone service and the traffic signal controller cabinet) shall be paid for by the CCDOTH Central Services Office (i.e., this will be a CCDOTH phone number not a Contractor phone number).

This work shall be paid for at the contract unit price **EACH** which price shall be payment in full for furnishing and installing the MASTER CONTROLLER complete with necessary connections for proper operation.

**Item AZ-17 SYSTEM PROGRAMMING**

This item shall consist of the Contractor working with a County approved SCAT consultant, who has previous experience in optimizing closed loop traffic signal systems for the Cook County Department of Transportation and Highways, to develop a time of day and/or traffic responsive program for a time base, Centralized Monitoring System and/or Closed Loop Signal system. All traffic counts, programming and field time needed to implement a complete working system is included in this pay item. This work shall conform to the CCDOTH Special Provision for Re-optimize Traffic Signal System Level II. The Engineer shall approve the consultant being used.

This work will be paid for at the contract unit price **EACH** which price shall be payment in full for counting, developing and implementing the timing program on a per intersection basis.

**Item AZ-18 CONTROLLER DATA CONVERSION**

This item shall consist of the Contractor converting the current controller/master data base to a NTCIP version and verifying all data has been transferred properly. All additional cabling and interface components shall be included to make a complete operating intersection. This shall include converting Time of Day (TOD), Time base, and Traffic Responsive Program (TRP) data.

This work will be paid for at the contract unit price **EACH** which price shall be payment in full for controller data conversion at an existing controller/master and all work as described herein and as directed by the Engineer.

**Item AZ-19 TRANSCEIVER, FIBER OPTIC**

The furnishing and installation of a transceiver shall meet Section 859 and 864 of the Standard Specifications and the Cook County Special Provisions.

This work will be paid for at the contract unit price **EACH** which price shall be payment in full for furnishing and installing the transceiver or the fiber optic transceiver and making all electrical connections.

**Item AZ-20 DIGITAL TIME SWITCH**

This item shall conform to Section 861 of the Standard Specifications.

This work will be paid for at the contract unit price **EACH** which price shall be payment in full for furnishing and installing the digital time switch complete in place.

**Item AZ-21 CONFLICT MONITOR**

This item shall conform to Section 857 of the Standard Specifications and the Cook County Special Provisions. The conflict monitor shall be a sixteen (16) channel model. This item includes all labor and harnesses required to install an EDI Model MMU-16 NEMA type conflict/voltage monitor with event logging or an approved equal in an existing traffic signal controller cabinet as directed by the Engineer. Remove all existing conflict monitor/ MMU harnesses not reused and the existing conflict monitor/ MMU from the cabinet and deliver them to the County stock storage location.

This work will be paid for at the contract unit price **EACH** which price shall be payment in full for furnishing and installing the CONFLICT MONITOR complete in place.

**Item AZ-22 POLICE DOOR MANUAL CONTROL**

This item shall conform to Section 857 of the Standard Specifications. A push button switch with plug in socket shall be wired into the police door to advance the phasing of the controller. This item shall include all parts, labor and wiring to install this device. If requested by the Engineer this work shall include police instructions and training how to properly use the device.

This work shall be paid for at the contract unit price **EACH** for POLICE DOOR MANUAL CONTROL as described above, which price shall be payment in full for a working manual control as described-here in and as directed by the Engineer.

**Item AZ-23 LIGHT DETECTOR AMPLIFIER**

**Item AZ-24 LIGHT DETECTOR**

**Item AZ-25 CONFIRMATION BEACON SYSTEM, LED**

**Item AZ-26 RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, PHASING UNIT**

**Item AZ-27 RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT**

**Item AZ-28 LIGHT TRANSMITTER**

**Item AZ-29 ELECTRIC CABLE IN CONDUIT, NO. 20 3C, TWISTED AND SHIELDED**

The installation of an Emergency Vehicle Priority System shall meet Section 887 of the Standard Specifications, and the Cook County Special Provisions, except as revised with this Special Provision.

When relocating an existing unit, the emergency vehicle system is not to be inoperative for more than 48 hours and the Contractor must notify the Municipality or Fire Protection District 72 hours prior to the disconnect of the equipment.

This work will be paid for at the contract unit price **EACH** which price shall be payment in full for furnishing and installing or relocating the emergency vehicle equipment and making all electrical connections.

The cable will be paid for at the contract unit price per **FOOT** which price shall be payment in full for furnishing and installing the cable and making all electrical connections. The electric cable shall be shielded and have three (3) stranded conductors colored blue, orange, and yellow with a stranded tinned copper drain wire. The cable shall meet the requirements of the manufacturer of the Emergency Vehicle Priority System Equipment.

**Item AZ-30 VIDEO DETECTION SYSTEM, COMPLETE INTERSECTION**

**Item AZ-31 VIDEO DETECTION SYSTEM (SINGLE CAMERA/PROCESSOR)**

This specification sets forth the minimum requirements for a system that monitors vehicles on a roadway via processing of video images and provides detector outputs to a traffic controller or similar device. This work shall consist of furnishing and installing an Autoscope, Terra or approved equal video vehicle detection system including all necessary hardware, software, cable and accessories necessary to complete the installation in accordance with the manufacturer's specifications and the Cook County Special Provisions except as follows:

The vision/camera sensors shall be installed on an existing traffic signal mast arm pole, luminaire arm or other structure. Pole extensions or other video sensing equipment mounting devices and hardware as directed by the Engineer shall be included in this item.

All holes drilled into signal poles, mast arms, or posts shall require rubber grommets to prevent chafing of wires.

To protect the video detection cameras from electrical surges, the video detection chassis shall be connected to the cabinet ground rod with a #10 1/C green wire.

The supplier of the video detection system shall supervise the installation and testing of the video detection system. A factory certified representative from the supplier shall be on-site during installation.

The video detection system shall be warranted by its supplier for a minimum of two (2) years with ongoing software support by the supplier and no-cost video sensor and supervisor software.

This work shall be paid at the contract unit price **EACH** for video detection system, complete intersection or video detection system (single camera/processor), which price shall include the Machine Vision Processor/Image Sensor, Mini Hub, Video Monitor, Phone Modem, Cabling and all necessary hardware

and accessories complete, required for a proper operation of the Video Detection System. No additional compensation shall be allowed for cable to the Image Sensor.

**Item AZ-32 DETECTOR LOOP, TYPE I**

**Item AZ-33 DETECTOR LOOP, PRE-FORMED**

This work shall consist of furnishing and installing Detector Loop in accordance with the requirements of Section 886 of the Standard Specifications and the Cook County Special Provisions.

This work will be paid for at the contract unit price per **FOOT** which price shall be payment in full and for furnishing, installing and testing the Detector Loop complete in place. Type I detector loop shall be measured along the sawed slot in the pavement containing the loop and lead-in, rather than the actual length of the wire. The preformed loop shall be measured from the center of the detector handhole or the center of a wood pole on temporary traffic signals to the loop dive in a straight line plus the distance along the saw cut which contains the actual preformed loop. The lead-in wire, including all necessary connections for proper operations, from the edge of pavement to the handhole, shall be included in the price of the detector loop. coilable non-metallic conduit, trench and backfill, and drilling of pavement or handholes shall be included in detector loop quantities.

**Item AZ-34 WIRELESS DETECTION SYSTEM, COMPLETE INTERSECTION**

**Description:**

This specification sets forth the minimum requirements for a wireless vehicle detection system that uses pavement-mounted magnetic sensors to detect the presence and movement of vehicles. This work shall consist of furnishing and installing a Sensys or approved equal wireless vehicle detection system including all necessary hardware, cable and accessories as shown on the plans and required to provide a fully operational system.

The system shall consist of a minimum of thirty (30) flush mounting pavement detector sensors, two (2) access points, two (2) repeaters and associated contact closure cards. The system shall be able to detect either approaching or receding vehicles in multiple traffic lanes. Extension poles for mounting wireless access points and repeaters shall meet the requirements of Standard Specification section 830 and be included in this item.

**General:**

The Detector Sensing System shall deploy a design that supports a minimum of eight sensor units being controlled by a radio repeater and a design that incorporates repeaters and a single receiver that supports a cumulative sum of eighty (80) separate detector sensors concurrently at any traffic signalized intersection. The design shall structure data transmissions in a manner as to be non-interfering with other sensors installed. This design shall include a noninterference technique that allows radio link from the detector sensor to the repeater/receiver and a radio link from each repeater to the receiver base at the traffic controller. Repeater devices shall deploy a battery operation or be provided with a battery with solar

recharging installation. Batteries shall be rated for a minimum of two (2) years. Each repeater device or receiver device shall be capable of receiving up to eight (8) embedded detector sensors at a range of up to 150 feet from the repeater to the embedded detector sensor.

Epoxy fill for the roadway based on the pavement surface where the detectors are being installed with appropriate temperature ratings shall be applied.

Detector cards for traffic control detector rack positions shall be furnished. Each detector card shall be a four channel device and be capable of providing detector ground true input to the traffic controller as well as linking the detector data to a remote Ethernet port for remote monitoring, concurrently. Traffic controller detector sensor card units shall be compatible with TS-1 terminal facility terminations, unless otherwise specified on the Plans. The detector cards and Expansion Modules shall provide one detector input to the traffic controller for each detector sensor installed. Modification to the existing detector racks to accommodate the new detector may be necessary. Repeater sites are required for all embedded sensors installed in excess of 150 feet from a receiver or repeater. An additional repeater for any repeater is required for distances greater than 900 feet from a repeater or receiver and/or does not provide sufficient radio propagation to properly support a radio link – repeater to repeater or repeater to receiver, which could occur with non-line of sight locations.

A factory representative is required at turn-on to support the radio installations and to implement the radio and device programming.

#### **Detector Sensors:**

The flush mounting pavement sensors shall be of the magnetic field (magnetometer) sensing technology capable of detecting and reporting volume count, speed, occupancy and headway, as a minimum. The sensor section of the detector shall be embedded in the roadway pavement and shall utilize a radio transmitter link for the detector to a receiver radio being provided to the traffic controller and/or central monitoring server. The detector sensor embedded in the pavement shall not exceed a four (4) inch diameter and a depth of two (2) inches and shall be installed in a four (4) inch diameter, two and a half (2.5) inch deep cored hole in the pavement, centered in the travel lane. Detector sensors, embedded at a distance greater than one-hundred and fifty (150) feet from the receiver unit installed at the traffic controller cabinet, shall have a repeater installed to relay the sensor data to the receiver. The embedded detector sensor shall be battery operated with a battery design rated for ten (10) year life in this application.

Each detector sensor unit shall self-calibrate and self-configure their electronics for proper detection application. Each sensor unit shall be provided with flash memory upgrade capability to allow upgraded operation or safety enhancements to be "flashed" into local memory without removing the device for the pavement.

#### **Radio Transceivers:**

Radio transceivers shall utilize devices that are compliant with Institute of Electrical and Electronics Engineers (IEEE) 802.15.4 standards and are able to operate on any of the allocated 16 channels of the 2.4 to 2.48 GHz spectrum. The factory support shall include the programming of the embedded sensor time slots and shall provide a written copy of the final design to the Traffic Engineer plus one copy for the traffic controller cabinet. One software set of device programming (GUI), if other than standard WEB Browser via SNMP protocol, shall be provided for each intersection where devices are installed. The factory

representative shall certify proper installation of the devices, the radio links, device settings and the traffic controller detector assignments. The factory representative shall provide an on-site computer and shall link to the Access Box for all programming. The GUI software shall provide real time management and monitoring of the Detector Sensing System as well as the Event Processing Software. One copy of the Event Processing Software shall be provided.

This work shall be paid at the contract unit price **EACH** for WIRELESS DETECTION SYSTEM, COMPLETE INTERSECTION which price shall be payment in full for all work as described herein and as directed by the Engineer.

**Item AZ-35 WIRELESS DETECTION SYSTEM, SINGLE APPROACH**

**Description:**

This item shall conform with the specification for Wireless Detection System, Complete Intersection except as revised herein.

The system shall consist of a minimum of twelve (12) flush mounting pavement detector sensors, one (1) access point, one (1) repeater and associated contact closure cards for a single intersection approach with multiple lanes.

This work shall be paid at the contract unit price **EACH** for WIRELESS DETECTION SYSTEM, SINGLE APPROACH which price shall be payment in full for all work as described herein and as directed by the Engineer.

**Item AZ-36 RADAR PRESENCE DETECTOR**

This work shall consist of furnishing and installing a radar presence detector (RPD) as specified and/or as shown on the plan.

The RPD sensor outputs shall present real-time presence data in four (4) lanes, have channel output extend and delay functionality, mitigate detections from wrong way or cross traffic, and have fail safe mode capabilities for contact closure outputs if communication is lost.

The RPD shall work under all weather conditions, including rain, freezing rain, snow, wind, dust, fog and changes in temperature and light. The RPD shall work in an ambient temperature range of -40 to 85 degrees Celsius.

The coverage of the sensor beam shall be taken into account for sensor setup and configuration. A setup and configuration tool provided by the vendor which depicts the sensor beam coverage on the road shall be utilized. Measurement lines for statistical data and detection zones for event reports shall be defined in the beam coverage. The RPD shall provide means to store configuration parameters.



Once the RPD is configured, it shall not need reconfiguration to maintain performance, unless the roadway configuration or the application requirements change.

The RPD shall work in a forward firing manner looking down the road with an azimuth of -15 to 15 degrees towards the road. The azimuth and the elevation angle shall be selected to achieve best coverage of the area of interest. RPD manufacturer shall provide installation recommendations.

The RPD shall provide multiple frequency channels to insure interference free operation of multiple RPD's close to each other. The RPD shall be programmed to operate in an interference free channel.

The RPD shall provide at least a RD-485 half duplex interface. It shall provide interoperability with third party communication modules to ensure easy integration into an ethernet infrastructure. Several interface options and modules shall be available. The RPD shall communicate over RS-485 half duplex with a baud rate of 115kbps or higher.

The RPD shall be provided with a minimum of one interface card for up to four sensors. The card shall have SDLC communications, 16 LED indications, and a single RJ45 connection for Ethernet communications to sensors.

The RPD shall include setup and configuration software. The software at a minimum shall include configuration and alignment, configuration of lanes, configuration of measurement lines, configuration of trigger points for relay control, configuration of sensor networks, display of objects, display of statistics data, display of relay status, display of background image and integration with standard video device.

The setup and configuration software shall run on Window Vista/ 7 system.

The RPD shall be able to be updated in the field.

The RPD shall have a field of view with at least 20 degrees in order to cover 4 lanes. The detection range shall be 400 feet or better. The detector shall be able to classify trucks, cars, bicycles and pedestrians. The RPD shall be able to detect oncoming and outgoing traffic simultaneously.

The RPD shall be mounted directly onto a mounting assembly fastened to a pole or overhead mast arm. The mounting hardware shall provide the necessary degrees of rotation in all directions. If extension mounting assembly is needed, it shall be included in this item.

The RPD shall be warrantied, free from material and workmanship defects for a period of two years from the final inspection.

This work will be paid for at the contract unit price EACH for RADAR PRESENCE DETECTOR which price will be payment in full for furnishing, installing and setting up the Radar Presence Detector with necessary connections, cables and programming for proper operation.

The cable will be paid for at the contract unit price per FOOT for ELECTRIC CABLE, RADAR PRESENCE DETECTOR, which price will be payment in full for furnishing and installing the detector cable as specified herein or as required by the manufacturer, with all necessary connections for proper operation.

**Item AZ-37 WIRELESS INTERCONNECT SYSTEM**

**Description:**

The radio interconnect system shall be compatible with centralized system, Eagle/Seimens or Econolite controller closed loop systems. This item shall include all materials, labor and testing to provide the completely operational closed loop system between two (2) intersections as shown on the plans. The radio interconnect system shall include the following components:

- a Rack or Shelf Mounted RS-232 Frequency Hopping Spread Spectrum (FHSS) Radio
- b Software for Radio Configuration (Configure Frequency and Hopping Patterns)
- c Antennas (Omni Directional or Yagi Directional or Disk Directional)
- d Antenna Cables, LMR400, Low Loss. Max. 100-ft from controller cabinet to antenna
- e Brackets, Mounting Hardware, and Accessories Required for Installation
- f RS232 Data Cable for Connection from the radio to the local or master controller
- g All other components required for a fully functional radio interconnect system

All controller cabinet modifications and other modifications to existing equipment that are required for the installation of the radio interconnect system components shall be included in this item.

The radio interconnect system may operate at 900Mhz (902-928) or 2.4 Ghz depending on the results of a site survey. The telemetry shall have an acceptable rate of transmission errors, time outs, etc. comparable to that of a hardwire system.

The proposed master controller and telemetry module shall be configured for use with the radio interconnect at a minimum rate of 9600 baud.

The radio interconnect system shall include all other components required for a complete and fully functional telemetry system and shall be installed in accordance to the manufacturers recommendations.

The following radio equipment is currently approved for use in Region One/District One: Encon Model 5100 and Intuicom Communicator II.

This work shall be paid at the contract unit price **EACH** for WIRELESS INTERCONNECT SYSTEM which price shall be payment in full for all work as described herein and as directed by the Engineer.

**Item AZ-38 INSTALL TRAFFIC SIGNAL SECTION**

**Item AZ-39 INSTALL TRAFFIC SIGNAL LENS**

**Item AZ-40 OPTICALLY PROGRAMMED SIGNAL HEAD,LED, 1-FACE, 3-SECTION**

**Item AZ-41 OPTICALLY PROGRAMMED SIGNAL HEAD, LED, 1-FACE, 4-SECTION**

**Item AZ-42 OPTICALLY PROGRAMMED SIGNAL HEAD, LED,1-FACE, 5-SECTION**

**Item AZ-43 SIGNAL HEAD, LED, 1-FACE, 1-SECTION**

**Item AZ-44 SIGNAL HEAD, LED, 1-FACE, 3-SECTION**

- Item AZ-45 SIGNAL HEAD, LED, 1-FACE, 4-SECTION
- Item AZ-46 SIGNAL HEAD, LED, 1-FACE, 5-SECTION
- Item AZ-47 PEDESTRIAN SIGNAL HEAD, LED, 1-FACE
- Item AZ-48 SIGNAL HEAD, LED, 1-FACE, 1-SECTION, RETROFIT
- Item AZ-49 SIGNAL HEAD, LED, 1-FACE, 3-SECTION, RETROFIT
- Item AZ-50 SIGNAL HEAD, LED, 1-FACE, 4-SECTION, RETROFIT
- Item AZ-51 SIGNAL HEAD, LED, 1-FACE, 5-SECTION, RETROFIT
- Item AZ-52 PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, RETROFIT
- Item AZ-53 CONFIRMATION BEACON, RETROFIT

The installation of a signal head, optically programmed signal head and pedestrian signal head shall meet the applicable requirements of Sections 880 and 881 of the Standard Specifications and the Cook County Special Provisions., except as follows:

All signal and pedestrian heads shall provide 12" (300 mm) displays with glossy yellow or black polycarbonate housings. All head housings shall be the same color (yellow or black) at the intersection. For new signalized intersections and existing signalized intersections where all signal and/or pedestrian heads are being replaced, the proposed head housings shall be black. Where only selected heads are being replaced, the proposed head housing color (yellow or black) shall match existing head housings. Connecting hardware and mounting brackets shall be polycarbonate (black) or galvanized. A corrosive resistant anti-seize lubricant shall be applied to all metallic mounting bracket joints, and shall be visible to the inspector at the signal turn-on. Post top mounting collars are required on all posts, and shall be constructed of the same material as the brackets. The terminal block in the signal head shall have an empty terminal between the red and amber connection.

All connecting hardware and mounting brackets shall be of the inverted post top mounting (horizontal post top) or with post top mounting collars, with black polycarbonate or galvanized brackets. **Aluminum mounting hardware will not be allowed.** All metal to metal joints to have anti-seize compound applied. The anti-seize compound shall be visible to the inspector at the signal turn-on. Bracket mounted signal heads shall be mounted with stainless steel bands at both the top and bottom of the head. Signal heads are to be positioned according to the "District 1 Standard Traffic Signal Design Details". The signal visors that are furnished with a signal head shall be made of the same kind of material as the signal head.

A signal head mounted to a signal post or a mast arm pole shall have a minimum clearance of ten (10) feet (3 m) above the pavement. Optically Programmed signal heads used for distance limiting shall have a minimum clearance of twelve (12) feet (3.6 m) above the pavement. These standard mounting heights shall apply unless otherwise specified.

Pedestrian signal head lenses shall be furnished with the international symbolic "Walking Person" and "Upraised Palm". The visor shall be of the tunnel type. Egg crate sun shields are not permitted. The normal mounting height shall be seven (7) feet (2.1 m) above the pavement or sidewalk.

Lamps shall be manufactured by Duratest, Sylvania, or an approved equal.

This work will be paid for at the contract unit price **EACH** which price shall be payment in full for furnishing and installing the signal head, optically programmed signal head, or pedestrian signal head complete and shall include the removal of any existing sections, lenses or heads being replaced by these items.

**Item AZ-54 PEDESTRIAN COUNTDOWN SIGNAL HEAD, LED, 1-FACE**

This item shall meet the requirements in the Cook County special Provision for Pedestrian Countdown Signal Head, LED.

This item shall conform with sections 881 of the Standard Specifications for Road and Bridge Construction, District 1 Traffic Signal Specifications, the current Highway Standard "Traffic Signal Mounting Details" and District 1 Standard Signal Design Details, except as revised herein. This work shall consist of furnishing and installing a pedestrian countdown signal head, with light emitting diodes (LED) of the type specified in the plan. At locations where new pedestrian signal head(s) or faces are replacing an existing pedestrian signal head(s) or faces, the removal shall be included in this item and the Contractor shall retain the used existing pedestrian signal head(s) or faces. Existing pedestrian push button signing shall be replaced with new count-down type signs (R10-3e, 9-inch x 15-inch) with associated sign station or housing at locations where existing push buttons are not being replaced.

All mounting hardware shall be new and shall be included in the pay item for signal head. The pay item listed below shall include either pole mounts or post mounts as required by the plans or directed by the Engineer. Any modifications to mounting hardware shall be included in this item.

Pedestrian Countdown Signal Head, Light Emitting Diode, shall be 16 inch (406mm) x 18 inch (457mm) and conform fully to the District 1 Traffic Signal Specifications.

This work shall be paid for at the contract unit price **EACH** for Pedestrian Countdown Signal Head, LED, 1-Face which shall be payment in full for furnishing the equipment described above including LED(s) modules, all mounting hardware, and installing them in satisfactory operating condition. The type specified will indicate the number of faces and the method of mounting.

**Item AZ-55 ACCESSIBLE PEDESTRIAN SIGNAL**

This item shall consist of furnishing and installing accessible pedestrian signals (APS). Each APS shall consist of an interactive pedestrian pushbutton with speaker, an information sign, a solid state electronic control board, a power supply, wiring and mounting hardware. The APS shall meet the requirements of the MUTCD and Section 801 and 888 of the Standard Specifications and the IDOT Special Provision for Accessible Pedestrian (APS).

Electrical Requirements. The APS shall operate with systems providing 95 to 130 VAC, 60 Hz and throughout an ambient air temperature range of -29 to +160 °F (-34 to +70 °C). The APS shall contain a power protection circuit consisting of both fuse and transient protection.

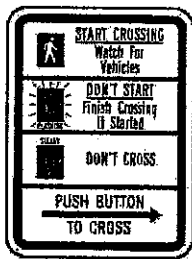
Audible Indications. A pushbutton locator tone shall sound at each pushbutton. If two accessible pedestrian pushbuttons are placed less than 10 ft (3 m) apart or placed on the same pole, the audible walk

indication shall be a speech walk message. A clear, verbal message shall be used to communicate the pedestrian walk interval. This message shall sound throughout the WALK interval only. The verbal message shall be "WALK SIGN", which may be followed by the name of the street to be crossed. No other messages shall be used to denote the WALK interval. Automatic volume adjustments in response to ambient traffic sound level shall be provided up to a maximum volume of 100 dB. Locator tone and verbal messages shall be no more than 5 dB louder than ambient sound.

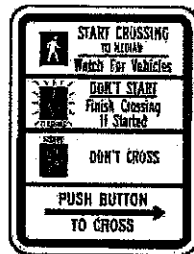
**Pedestrian Pushbutton.** Pedestrian pushbuttons shall be at least 2 in. (50 mm) in diameter or width. The force required to activate the pushbutton shall be no greater than 3.5 lb (15.5 N). If a pushbutton is depressed for three seconds, a custom verbal message shall be given before the walk cycle goes into effect which tells the pedestrian their location or other pertinent information about the intersection. A red light emitting diode (LED) shall be located on or near the pushbutton which, when activated, acknowledges the pedestrians request to cross the street.

**Signage.**

A sign shall be located immediately above the pedestrian pushbutton and parallel to the crosswalk controlled by the pushbutton. The sign shall be one of the following standard MUTCD designs: R10-3b, R10-3d, or R10-3e.



R10-3b



R10-3d



R10-3e

**Tactile Arrow.** A tactile arrow, pointing in the direction of travel controlled by a pushbutton, shall be provided either on the pushbutton or its sign. This arrow shall meet the requirements of Section X02.5.1.4 of the U.S. Access Board's "Public Rights-of-way Access Advisory Committee Report, 2001".

**Vibrotactile Feature.** When specified on the plans, vibrotactile messages shall also be provided at each pedestrian pushbutton. The pushbutton shall pulse when depressed and shall vibrate continuously throughout the WALK interval.

This work shall be paid at the contract unit price **EACH** for Accessible Pedestrian Signal which price shall be payment in full for furnishing and installing the Accessible Pedestrian Signal and pushbutton complete including vibrotactile feature when specified on the plans.

**Item AZ-56 ILLUMINATED SIGN, LED**

The installation of an Illuminated Sign, LED shall meet the requirements of Section 891 and the Cook County Special Provisions.

This work will be paid for at the contract unit price per EACH for which price shall be payment in full for furnishing and installing the light emitting diode illuminated sign complete.

**Item AZ-57 ILLUMINATED STREET NAME SIGN, LED (4 Foot)**

**Item AZ-58 ILLUMINATED STREET NAME SIGN, LED (6 Foot)**

**Item AZ-59 ILLUMINATED STREET NAME SIGN, LED (8 Foot)**

The installation of an Illuminated Sign, LED shall meet the requirements of the Cook County Special Provisions.

This work will be paid for at the contract unit price EACH which price shall be payment in full for furnishing and installing the illuminated street sign, LED complete with photo cell and the necessary connections for proper operation.

**Item AZ-60 RELOCATE ILLUMINATED STREET NAME SIGN**

This item shall consist of relocating the existing illuminated street name sign from an existing traffic signal mast arm to the new traffic signal mast arm as indicated in the plans or as directed by the Engineer.

The work shall include disconnecting illuminated sign and reconnecting it to the new cable.

If a new traffic signal controller and cabinet is installed the existing illuminated sign controls shall be removed from the existing controller cabinet and installed into the proposed controller cabinet (contactor, photocontrol, fuseholder, fuses, etc.). Replace the light engine of the LED sign, sign panels, safety cables and the mounting hardware before they are relocated on new mast arm pole.

Basis of Payment. This item will be paid for at the contract unit price EACH for RELOCATE EXISTING ILLUMINATED STREET NAME SIGN, which price shall be payment in full for disconnecting the existing illuminated sign, relocating, using new bracket assembly, safety cables, LED light engine and signal panels and connecting the illuminated sign to the new cable complete including controls, wiring, mounting hardware, light engines and operating to the satisfaction of the Engineer.

The illuminated street name sign cable will be paid for at the contract unit price per FOOT for ELECTRIC CABLE IN CONDUIT, STREET NAME SIGN, NO. 14 3C, TYPE SOOW, which price shall be payment in full for furnishing and installing the cable and making all electrical connections. The length of measurement shall be the distance horizontally measured between changes in direction, including cable in mast arms and slack cables. Slack cables will be paid for as lead-in cables in conduit.

**Item AZ-61 TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM**

The furnishing and installation of this item shall meet the requirements of Section 882 of the Standard Specifications, except as follows:

Backplates are to be aluminum and louvered with a minimum thickness of 0.05 inch (1.3 mm).

The surface of the backplate shall provide openings (louvers) to allow wind to penetrate and thereby reduce the wind loading on the mast arm and pole. The louver openings shall cover a minimum of twenty (20) percent of the surface area of the backplate. The louvers shall be designed not to deter the purpose of the backplate, which is to shield the signal lens from sunlight. The louvers shall be spaced symmetrically on the backplate in such a way as not to adversely affect its structural integrity.

When more than one backplate is mounted on a pole or post, their louvered symmetry shall be the same.

This work will be paid for at the contract unit price **EACH** for TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM, which price shall be payment in full for furnishing and installing the traffic signal backplate complete and shall include the removal of any backplates being replaced by this item.

**Item AZ-62 TRAFFIC SIGNAL BACKPLATE, REFLECTIVE**

Delete 1st sentence of Article 1078.03 of the Standard Specifications and add "All backplates shall be aluminum and louvered". Delete second sentence of the fourth paragraph of Article 1078.03 of the Standard Specifications. Add the following to the fourth paragraph of Article 1078.03 of the Standard Specifications:

Reflective sheeting shall be Type ZZ according to Article 1091.03, 2-inches wide and applied in the manufacturer's preferred orientation for the maximum angularity according. The retro reflective sheeting shall be installed under a controlled environment at the manufacturer/supplier facilities before shipment of the contractor. The aluminum backplate shall be prepared and cleaned, following recommendations of the retro reflective sheeting manufacturer.

This work will be paid for at the contract unit price **EACH** for TRAFFIC SIGNAL BACKPLATE, REFLECTIVE, which price shall be payment in full for furnishing and installing the traffic signal backplate complete and shall include the removal of any backplates being replaced by this item.

**Item AZ-63 FLASHING BEACON, LOW MOUNTED, ONE FACE**

This item shall conform with Sections 800 and 1000 of the Standard Specifications, and "Details of Span Wire Mounted Signals and Flashing Beacon Installations" Standard No. 880001.

This item shall consist of furnishing and installing a low mounted twelve (12) inch single LED section red or amber flashing beacon on an existing post, as directed by the Engineer. Work shall include furnishing and installing flasher controller in cabinet, service installation pole mounted, 12" red or amber LED section, and

all other incidentals necessary to complete the installation. This item shall not include underground conduit and cable installation between the service installation and the base of the flashing beacon.

This work will be paid for at the contract unit price **EACH** for FLASHING BEACON, LOW MOUNTED, ONE FACE which price shall be payment in full for furnishing and installing a flashing beacon complete with the necessary connections for proper operation.

**Item AZ-64 FLASHING BEACON, SPAN WIRE MOUNTED, ANY NUMBER OF FACES AS ONE SIGNAL HEAD**

This item shall conform with Sections 800 and 1000 of the Standard Specifications and "Details of Span Wire Mounted Signals and Flashing Beacon Installations" Standard. This work shall include furnishing and installing a flasher controller in a covered metal cabinet, the service installation pole mounted, 12" LED red and/or amber sections as required, poles, cable, messenger wire, and all other incidentals necessary to complete the installation.

This item shall not include underground conduit and cable installation between the service installation and the base of the flashing beacon pole.

This work will be paid for at the contract unit price **EACH** for FLASHING BEACON, SPAN WIRE MOUNTED, ANY NUMBER OF FACES AS ONE SIGNAL HEAD which price shall be payment in full for furnishing and installing the flashing beacon complete with the necessary connections for proper operation.

**Item AZ-65 FLASHING BEACON, LOW MOUNTED, ONE FACE, SOLAR POWERED**

**Item AZ-66 FLASHING BEACON, LOW MOUNTED, ONE FACE, SOLAR POWERED WITH PROGRAMMABLE TIME CLOCK**

This item shall conform with Sections 800 and 1000 of the Standard Specifications and "Details of Span Wire Mounted Signals and Flashing Beacon Installations" Standard.

The Solar Flashing Beacon shall have a peak intensity of 400 candela with a 30 degree horizontal divergence. The unit shall have an operating temperature between -40° F to 176° F. The Flasher unit shall be MUTCD compliant and have alternate flash patterns available. The LED module shall be ITE VTCSH-STD Part 2 compliant. It shall be able to operate 24 hours a day for 40 days without any additional charging. The batteries and solar panel shall be post top mounted.

The sections of the flasher unit shall be secured with tamper resistant stainless steel hardware and unless otherwise noted, the housing shall be black in color.

The battery shall have a life span of a minimum of 5 years and be field replaceable. The battery and electronics may be located inside the solar panel housing or signal head.

This item shall consist of furnishing and installing flasher controller, solar panel, programmable time clock, twelve (12) inch single section red or amber LED flashing beacon on an existing or new post as directed by



the Engineer and all other incidentals necessary to complete the installation. This item shall not include post and foundation installation.

This work will be paid for at the contract unit price **EACH** for FLASHING BEACON, LOW MOUNTED, ONE FACE, SOLAR POWERED or FLASHING BEACON, LOW MOUNTED, ONE FACE, SOLAR POWERED WITH PROGRAMMABLE TIME CLOCK which price shall be payment in full for furnishing and installing a flashing beacon, low mounted, one face, solar powered or flashing beacon, low mounted, one face, solar powered with programmable time clock complete with the necessary connections for proper operation.

**Item AZ-67 UNINTERRUPTIBLE POWER SUPPLY**

This item shall conform to the Cook County Special Provisions for Uninterruptible Power Supply.

This work will be paid for at the contract unit price **EACH** for furnishing and installing the UNINTERRUPTIBLE POWER SUPPLY . The price shall include the UPS unit, bypass switch, batteries (four or six etc., as recommended by the manufacturer), cabinet, wiring harnesses, and all associated equipment and materials necessary for proper operation.

**Item AZ-68 RELOCATE EXISTING TRAFFIC SIGNAL HEAD**

**Item AZ-69 RELOCATE EXISTING TRAFFIC SIGNAL POST**

These items shall conform with Section 895 of the Standard Specifications and the Cook County Special Provisions.

All mounting hardware shall be new and shall be included in the pay item for signal head. The pay item listed below shall include either mast arm mounts, pole mounts or post mounts as required by the plans or directed by the Engineer. Any modifications to mounting hardware shall be included in this item.

This work will be paid for at the contract unit price **EACH** to RELOCATE EXISTING TRAFFIC SIGNAL HEAD or RELOCATE EXISTING TRAFFIC SIGNAL POST which price shall be payment in full for furnishing all necessary materials and labor to relocate the existing Traffic Signal Head or existing Traffic Signal post.

**Item AZ-70 TRAFFIC SIGNAL POST, 3' TO 18' LONG**

**Item AZ-71 PEDESTRIAN PUSHBUTTON POST**

The furnishing and installation of this item shall meet the requirements of Sections 875 and 876 of the Standard Specifications, County Special Provision and District One Traffic Signal Detail Sheet.

If the Department approves painting, powder coating by the manufacturer will be required over the galvanization.

This work will be paid for at the contract unit price **EACH** for TRAFFIC SIGNAL POST, 3' TO 18' LONG of the length specified or PEDESTRIAN PUSHBUTTON POST, which price shall be payment in full for furnishing and installing the traffic signal post, base, foundation for pedestrian post, nuts and washers, and pipe cap complete and shall include the removal of any existing post being replaced by this item.

**Item AZ-72 PEDESTRIAN PUSHBUTTON POST, TYPE A**

The furnishing and installation of this item shall meet the requirements of Sections 875 and 876 of the Standard Specifications, County Special Provision and District One Traffic Signal Detail Sheet.

If the Department approves painting, powder coating by the manufacturer will be required over the galvanization.

This work will be paid for at the contract unit price **EACH** for PEDESTRIAN PUSHBUTTON POST, TYPE A, which price shall be payment in full for furnishing and installing the traffic signal post, base for pedestrian post, nuts and washers, and pipe cap complete and shall include the removal of any existing post being replaced by this item.

**Item AZ-73 PEDESTRIAN PUSHBUTTON**

This item shall meet Section 888 of the Specifications and the Cook County Special Provision shall consist of furnishing and installing a push button assembly which ADA compliant, highly vandal resistant, be pressure activated with minimal movement and can not be stuck in the normal or constant call position.

The Pedestrian Push-button assembly shall be one piece cast aluminum alloy with momentary LED or latching type LED display, as directed by the Traffic Signal Engineer, such as the Campbell 4EVR 120 or Polara Bulldog type, or an approved equivalent and include pedestrian push button station and sign.

This work shall be paid for at the contract unit price **EACH** for PEDESTRIAN PUSHBUTTON which price shall be payment in full for furnishing and installing the pushbutton assembly complete.

**Item AZ-74 STEEL MAST ARM ASSEMBLY AND POLE (MAST ARM 16' TO 28')**

**Item AZ-75 STEEL MAST ARM ASSEMBLY AND POLE (MAST ARM 30' TO 44')**

**Item AZ-76 STEEL MAST ARM ASSEMBLY AND POLE (MAST ARM 46' TO 55')**

**Item AZ-77 STEEL MAST ARM ASSEMBLY AND POLE (MAST ARM 56' TO 65')**

**Item AZ-78 STEEL MAST ARM ASSEMBLY AND POLE (MAST ARM 66' TO 75')**

The furnishing and installation of a Steel Mast Arm Assembly and Pole and/or Steel Combination Mast Arm Assembly and Pole shall meet the requirements of Section 877 of the Standard Specifications, Plans, the Cook County Special Provisions except as follows:

Prior to the final acceptance of any Steel Mast Arm Assembly and Pole, and/or Steel Combination Mast Arm Assembly and Pole, the Contractor must furnish to the Engineer a certified, notarized mill analysis of the material used in the Steel Mast Arm Assembly and Pole.

This item, when applicable, shall include the relocation of existing sign panels currently installed at the location.

If the proposed mast arm assembly is replacing an existing mast arm, the removal of the existing mast arm assembly shall be included in this item.

The mast arm shroud shall be included in this item and shall be galvanized steel or extruded aluminum for protection of the mast arm pole base plate similar to the dimensions detailed in the "District 1 Standard Traffic signal Design Details." The shroud shall be of sufficient strength to deter pedestrian and vehicular damage. The shroud shall allow air to circulate throughout the mast arm but not allow manifestation of insects or critters. The shroud shall be constructed, installed, and designed not to be hazardous to probing fingers and feet. All mounting hardware shall be stainless steel.

Shroud shall fit any pole size supplied by the manufacturer.

When the new Steel Mast Arm Assembly and Pole is being installed on an existing foundation to replace an existing Steel Mast Arm Assembly and Pole, the removal of the existing Steel Mast Arm Assembly and Pole shall be included in this item. The Contractor shall retain ownership of the existing Steel Mast Arm Assembly and Pole.

This work will be paid for at the contract unit price **EACH** for STEEL MAST ARM ASSEMBLY AND POLE of length of specified which price shall be payment in full for furnishing and installing the Steel Mast Arm Assembly and Pole anchor bolts, nuts, washers, and connected to a ground rod as shown on the Standard, complete. This item shall include the removal of any existing mast arm assembly and pole being replaced and the relocation of any existing sign panels currently installed on the existing mast arm assembly and pole.

**Item AZ-79 INSTALL EXISTING MAST ARM ASSEMBLY AND POLE**

This item shall consist of installing a mast arm assembly and pole at a location as directed by the Engineer. The mast arm assembly and pole shall come from County stock. It shall be installed on an existing foundation or a new foundation as required. If a new foundation is required it will be paid for separately.

This work will be paid for at the contract unit price **EACH** to INSTALL EXISTING MAST ARM ASSEMBLY AND POLE which price shall be payment in full for furnishing all necessary materials and labor to install the mast arm assembly and pole.

**Item AZ-80 REMOVE EXISTING MAST ARM ASSEMBLY AND POLE**

This item shall consist of removing an existing mast arm assembly and pole at a location as directed by the Engineer and shall conform to Section 895 of the Standard Specifications and the Cook County Special Provisions.

The equipment which is to be removed is to become the property of the County.

This work will be paid for at the contract unit price **EACH** to REMOVE EXISTING MAST ARM ASSEMBLY AND POLE which price shall be payment in full for furnishing all necessary materials and labor to remove the existing mast arm assembly and pole.

**Item AZ-81 REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT**

**Item AZ-82 REMOVE EXISTING TRAFFIC SIGNAL HEAD**

**Item AZ-83 REMOVE EXISTING TRAFFIC SIGNAL SECTION**

**Item AZ-84 REMOVE EXISTING TRAFFIC SIGNAL POST**

This item shall consist of removing the existing traffic signal equipment at a location as directed by the Engineer and shall conform to Section 895 of the Standard Specifications. and the Cook County Special Provisions.

The equipment which is to be removed is to become the property of the Contractor and be disposed of by them outside the right-of-way at their expense.

This work will be paid for at the contract unit price **EACH** to REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT, REMOVE EXISTING TRAFFIC SIGNAL HEAD, REMOVE EXISTING TRAFFIC SIGNAL SECTION, REMOVE EXISTING TRAFFIC SIGNAL POST which price shall be payment in full for furnishing all necessary materials and labor to remove the items.

**Item AZ-85 thru AZ-103 ELECTRIC CABLE IN CONDUIT OR AERIAL OF THE TYPE, SIZE AND NUMBER OF CONDUCTORS AS SHOWN**

The installation of a Signal Cable shall meet the requirements of Section 873 of the Standard Specifications and the Cook County Special Provisions except as follows:

When a new cable is being installed to replace an existing cable, the removal of the existing cable shall be included in this item.

When using coaxial cable for video detectors, coaxial cable shall be 75 ohm with polyethylene insulation and polyethylene jacket, 20 AWG solid bare copper conductors, and tinned copper braid double braid, 98% shield coverage. Cable to be Belden 8281 or approved equal.

When using twisted pairs communication and power wire for video detectors, the cable shall consist of five and one half twisted pairs communication and power wire -16 AWG, four pair for communications, detection, and video, and one and one half pair for power. There shall be an overall shield with drain wire and an overall UV resistant with Low Density Polyethylene jacket. The twisted pair component shall have 26 strands 30AWG tin plated copper conductor per ASTM B-33. Cable to be Belden YC46223 or approved equal.

When using three-wire power cable for AutoScope Solo Terra video vehicle detection system, the cable shall be 3 conductor with 18 AWG (16 x #30) SEPTC with HDPE insulation and HDPE jacket.

Interfacing connectors shall be of the same size and type as the cable, furnished and installed as needed and complied with the manufacturer's recommendations. All connectors installed outside or exposed to weather shall be furnished with a weatherproofing kit recommended by the manufacturer.

**Installation:**

The cable shall be carefully installed to avoid damage to the cable jacket. The cable shall be installed in accordance with NEC Article 820. The cable shall not be bent to a radius less than the manufacturers recommended bending radius, either in permanent placement or during installation. Cable splices will not be allowed.

Fasteners used to mount exposed video detector cable shall be compatible with the mounting structure material i.e. wood screws shall be used for wood, toggle bolts shall be used for hollow masonry, expansion bolts or power-set studs shall be used for solid masonry or concrete and clamps shall be used for structural steel. Wire tie-wraps are unacceptable. Cable shall be terminated, with the appropriate connectors.

**Testing:**

After installation, the cable, together with all connections, shall be tested as approved by the Engineer. The decibel signal loss per linear foot shall comply with the manufacturer's recommendations. Cable failing to pass the test shall be replaced with new cable at no additional cost.

This work will be paid for at the contract unit price per **FOOT** for **ELECTRIC CABLE** of the type, size, and number of conductors as specified, which price shall be payment in full for furnishing the material and making all electrical connections and installing the cable complete, measured as specified.

- Item AZ-104 FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125 MM12F SM24F**
- Item AZ-105 FIBER OPTIC CABLE - AERIAL, NO. 62.5/125 MM12F SM24F**
- Item AZ-106 ELECTRIC CABLE IN CONDUIT, TRACER - NO. 14 1C**

The installation of a Fiber Optic Electric Cable shall meet the requirements of Section 817 and 871 of the Standard Specifications and the Cook County Special Provisions.

This work will be paid for at the contract unit price per **FOOT** for **FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125 MM12F SM24F, FIBER OPTIC CABLE - AERIAL, NO. 62.5/125 MM12F SM24F, ELECTRIC CABLE IN CONDUIT, TRACER - NO. 14 1C** which price shall be payment in full for furnishing the material and making all connections and installing the cable complete, measured as specified.

**Item AZ-107 SPLICE FIBER IN CABINET**

This work shall consist of fusion splicing singlemode fibers in a field cabinet or inside a building as indicated on the plans and as directed by the Engineer. Splices shall be secured in fiber optic splice trays within fiber optic distribution enclosures. The splice trays shall be Corning Models M67-068, M67-110, or approved equivalent, capable of accommodating the required number of fusion splices. Splice trays shall be included in the cost of SPLICE FIBER IN CABINET and shall not be paid for separately.

The quality of all fiber splices shall be verified by testing and documentation in accordance with Article 802.08(b) of the "Standard Specifications", to the satisfaction of the Engineer.

All optical fibers shall be spliced to provide continuous runs. Splices shall only be allowed in equipment cabinets except where otherwise shown on the Plans.

All splices shall be made using a fusion splicer that automatically positions the fibers using a system of light injection and detection. The Contractor shall provide all equipment and consumable supplies.

This work shall be paid for at the contract unit price **EACH** for SPLICE FIBER IN CABINET which will be payment in full for all fusion splicing, fiber optic splice trays, testing and documentation, at a cabinet or building location shown on the plans and as directed by the Engineer.

**Item AZ-108 ELECTRIC CABLE IN CONDUIT, GROUNDING NO. 6, 1C**

The installation of a grounding electric cable shall meet the requirements of Section 817 and 873 of the Standard Specifications and the Cook County Special Provisions.

This work will be paid for at the contract unit price per **FOOT** for ELECTRIC CABLE IN CONDUIT, GROUNDING NO. 6, 1C which price shall be payment in full for furnishing the material and making all connections and installing the cable complete, measured as specified.

**Item AZ-109 GROUNDING EXISTING HANDHOLE FRAME AND COVER**

This item shall conform to "District 1 Standard Traffic Signal Design Details" and the Cook County Special Provisions.

This work will be paid for at the contract unit price **EACH** for GROUNDING EXISTING HANDHOLE FRAME AND COVER which shall be payment in full for grounding handhole complete.

**Item AZ-110 CONCRETE FOUNDATION, TYPE A**

**Item AZ-111 CONCRETE FOUNDATION, TYPE C**

**Item AZ-112 CONCRETE FOUNDATION, TYPE D**

**Item AZ-113 CONCRETE FOUNDATION, TYPE E (30", 36" OR 42")**

The installation of a Concrete Foundation shall meet the requirements of Section 878 of the Standard Specifications, the Standard Drawing for Concrete Foundations and the Cook County Special Provisions.

This work will be paid for at the contract unit price per **FOOT** for CONCRETE FOUNDATION of type and depth as specified which price shall be payment in full for all necessary excavating or drilling, back filling, disposal of unsuitable material, form work, ground rods and furnishing all materials within the limits of the foundation.

**Item AZ-114 MODIFY EXISTING TYPE D FOUNDATION**

The modification of existing type D foundation shall meet the requirements of Section 878 of the Standard Specifications and the Cook County Special Provisions.

This item shall consist of the partial removal of an existing Type "D" Foundation at the location as directed by the Engineer. The existing foundation shall be removed to a depth of at least twelve inches below finished grade. The disposal of the concrete debris outside of the right-of-way shall be included in this item. The existing conduit shall remain in place and shall be carefully protected. The new conduits from the double handhole shall be installed, if required.

**Installation:**

Upon completion of the work, holes for steel dowels of the size indicated shall be drilled in the remaining concrete. The adjacent area shall be excavated and formed with anchor bolts and new conduit stubs to provide a concrete foundation for a type IV or thpe V cabinet as per the current Highway Standard, "Concrete Foundation Details". The Contractor shall follow the recommendations of the manufacturer, subject to approval of the Engineer.

Provide a 36" x 48" x 5" P.C.C. apron sidewalk on the side of the access door to the controller to facilitate servicing the controller.

Anchor bolts shall be new and shall meet all the requirements of sections 800 and 1000 of the Standard Specifications for Road and Bridge Construction.

This work shall be paid for at the contract unit price **EACH** for MODIFY EXISTING TYPE D FOUNDATION, which price shall be payment in full for all labor, materials and equipment necessary to complete the work described above and as indicated on the drawings. The removal of the existing traffic signal controller shall be included in this pay item, as well as the pulling and reinstalling of the existing cable from conduit.

**Item AZ-115 PAVEMENT MARKING LINE 24 INCH**

This item shall consist of furnishing and installing painted pavement marking for a stop bar and shall meet the requirements of Section 780 of the Standard Specifications. This work will be paid for at the contract unit price per **FOOT** for PAVEMENT MARKING LINE 24 INCH which price shall be payment in full for furnishing and installing a 24 inch painted stop bar.



<b>Cook County Special Provisions</b>
Traffic Signal Work General
Construction at Railroad Crossing
Light Emitting Diode (LED) Traffic Signal
Light Emitting Diode (LED) Pedestrian Countdown Signal Head
Traffic Signal Backplate
Illuminated Sign, Light Emitting Diode
Traffic Signal Post, Pedestrian Pushbutton Post
Steel Mast Arm Assembly and Pole and/or Steel Combination Mast Arm Assembly and Pole
Traffic Actuated Controller, Traffic Actuated Controller with Cabinet, Inductive Loop Detector
Master Controller
Detector Loop
Pedestrian Pushbutton
Conduit
Coilable Non-Metallic Conduit
Electric Cable
Railroad Interconnect Cable
Fiber Optic Cable
Grounding of Traffic Signal Systems And Grounding Cable
Grounding Existing Handhole Frame and Cover
Service Installation, Pole Mounted
Service Installation, Ground Mounted
* Electric Service
Handhole
Rebuild Existing Handhole, Rebuild Existing Heavy Duty Handhole, Rebuild Existing Double Handhole
Concrete Foundation
Modify Existing Type "D" Foundation
Remove Existing Traffic Signal Equipment
Temporary Traffic Signal Installation
Maintenance of Existing Traffic Signal Installation
Emergency Vehicle Priority System
Relocate Existing Emergency Vehicle Priority System, Detector Unit
Relocate Existing Emergency Vehicle Priority System, Phasing Unit
Confirmation Beacon System
Re-Optimize Traffic Signal System
Optimize Traffic Signal System

Median Removal and Replacement
Sidewalk Removal and Replacement
Relocate Existing Light Standard and Luminaire Complete in Place
Maintenance Of Lighting System
City Electric Manholes to be Adjusted
Uninterruptible Power Supply (UPS)
Traffic Signal Cabinet Load Switch
Temporary Traffic Signal Timing
Combination Lighting and Traffic Signal Service Installation, Pole Mounted
Illuminated Street Name Sign
Relocate Existing Illuminated Street Name Sign
Video Detection System, Single Camera Processor Video Detection
Video Detection System, Complete Intersection
Uninterruptible Power Supply Without Cabinet
Modifying Existing Controller Cabinet
Traffic Actuated Controller
Railroad, Traffic Actuated Controller etc
Accessible Pedestrian Signals
Emergency Vehicle Priority System Line Sensor Cable, No. 20 3/C
Rod And Clean Existing Conduit
Remove And Replace Anchor Bolts
Rectangular Rapid Flashing Beacon System, Complete
Radar Vehicle Detection System
Flashing Beacon Installation, solar powered
Flashing Beacon Installation
Remove Existing Flashing Beacon
Relocate Existing Flashing Beacon Installation
Temporary Flashing Beacon Installation
Traffic Signal Painting
Uninterruptible Power Supply, Ground Mounted

**SPECIAL PROVISION  
FOR  
TRAFFIC SIGNAL WORK GENERAL**

All work and equipment performed and installed under this contract, shall be governed and shall comply to the State of Illinois "Standard Specifications for Road and Bridge Construction" latest edition, herein referred to as the Standard Specifications and the "District One Standard Design Details"; the State of Illinois "Manual on Uniform Traffic Control Devices for Streets and Highways", latest edition; the "National Electrical Code" latest edition herein referred to as the NEC; the National Electrical Manufacturers Association, herein referred to as NEMA (all publications for traffic control items) latest editions; the International Municipal Signal Association, herein referred to as IMSA "Official Wire & Cable Specifications Manual" latest edition; the Institute of Transportation Engineers, herein referred to as the ITE, Technical Report No.1, "A Standard for Adjustable Face Vehicular Traffic Control Heads"; AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals" and the "Supplemental Specifications" and "Recurring Special Provisions" noted herein.

The following Special Provisions supplement the above specifications, manuals, and code. The intent of these Special Provisions is to prescribe the materials and construction methods commonly used for traffic signal installations. All material furnished shall be new unless otherwise noted herein. The locations and the details of all installations shall be as indicated on the Plans or as directed by the Engineer. Traffic signal construction and maintenance work shall be performed by personnel holding IMSA Traffic Signal Technician Level II certification. The work to be done under this contract consists of furnishing and installing all traffic signal work as specified in the Plans and as specified herein in a manner acceptable and approved by the Engineer. In case of conflict with any part or parts of said documents, these Special Provisions shall take precedence and shall govern.

In order to reduce possible vehicular conflicts with fixed objects and avoid public criticism, it is necessary to require that no posts, poles, heads, or controller cabinets be installed until all traffic signal control equipment is brought to and located on the job site.

The construction, installation and/or removal work shall be accomplished at all the intersections within the limits of this project or as shown in the plans.

Description of Work. The work to be done under this contract consists of furnishing and installing all traffic signal work as specified on the Plans and as specified herein in a manner acceptable and approved by the Engineer.

**Control of Traffic Signal Materials.**

All work shall meet the requirements of the "Standard Specifications for Road and Bridge Construction", except as follows:

The controller and all control equipment shall be of a manufacturer that is approved by this Department. The of all equipment shall have a representative and shop located in the six (6) county Chicago areas. All equipment installed in the controller cabinet shall be from a single supplier. The supplier shall be responsible for service and support for this equipment.

The intent of this Section is to prescribe the materials and construction methods commonly used for traffic signal installations. All material furnished shall be new unless otherwise noted herein. Traffic materials and equipment shall bear the U.L. label whenever such labeling is available.

All iron and steel products, which are to be incorporated into work shall be domestically manufactured or produced and fabricated. The contractor shall obtain from the iron or steel producer and/or fabricator, in addition to the mill analysis, a certification that all iron or steel materials meet these domestic source requirements.

The application of all coatings, epoxy, galvanizing, painting, etc., to metal products shall be domestically applied.

Metal material other than iron and steel, which are not domestically produced, may be accepted provided:

- (a) The contractor notifies the Department in advance of his/her intention to use other than domestically manufactured or produced material.
- (b) Written evidence is provided in English of compliance with all requirements of the specifications.
- (c) Physical tests conducted by the department verify the acceptability of the material.

Before any signal equipment, including mast arm assemblies, poles, controller cabinets, all control equipment and signal heads, are delivered to the job site, the Contractor shall obtain and forward to the Engineer a certified, notarized statement from the manufacturer, containing the catalog numbers of the equipment and/or material, guaranteeing that the equipment and/or material, after manufacture, comply in all respects with the requirements of the Specifications and these Special Provisions.

All material approval requests shall be within thirty (30) consecutive calendar days after the Contract is awarded, or at the pre-construction meeting, whichever is first. A list of major traffic signal items can be found in Article 801.05. Material or equipment which is similar or identical shall be the product of the same manufacturer, unless necessary for system continuity. Traffic signal materials and equipment shall bear the U.L. label whenever such labeling is available.

All cost of work and materials required to comply with the above requirements shall be included in the pay item bid prices, under which the subject materials and signal equipment are paid, and no additional compensation will be allowed. Materials and signal equipment not complying with the above requirements that have been installed on the job will be done at the Contractor's own risk and may be subject to removal and disposal at the Contractor's expense.

The Contractor must submit the following for approval by the Engineer:

- Four (4) complete set of manufacturer's descriptive literature, drawings, and specifications of the traffic signal equipment, handholes, junction box, cable, conduit and all associated items that will be installed on the contract. If the literature contains more than one item, the Contractor shall indicate which item or items will be furnished.
- Partial or incomplete submittal will be returned without review.

- The contractor shall supply samples of all wire and cable, and shall make up and supply samples of each type of cable splice proposed for use in the work for the-Engineer's approval.
- Seven (7) complete shop drawings of the mast arm assemblies and poles including combination mast arm poles are required, showing in detail the fabrication, anchor bolts, reinforcing materials, design material, thickness of sections and weld sizes. These drawing shall be at least 11" x 17" (275mm x 425mm) in size and adequate quality for microfilming.
- Certain non-standard mast arm poles and assembles will require additional review. The Contractor shall account for additional review time in their schedule.
- Seven (7) copies of a letter from the Traffic Signal Contractor on company letterhead listing contract number or permit number, project location limits, pay item number and description and listing the manufacturer's name and model numbers of the proposed equipment to be supplied and stating that the proposed equipment meets all Contract requirements. The letter will be reviewed by the Engineer to determine whether the equipment to be used is approvable. The letters will be stamped as approved or not approved accordingly and returned to the Contractor.
- Five (5) copies of a letter from the Traffic Signal Contractor listing the System Coordination and Timing (SCAT) consultant's name shall be supplied. The letter will be reviewed by the Engineer to determine whether the SCAT consultant to be used is approved. The letters will be stamped as approved or not approved accordingly and returned to the Contractor.
- Where certifications and/or warranties are specified. The information submitted for approval shall include certifications and warranties. Certifications involving inspections and/or tests of material shall be complete with all test data, dates and times.
- All above shall be stamped with the Section Number, Permit Number, or Contract Number and Intersection(s) name(s). Pay item numbers shall also be included. If the above required information is not on each sheet of the above literature or letters, the equipment and material cuts will not be reviewed and shall be returned to the Contractor.
- All submitted items reviewed and marked 'APPROVED AS SUBMITTED', 'APPROVED AS NOTED', 'DISAPPROVED', 'INCOMPLETE' or 'NOT REVIEW' are to be resubmitted in their entirety, unless otherwise indicated within the submittal comments, with a disposition of previous comments to verify contract compliance at no additional cost to the contract.
- Exceptions, Deviations and Substitutions. In general, exceptions to and deviations from the requirements of the Contract Documents will not be allowed. It is the Contractor's responsibility to note any deviations from Contract requirements at the time of submittal and to make any requests for deviations in writing to the Engineer. In general, substitutions will not be acceptable. Requests for substitutions must demonstrate that the proposed substitution is superior to the material or equipment required by the Contract Documents. No exceptions, deviations or substitutions will be permitted without the approval of the Engineer.
- After the engineer reviews the submittals for conformance with the design concept of the project, the Engineer will stamp the drawings indicating their status. Since the Engineer's review is for conformance with design concept only. It is the Contractor's responsibility to coordinate the various items into a working system as specified. The Contractor shall not be relieved from responsibility for errors or omissions in the shop working,

layout drawings, or other documents by the Departments approval thereof. The Contractor must be in full compliance with contract and specification requirements.

- Contractor shall not order major equipment such as mast arm assemblies prior to Engineer approval of the Contractor marked proposed traffic signal equipment locations to assure proper placement of contract required traffic signal displays, push buttons and other facilities. Field adjustments may require changes in proposed mast arm length and other coordination.

**Marking Proposed Locations.**

Revise the following to Article 801.09 of the Standard Specifications:

Revise "Marking Proposed Locations for Highway Lighting System" to read "Marking Proposed Locations for Highway Lighting System and Traffic Signals."

It shall be the contractor's responsibility to verify all dimensions and conditions existing in the field prior to ordering materials and beginning construction. This shall include locating the mast arm foundations and verifying the mast arms lengths.

**Maintenance and Responsibility.**

Revise Article 801.11 to read as follows.

- a) Existing traffic signal installations and/or any electrical facilities at all or various locations may be altered or reconstructed totally or partially as part of the work on this Contract. The Contractor is hereby advised that all traffic control equipment, presently installed at these locations, may be the property of the State of Illinois, Department of Transportation, Division of Highways, Cook County Highway Department, Private Developer, or the Municipality in which they are located. Once the Contractor has begun any work on any portion of the project all traffic signals within the limits of this contract or those which have the item "Maintenance of Existing Traffic Signal Installation", "Temporary Traffic Signal Installation(s)" and/or "Maintenance of Existing Flashing Beacon Installation", shall become the full responsibility of the Contractor. Automatic Traffic Enforcement equipment is not owned by the County and the Contractor shall not be responsible for maintaining it during construction. The Contractor shall supply the engineer and the Department's Electrical Maintenance Contractor a 24-hour emergency contact name and telephone number.
- b) When the project has a pay item for "Maintenance of Existing Traffic Signal Installation", "Temporary Traffic Signal Installation(s)" and/or "Maintenance of Existing Flashing Beacon Installation", the Contractor must notify both the Design Engineer at (312) 603-1730 and the Department's Electrical Maintenance Contractor, of their intent to begin any physical construction work on the Contract or any portion thereof. This notification must be made a minimum of seven (7) working days prior to the start of construction to allow sufficient time for inspection of the existing traffic signal installation(s) and transfer of maintenance to the Contractor. If work is started prior to an inspection, maintenance of the traffic signal installation(s) will be transferred to the Contractor without an inspection. The Contractor will become responsible for repairing or replacing all equipment that is not operating properly or is damaged at no cost to the owner of the traffic signal. Final repairs or replacement of damaged equipment must meet the approval of the

Engineer prior to or at the time of final inspection otherwise the traffic signal installation will not be accepted.

- c) Regional transit, County and other agencies may also have equipment connected to existing traffic signal or peripheral equipment such as PTZ cameras, switches, transit signal priority (TSP and BRT) servers and other devices that shall be included with traffic signal maintenance at no additional cost to the contract.
- d) Contracts such as pavement grinding or patching which result in the destruction of traffic signal loops may not require maintenance transfer, unless a pay item of "Maintenance of Existing Traffic Signal Installation" is included in the project. When the pay item of "Maintenance of Existing Traffic Signal Installation" is not included, the Contractor is required to notify of intent to work and an inspection. A minimum of seven (7) working days prior to the loop removal, the Contractor shall notify the Design Engineer at (312) 603-1730, the Department's Electrical Maintenance Contractor and the owner of automatic traffic enforcement prior to the loop removal, at which time arrangements will be made to adjust the traffic controller timing to compensate for the absence of detection. Damaged Automatic Traffic Enforcement equipment, including cameras, detectors, or other peripheral equipment, shall be replaced by others, per Permit agreements or other agreements., at no cost to the contract except for City of Chicago projects in which the detectors shall be replaced. See additional requirements in these specifications under Inductive Loop Detector.
- e) The Contractor is further advised that the existing traffic signal(s), and/or the existing temporary installation(s), must remain in operation during all construction stages except for the most essential down time. Any shutdown of the traffic signal installation(s), for a period to exceed fifteen (15) minutes, must have the prior approval of the Engineer. Such approval will generally only be granted during the period extending from 10:00 a.m. to 3:00 p.m. on weekdays. Shutdowns will not be allowed during inclement weather or during Holiday periods. Any other traffic signal shutdown, either for periods in excess of one (1) hour or outside of the 10:00 a.m. to 3:00 p.m. weekday period must have prior approval of the Engineer. The Contractor, prior to the commencement of his work, shall notify the State Electrical Maintenance Contractor, the Cook County Electrical Maintenance Contractor, or the concerned Municipality, of his intent to perform this work.
- f) The Contractor shall be fully responsible for the safe and efficient operation of the traffic signals. Any inquiry, complaint or request by the Department, the Department's Electrical Maintenance Contractor or the public, shall be investigated and repairs begun within one hour. Failure to provide this service will result in liquidated damages of \$1000 per day per occurrence. In addition, the Department reserves the right to assign any work not completed within this timeframe to the Electrical Maintenance Contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the Electrical Maintenance Contractor within one month after the incident will result in additional liquidated damages of \$1000 per month per occurrence. Unpaid bills will be deducted from the cost of the Contract. The Department's Electrical Maintenance Contractor may inspect any signaling device on the Department's highway system at any time without notification.
- g) Any proposed activity in the vicinity of a highway-rail grade crossing must adhere to the guidelines set forth in the current edition of the Manual on Uniform Traffic Control Devices (MUTCD)

regarding work in temporary traffic control zones in the vicinity of highway-rail grade crossings which states that lane restrictions, flagging, or other operations shall not create conditions where vehicles can be queued across the railroad tracks. If the queuing of vehicles across the tracks cannot be avoided, a uniformed law enforcement officer or flagger shall be provided at the crossing to prevent vehicles from stopping on the tracks, even if automatic warning devices are in place.

- h) The Contractor shall be responsible to clear snow, ice, dirt, debris or other condition that obstructs visibility of any traffic signal display.
- i) The Contractor shall maintain the traffic signal in normal operation during short or long term loss of utility or battery back-up power at critical locations designated by the Engineer. Critical locations may include traffic signals interconnected to railroad warning devices, expressway ramps, intersection with an SRA route, critical corridors or other locations identified by the Engineer. Temporary power to the traffic signal must meet applicable NEC and OSHA guidelines and may include portable generators and/or replacement batteries.

Damage to Traffic Signal System.

Add the following to Article 801.12(b).

- a) Any damaged equipment or equipment not operating properly from any cause whatsoever shall be replaced with new equipment provided by the contractor at no additional cost to the Contract and/or owner of the traffic signal system all as approved by the Engineer. Final repairs or replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection otherwise the traffic signal will not be accepted. Cable splices outside the controller cabinet will not be allowed.
- b) Temporary replacement of damaged or knockdown of a mast arm pole assembly shall require construction of a full or partial span wire signal installation or other method approved by the Engineer to assure signal heads are located overhead and over traveled pavement. Temporary replacement of mast arm mount signals with post mount signals will not be permitted.
- c) Automatic Traffic Enforcement equipment, such as Red Light Enforcement cameras, detectors, and peripheral equipment, damaged or not operating properly from any cause whatsoever, shall be the responsibility of the municipality or the Automatic Traffic Enforcement Company per Permit agreement or other agreements.

Traffic Signal Inspection (Turn - On).

Revise Article 801.15b to read as follows.

- a) The Contractor must have all electric work completed, the electrical service installation connected by the utility company and equipment field tested by the Vendor prior to the Department's "turn-on" field inspection. If in the event the Engineer determines the work is not complete and the inspection will require more than two (2) hours to complete, the inspection shall be canceled and the Contractor will be required to reschedule at another date. The maintenance of the traffic signals will



not be accepted until all punch list work is corrected and re-inspected. The Department will not grant a field inspection until written certification is provided from the Contractor stating the equipment has been field tested and the intersection is operating according to Contract requirements.

- b) When the road is open to traffic, except as otherwise provided in Section 850 of the Standard Specification, the Contractor may request a turn-on and inspection of the completed traffic signal installation at each separate location. This request must be made to the Design Engineer at (312) 603-1730 a minimum of seven (7) working days prior to the time of the requested inspection. The Department will not grant a field inspection until notification is provided from the Contractor that the equipment has been field tested and the intersection is operating according to Contract requirements. The Contractor must invite local fire department personnel to the turn-on when Emergency Vehicle Pre-emption (EVP) is included in the project. When the contract includes the item RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM, OPTIMIZE TRAFFIC SIGNAL SYSTEM, or TEMPORARY TRAFFIC SIGNAL TIMINGS, the Contractor must notify the SCAT Consultant of the turn-on schedule, as well as stage changes and phase changes during construction.
- c) The Contractor must have all traffic signal work completed and the electrical service installation connected by the utility company prior to requesting an inspection and turn-on of the traffic signal installation. The Contractor shall be responsible to provide a Police Officer to direct traffic at the time of testing.
- d) The Contractor shall provide a representative from the control Equipment Vendor's office to attend the traffic signal inspection for both permanent and temporary traffic signal turn-ons. Upon demonstration that the signals are operating and all work is completed in accordance with the Contract and to the satisfaction of the Engineer, the Engineer will then allow the signals to be placed in continuous operation. The Agency that is responsible for the maintenance of each traffic signal installation will assume the maintenance upon successful completion of this inspection.
- e) Acceptance of the traffic signal equipment by the Department shall be based upon inspection results at the traffic signal turn-on, completeness of the required documentation and successful operation during a minimum 72 hour "burn-in" period following activation of the traffic signal. If approved, traffic signal acceptance shall be verbal at the turn-on inspection followed by written correspondence from the Engineer. The Contractor shall be responsible for all traffic signal equipment and associated maintenance thereof until Departmental acceptance is granted.
- f) All equipment and/or parts to keep the traffic signal installation operating shall be furnished by the Contractor. No spare traffic signal equipment is available acceptable from the Department.
- g) All punch list work shall be completed within two (2) weeks after the final inspection. The Contractor shall notify the Design Engineer at (312) 603-1730 to inspect all punch list work. Failure to meet these time constraints shall result in liquidated damage charges of \$500 per month per incident.
- h) All cost of work and materials required to comply with the above requirements shall be included in the pay item bid prices under which the subject materials and signal equipment are paid and no additional compensation will be allowed. Materials and signal equipment not complying with the

above requirements that have been installed on the job will be at the Contractor's own risk and shall be subject to removal and disposal at the Contractor's expense.

- i) The Contractor shall furnish the Cook County Highway Department with any special tools or wrenches that may be required for assembling or maintaining the control equipment and traffic control signal head assemblies.
- j) All control cable, when complete in place but before permanent connection, shall be subject to insulation tests at the discretion of the Engineer. The tests shall be made with approved insulation resistance testing equipment rated at 500 volts D.C. and witnessed by the Engineer. Results of these tests shall be submitted to the Department in written form, bearing the Engineers signature and shall become part of the project records. A final inspection of the traffic signal installation shall not be held until results of this insulation test have been received.
- k) All equipment such as new controllers and allied central equipment with the exception of cable, conduit, and other materials which require the use of the State of Illinois Materials Testing Laboratories, shall be built in the suppliers shop and inspected by a representative of this Department prior to the installation of such equipment, and upon approval of this equipment an inspection ticket will be issued to the Contractor by the inspection agency (State of Illinois Material Testing Laboratory or the Cook County Highway Mechanical-Electrical Section). The controller and allied control equipment shall be prepared in the suppliers shop and run under a load of a minimum of 500 watts per phase for at least 48 hours before it is inspected for proper operation and sequencing. After it passes this test an inspection ticket will be issued by the Cook County Highway Mechanical-Electrical Section representative and it can then be delivered to the job site for installation.
- l) Upon completion of the installation, a final inspection will be carried out by qualified representatives of the Highway Agencies involved.
- m) If the Contractor fails to comply with any of the aforementioned requirements, the County shall impose such sanction as it may determine to be appropriate including but not limited to withholding all payments to the Contractor on this contract until the provisions of this special provision are complete with and/or implementation of article 108.10 of the standard specifications.

At the final inspection it will be required that the Contractor will have submitted to the Engineer all necessary inspection tickets for all new equipment and materials installed under this Contract. If the Contractor has not obtained the inspection tickets on any portion of the new equipment and materials, the representative of this Department will have the authority to postpone the final inspection until such time as the above has been satisfied. Any postponement of the final inspection for this reason shall not relieve the Contractor of his full maintenance responsibilities until such time as the installation is re-inspected and accepted by the County.

The County requires the following Final Project Documentation from the Contractor at traffic signal turn-ons in electronic format in addition to hard copies where noted. A CD/DVD shall be submitted with separate folders corresponding to each numbered title below. The CD/DVD shall be labelled with date, project location, company and contract or permit number. Record Drawings, Inventory and Material Approvals shall be submitted prior to traffic signal turn-on for review by the Department as described here-in.

The County requires the following from the Contractor at traffic signal turn-on.

- 37) The Contractor shall, at the turn-on furnish one hard copy set of signal plans (24"x36") of record with field revisions marked in red ink to the maintaining agency.
- 38) Field Testing. Written notification from the Contractor and the equipment vendor of satisfactory field testing with corresponding material performance measurements, such as for detector loops and fiber optic systems (see Article 801.13). One hard copy of all contract required performance measurement testing shall also be provided.
- 39) A knowledgeable representative of the controller equipment supplier shall be required at the permanent and temporary traffic signal turn-on. The representative shall be knowledgeable of both cabinet design and controller functions and shall have sufficient test and spare equipment to make the traffic signal installation operational.
- 40) Pictures. Digital pictures of a minimum 12M pixels of each intersection approach showing all traffic signal displays and equipment. Pictures shall include controller cabinet equipment in enough detail to clearly identify manufacture and model of major equipment.
- 41) Materials Approval. The material approval letter. A hard copy shall also be provided.
- 42) Manuals. Operation and service manuals of the signal controller and associated control equipment. One hard copy shall also be provided.
- 43) Cabinet Wiring Diagram and Cable Logs. Five (5) hard copies 11" x 17" of the cabinet wiring diagrams shall be provided along with electronic pdf and dgn files of the cabinet wiring diagram. Five hard copies of the cable logs and electronic excel files shall be provided with cable #, number of conductors and spares, connected device/signal head and intersection location.
- 44) Controller Programming Settings. The traffic signal controller's timings; backup timings; coordination splits, offsets, and cycles; TBC Time of Day, Week and Year Programs; Traffic Responsive Program, Detector Phase Assignment, Type and Detector Switching; and any other functions programmable from the keyboard. The controller manufacturer shall also supply a printed form, not to exceed 11" x 17" for recording that data noted above. The form shall include a location, date, manufacturer's name, controller model and software version. The form shall be approved by the Engineer and a minimum of three (3) copies must be furnished at each turn-on. The manufacturer must provide all programming information used within the controller at the time of turn-on.
- 45) All Manufacturer and Contractor warranties and guaranties required by Article 801.14.
- 46) GPS coordinate of traffic signal equipment as describe in the Record Drawings section herein.

#### RECORD DRAWINGS

The requirements listed for Electrical Installation shall apply for Traffic Signal Installations in Article 801.16. Revise the 2nd paragraph of Article 801.16 of the Standard Specifications to read:

- a. When the work is complete, and seven days before the request for a final inspection, the full-size set of contract drawings. Stamped "RECORD DRAWINGS", shall be submitted to the Engineer for review and approval and shall be stamped with the date and the signature of the Contractor's supervising Engineer or electrician. The record drawings shall be submitted in PDF format on CDROM as well as hardcopy for review and approval. If the contract consists of multiple intersections, each intersection shall be saved as an individual PDF file with TS# and location name in its file name.
- b. In addition to the record drawings, copies of the final catalog cuts which have been Approved or Approved as Noted shall be submitted in PDF format along with the record drawings. The PDF files shall clearly indicate the pay item either by filename or PDF Table of Contents referencing the respective pay item number for multi-item PDF files. Specific part or model numbers of items which have been selected shall be clearly visible."

Add the following to Article 801.16 of the Standard Specifications:

"In addition to the specified record drawings, the Contactor shall record GPS coordinates of the following traffic signal components being installed, modified or being affected in other ways by this contract:

- All Mast Arm Poles and Posts
- Traffic Signal Wood Poles
- Rail Road Bungalow
- UPS
- Handholes
- Conduit roadway crossings
- Controller Cabinets
- Communication Cabinets
- Electric Service Disconnect locations
- CCTV Camera Installations
- Fiber Optic Splice Locations
- Conduit Crossings

Datum to be used shall be North American 1983.

Data shall be provided electronically and in print form. The electronic format shall be compatible with MS Excel. Latitude and Longitude shall be in decimal degrees with a minimum of 6 decimal places. Each coordinate shall have the following information:

1. File shall be named: TSXXX-YY-MM-DD (i.e. TS22157\_15-01-01)
2. Each intersection shall have its own file
3. Row 1 should have the location name (i.e. 103<sup>rd</sup> Street at Central Avenue)
4. Row 2 is blank
5. Row 3 is the headers for the columns
6. Row 4 starts the data
7. Column A (Date) – should be in the following format: MM/DD/YYYY
8. Column B (Item) – as shown in the table below
9. Column C (Description) – as shown in the table below
10. Column D and E (GPS Data) – should be in decimal form, per the County special provisions

Examples:

Date	Item	Description	Latitude	Longitude
01/01/2015	MP (Mast Arm Pole)	NEQ, NB, Dual, Combination Pole	41.580493	-87.793378
01/01/2015	HH (Handhole)	Heavy Duty, Fiber, Intersection, Double	41.558532	-87.792571
01/01/2015	ES (Electrical Service)	Ground mount, Pole mount	41.765532	-87.543571
01/01/2015	CC (Controller Cabinet)		41.602248	-87.794053
01/01/2015	RSC (Rigid Steel Crossing)	IL 31 east side crossing south leg to center HH at Klausen	41.611111	-87.790222
01/01/2015	PTZ (PTZ)	NEQ extension pole	41.593434	-87.769876
01/01/2015	POST (Post)		41.651848	-87.762053
01/01/2015	MCC (Master Controller Cabinet)		41.584593	-87.793378
01/01/2015	COMC (Communication Cabinet)		41.584600	-87.793432
01/01/2015	BBS (Battery Backup System)		41.558532	-87.792571

Prior to the collection of data, the contractor shall provide a sample data collection of at least six data points of known locations to be reviewed and verified by the Engineer to be accurate within 1 feet. Upon verification, data collection can begin. Data collection can be made as construction progresses, or can be collected after all items are installed. If the data is unacceptable the contractor shall make corrections to the data collection equipment and or process and submit the data for review and approval as specified.

Accuracy. Data collected is to be mapping grade. A handheld mapping grade GPS device shall be used for the data collection. The receiver shall support differential correction and data shall have a minimum 1 foot accuracy after post processing GPS receivers integrated into cellular communication devices, recreational and automotive GPS devices are not acceptable.

The GPS shall be the product of an established major GPS manufacturer having been in the business for a minimum of 6 years."

Location of Underground State and County Maintained Facilities.

Revise Article 803 to read as follows.

County traffic signal facilities are not part of any of the one-call locating service such as J.U.L.I.E or Digger. If this contract requires the services of an electrical contractor, the Contractor shall be responsible at his/her own expense for locating existing IDOT and CCHD facilities prior to performing any work. If this contract does not require the services of electrical contractor, the Contractor may request one free locate for existing IDOT and CCHD electrical facilities from the Electrical Maintenance Contractor(s) prior to the start of any work. Additional requests may be at the expense of the Contractor. The location of underground traffic facilities does not relieve the Contractor of their responsibility to repair any facilities damaged during construction at their expense.

screen wire shall overlap and be fastened with a ring type connector. The Shroud shall not be paid for separately but shall be included in the cost of the mast arm assembly and pole.

The steel mast arm assembly and pole and/or steel combination mast arm assembly and pole shall be designed to support signal heads, signs, illuminated signs, luminare, camera and other attachments as shown on the plans. Refer to the Standard Drawings for Mast Arm Assembly and Pole for design loadings and projected area with wind load based on an 80 mile per hour (130 km/h) wind velocity plus 30 percent gust factor.

**Shop Drawing Approval.** The contractor shall submit detailed drawings showing design materials, thickness of sections, weld sizes, and anchor rods to the Engineer for approval prior to fabrication. These drawings shall be at least 11X17 in. (275X425 mm) in size and of adequate quality for microfilming. All product data and shop drawings shall be submitted in electronic form on CD-ROM.

**Anchor Rods.** Two nuts, one lock washer, and one flat washer shall be furnished with each anchor rod. All nuts and washers shall be galvanized.

In addition to the signal loading, the steel mast arm assembly and pole, and/or steel combination mast arm assembly and pole shall be structurally adequate to support a maximum of two (2) sign panels 30" x 72" (750 mm x 1,800 mm) in size mounted back to back, one LED street sign 96 5/8" x 22 5/16" with 92 pounds and one (1) sign panels 30" x 24" (750 mm x 600 mm) in size mounted from 3 feet (900 mm) from end of the mast arm. The actual size and number of the sign panel(s) to be furnished and installed and the details of mounting shall be as shown on the County Standard Drawing of "ILLUMINATED STREET NAME SIGN MOUNTING DETAIL".

Signs attached to poles or posts (such as mast arm signs) shall have mounting brackets and sign channels which are equal to and completely interchangeable with those used by the Department. Signfix Aluminum Channel Framing System is currently recommended, but other brands of mounting hardware are acceptable based upon the Department's approval.

**Basis of Payment.** This work will be paid for at the contract unit price EACH for STEEL MAST ARM ASSEMBLY AND POLE, and/or STEEL COMBINATION MAST ARM ASSEMBLY AND POLE of the size(s) specified which price shall be payment in full for furnishing and installing the steel mast arm assembly and pole and/or steel combination mast arm assembly and pole, anchor bolts, nuts, washers, and connected to a ground rod as shown on the Standard, complete.

**SPECIAL PROVISION  
FOR  
TRAFFIC ACTUATED CONTROLLER  
TRAFFIC ACTUATED CONTROLLER WITH CABINET  
INDUCTIVE LOOP DETECTOR**

The furnishing and installation of a traffic actuated controller and an inductive loop detector shall meet the requirements of Section 857, 885, 1073, 1074.03 and 1079.01 of the Standard Specifications, except as revised with this Special Provision.

The new and/or temporary controller and all control equipment shall be of a manufacturer that is approved by this Department. The manufacturer shall have a representative located in the six (6) county Chicago areas. For installation as a stand-alone traffic signal, connected to a closed loop system or integrated into an advance traffic management system (ATMS), controllers shall be Econolite ASC/3S-1000 or Eagle/Siemens M52 unless specified otherwise on the plans or elsewhere on these specifications. Only controllers supplied by one of the District One approved closed loop equipment suppliers will be allowed. Unless specified otherwise on the plans or these specifications, the controller shall be of the most recent model and software version supplied by the equipment supplier at the time of the traffic signal TURN-ON. A removable controller data key shall also be provided. Individual load switches shall be provided for each vehicle, pedestrian, and right turn over lap phase. The controller shall prevent phases from being skipped during program changes and after all preemption events and shall inhibit simultaneous display of circular yellow and yellow arrow indications.

For integration into an ATMS such as Contracs, Tactics, or TransSuite, the controller shall have the latest version of NTCIP software installed. For operation prior to integration into an ATMS, the controller shall maintain existing close loop management communications.

The contractor shall contact CCDOTH and coordinate to the installation of a standard voice-grade dial-up telephone line to the FULL-ACTUATED CONTROLLER AND CABINET, RAILROAD as called for on the traffic signal installation plans. If the traffic signal installation is part of a traffic signal system, a telephone line is usually not required, unless a telephone line is called for on the traffic signal plans. The contractor shall follow the requirements for the telephone service installation as contained in the current traffic signal special provisions under Master Controller.

- Cabinets shall be designed for NEMA TS2 Type 1 operation. All cabinets shall be pre-wired for a minimum of eight (8) phases of vehicular, four (4) phases of pedestrian, pedestrian pushbutton isolation. Isolation cards will be required for all pedestrian pushbuttons and four (4) phases of overlap operation.
- Revise "conflict monitor" to read "Malfunction Management Unit"
- Cabinets – Provide 1/8" (3.2 mm) thick unpainted aluminum alloy 5052-H32. The surface shall be smooth, free of marks and scratches. All external hardware shall be stainless steel.

- Controller Harness – Provide a TS2 Type 2 “A” wired harness in addition to the TS2 Type 1 harness.
- Surge Protection – Shall be a 120VAC Single phase Modular filter Plug-in type, supplied from an approved vendor.
- BIU – shall be secured by mechanical means.
- Transfer Relays – Solid state or mechanical flash relays are acceptable.
- Switch Guards – All switches shall be guarded.
- Heating – One (1) 200 watt, thermostatically-controlled, electric heater.
- Lighting – One (1) LED Panel shall be placed inside the cabinet top panel and one (1) LED Panel shall be placed on each side of the pull-out drawer/shelf assembly located beneath the controller support shelf. The LED Panels shall be controlled by a door switch. The LED Panels shall be provided from an approved vendor.
- The cabinet shall be equipped with a pull-out drawer/shelf assembly. A 1 ½ inch (38mm) deep drawer shall be provided in the cabinet, mounted directly beneath the controller support shelf. The drawer shall have a hinged top cover and shall be capable of accommodating one (1) complete set of cabinet prints and manuals. This drawer shall support 50 lbs. (23 kg) in weight when fully extended. The drawer shall open and close smoothly. Drawer dimensions shall make maximum use of available depth offered by the controller shelf and be a minimum of 18 inches (610mm) wide.
- Plan & Wiring Diagrams – 12” x 15” (305mm x 406mm) moisture sealed container attached to door.
- Detector Racks – Fully wired and labeled for four (4) channels of emergency vehicle pre-emption and sixteen channels (16) of vehicular operation.
- Field Wiring Labels – All field wiring shall be labeled.
- Field Wiring Termination – Approved channel lugs required.
- Power Panel – Provide a nonconductive shield.
- Circuit Breaker – The circuit breaker shall be sized for the proposed load but shall not be rated less than 30 amps.
- Police Door – Provide wiring and termination for plug in manual phase advance switch.
- When “Full Actuated Controller and Cabinet, Type Super P” is used, the cabinet housing shall have the following nominal outside dimensions: a width of 59 in., a depth of 26 in., and a height of 57 in. The cabinet shall have an integrated Uninterruptible Power Supply compartment which holds the backup system and batteries. The battery portion of the cabinet shall be separated from the controller equipment portion of the cabinet by 1/8 inch thick aluminum 5052-H32. The bottom of



the battery portion of the cabinet shall be 1/8 inch thick aluminum 5052-H-32. The battery cabinet door shall meet the same specifications as the controller portion except that the door hinge is 14 gage stainless steel with 0.12 stainless steel pin. The Battery compartment has three adjustable shelves, full width, 12" deep standard.,

- A GE KeySafe Slimline Pushbutton Lockbox or approved equal shall be provided in the cabinet.

Basis of Payment. This work will be paid for at the contract unit price EACH for INDUCTIVE LOOP DETECTOR, and/or FULL-ACTUATED CONTROLLER AND CABINET or of the type specified, which price shall be payment in full for furnishing and installing the inductive loop detector complete with all harnesses and connections for proper operation, and/or for furnishing and installing the controller complete, including malfunction monitor unit, load switches, flashers, flash transfer relays, etc. in a new cabinet or an existing cabinet as specified, with the necessary connections for proper operation.

**SPECIAL PROVISION  
FOR  
MASTER CONTROLLER**

The installation consist of a master controller shall meet Section 860 of the Standard Specifications except as revised with this Special Provision.

Only Econolite and Eagle NEMA TS2 Type 1 closed loop systems. The latest model and software version of master controller shall be supplied.

Functional requirements in addition to those in section 860, 863 and 1073.04 of the Standard Specification include:

- The system commands shall consist of, as a minimum, six (6) cycle lengths, five (5) offsets, three (3) splits, and four (4) special functions. The system commands shall also include commands for free or coordinated operation.
- Traffic Responsive operation shall consist of the real time acquisition of system detector data, data validation, and the scaling of acquired volumes and occupancies in a deterministic fashion so as to cause the selection and implementation of the most suitable traffic plan.
- Full duplex communication between the master and its local controllers is recommended, but at this time not required. The data rate shall be 1200 baud MINIMUM and shall be capable of speeds to 38,400 or above as technology allows. The controller, when installed in an Ethernet topology, may operate non-serial communications.
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The cabinet shall be provided with an Outdoor Network Interface for termination of the telephone service. It shall be mounted to the inside of the cabinet in a location suitable to provide access for termination of the telephone service at a later date.

- The cabinet shall be equipped with a 9600 baud, auto dial/auto answer, modem. It shall be a US Robotics 33.6K baud rate or equal.
- Each master shall be delivered with up to three (3) complete sets of the latest edition of registered remote monitoring software with full manufacturer's support. Each set shall consist of software on CD, DVD or other suitable media approved by the Engineer, and a bound set of manuals containing loading and operating instruction. One copy of the software and support data shall be delivered to the Agency in charge of system operation. One of these three sets will be provided to the Maintaining Agency's Signal Maintenance Contractor for his use in monitoring the system.
- The approved manufacturer of equipment shall loan CCDOTH one (1) master controller and two (2) intersection controllers of the most recent models and the newest software version to be used for instructional purposes in addition to the equipment to be supplied for the contract.

- The Contractor shall arrange to install a standard voice-grade dial-up telephone line to the master controller. This shall be accomplished through the following process:
- As soon as practical or within one week after the contract has been awarded, the Contractor shall contact the CCDOTH Design Engineer at (312) 603-1730 to request a phone installation.
- A follow-up mail transmittal to the CCDOTH Design Engineer with all required information pertaining to the phone installation is required from the Contractor as soon as possible or within one week after the initial request has been made. The required information to be supplied on the email shall include (but not limited to): A street address for the new traffic signal controller (or nearby address); what type of telephone service is needed. The name and number of the Contractor's employee for the telephone company to contact regarding site work and questions. The phone line installation will then be requested from the County Central Services Office.
- The usual time frame for the activation of the phone line is 8 weeks after the CCDOTH Design Engineer has received the Contractor email. It is, therefore, imperative that the phone line conduit and pull-string be installed by the Contractor in anticipation of this time frame. On jobs which include roadway widening in which the conduit cannot be installed until this widening is completed, the Contractor will be allowed to delay the phone line installation request until a point in time that is 8 weeks prior to the anticipated completion of the traffic signal work. The contractor shall provide the CCDOTH Design Engineer with an expected installation date considering the 8 week processing time.
- The telephone line shall be installed and activated one month before the system final inspection.
- All costs associated with the telephone line installation and activation (not including the contract specified conduit installation between the point of telephone service and the traffic signal controller cabinet) shall be paid for by the CCDOTH Central Services Office (i.e., this will be a CCDOTH phone number not a Contractor phone number).

Basis of Payment. The master controller shall be paid for at the contract unit price EACH for MASTER CONTROLLER, which price shall be payment in full for furnishing and installing the master controller complete with necessary connections for proper operation.

**SPECIAL PROVISION  
FOR  
DETECTOR LOOP**

This work shall consist of furnishing and installing detector loop in accordance with the requirements of Section 886 and 1079 of the Standard Specifications, except as follows:

Description.

This work shall consist of furnishing and installing a detector loop in the pavement.

Procedure.

A minimum of seven (7) working days prior to the Contractor cutting loops, the Contractor shall have the proposed loop locations marked and contact the CCHD Design Engineer at (312) 603-1730 to inspect and approve the layout. When preformed detector loops are installed, the Contractor shall have them inspected and approved prior to the pouring of the portland cement concrete surface, using the same notification process as above.

Failure to provide proper notification may require the Department's Electrical Maintenance Contractor to be called to investigate complaints of inadequate traffic signal timing. All costs associated with these expenses will be paid for by the Contractor at no additional expense to the Department according to Section 109 of the "Standard Specifications."

Installation.

Each loop lead-in shall be placed in a separate conduit from edge of pavement to handhole. Loop detectors shall be installed according to the requirements of the "District 1 Standard Traffic Signal Design Details". Saw-cuts (homerun on preformed detector loops) from the loop to the edge of pavement shall be made perpendicular to the edge of pavement when possible in order to minimize the length of the saw cut (homerun on preformed detector loops) unless directed otherwise by the Engineer or as shown on the plans. Spacing between the lead-ins (holes drilled in the pavement) shall not be less than one (1) foot (300 mm) and shall be located one (1) foot (300 mm) from the edge of pavement. Loop lead-in wires should be twisted to provide a minimum of five (5) turns per foot (fifteen [15] turns per meter) from the loop to the splice.

The cable splice connection of the detector loop and the lead-in cable to the controller shall conform to Section 873 of the Standard Specifications or the requirements set forth in the "District 1 Standard Traffic Signal Design Details".

Each loop detector lead-in wire shall be labeled in the handhole using a water proof tag from an approved vendor secured to each wire with nylon ties. The lead-in wire, including all necessary connections for proper operation, from the edge of pavement to the handhole shall be included in the price of the detector loop.

The detector loop cable insulation shall be labeled with the cable specifications.

Resistance to ground shall be a minimum of 100 megohms under any conditions of weather or moisture. Inductance shall be more than 50 and less than 700 microhenries. Quality readings shall be greater than 5.

## Type I:

- All loops installed in new asphalt pavement shall be installed in the binder course and not in the surface course. The edge of pavement or the curb shall be cut with a 1/4" (6.3 mm) x 4" (100 mm) long sawcut to mark the location of each loop lead-in.
- Loop sealant shall be a two-component thixotropic chemically cured polyurethane from a approved vender.. The sealant shall be installed 1/8" (3 mm) below the pavement surface, if installed above the surface the overlap shall be removed immediately.
- The corners of all loops shall be core drilled with a two (2) inch (50 mm) bit. All joints and cracks in the pavement that the loop crosses must be core drilled.

## Preformed:

This work shall consist of furnishing and installing a rubberized heat resistant preformed traffic signal loop in accordance with the Standard Specifications, except for the following:

- Preformed detector loops shall be installed in new pavement constructed of portland cement concrete using mounting chairs or tied to re-bar or the preformed detector loops may be placed in the sub-base. Loop lead-ins shall be extended to a temporary protective enclosure near the proposed handhole location. The protective enclosure shall provide sufficient protection from other construction activities and may be buried for additional protection.
- Handholes shall be placed next to the shoulder or back of curb when preformed detector loops enter the handhole. Non-metallic coilable duct, included in this pay item, shall be used to protect the preformed lead-ins from back of curb to the handhole.
- Preformed detector loops shall be factory assembled with ends capped and sealed against moisture and other contaminants. Homeruns and interconnects shall be pre-wired and shall be an integral part of the loop assembly. The loop configurations and homerun lengths shall be assembled for the specific application. The loop and homerun shall be constructed using 11/16" (17.2 mm) outside diameter (minimum), 3/8" (9.5 mm) inside diameter (minimum) Class A oil resistant synthetic cord reinforced hydraulic hose with 250 psi (1,720 kpa) internal pressure rating or a similar sized XLPE cable jacket. Hose for the loop and homerun assembly shall be one continuous piece. No joints or splices shall be allowed in the hose except where necessary to connect homeruns or interconnects to the loops. This will provide maximum wire protection and loop system strength. Hose tee connections shall be heavy duty high temperature synthetic rubber. The tee shall be of proper size to attach directly to the hose, minimizing glue joints. The tee shall have the same flexible properties as the hose to insure that the whole assembly can conform to pavement movement and shifting without cracking or breaking. For XLPE jacketed preformed loops, all splice connections shall be soldered, sealed, and tested before being sealed in a high impact glass impregnated plastic splice enclosure. The wire used shall be #16 THWN stranded copper.

The number of turns in the loop shall be application specific. Homerun wire pairs shall be twisted a minimum of four turns per foot. No wire splices will be allowed in the preformed loop assembly. The loop and homeruns shall be filled and sealed with a flexible sealant to insure complete moisture blockage and further protect the wire. The preformed loops shall be constructed to allow a minimum of 6.5 feet of extra cable in the handhole. Six foot (1.8 m) round loop(s) may be substituted for six foot (1.8 m) by six foot (1.8 m) square loop(s) and shall be paid for as 24 feet (7.2 m) of detector loop.

Method of Measurement.

This work will be measured for payment in feet (meters) in place. Type I detector loop will be measured along the sawed slot in the pavement containing the loop and lead-in, rather than the actual length of the wire. Preformed detector loops will be measured along the detector loop and lead-in embedded in the pavement, rather than the actual length of the wire. Detector loop measurements shall include the sawcut and the length of the loop lead-in leading to the edge of pavement. The lead-in wire, including all necessary connections for proper operations, from the edge of pavement to the handhole, shall be incidental to included in the price of the detector loop. Unit duct, trench and backfill, , cable splicing and drilling of pavement or handholes shall be incidental to detector loop quantities included in this item.

Basis of Payment. This work will be paid for at the contract unit price per FOOT (METER) of DETECTOR LOOP, TYPE I or PREFORMED DETECTOR LOOP, as specified in the plans, which price shall be payment in full and for furnishing, installing and testing the Detector Loop and all related connections for proper operation.

**SPECIAL PROVISION  
FOR  
PEDESTRIAN PUSH-BUTTON**

The installation of a Pedestrian Pushbutton shall meet Section 888 and 1074.02 of the Specifications except as revised with this Special Provision.

This item shall consist of furnishing and installing a latching(single call) or non-latching (dual call) push-button assembly which shall be ADA compliant, highly vandal resistant, be pressure activated with minimal movement and can not be stuck in a closed or constant call position. A mounting bracket and/or extension shall be used to assure proper orientation when two pedestrian push buttons are required for one post. The price of the bracket and/or extension shall be included in the cost of the pedestrian push button. The contractor is not allowed to install a push-button assembly with the sign below the push-button in order to meet mounting requirements.

The pedestrian push-button housing shall be constructed of aluminum alloy according to ASTM B 308 6061-T6 and powder coated yellow, unless otherwise noted on the plans. The housing shall be furnished with suitable mounting hardware.

Stations shall be designed to be mounted directly to a post, mast arm pole or wood pole. The station shall be aluminum and shall accept a 3 inch (75mm) round push-button assembly and a regulatory pedestrian instruction sign according to MUTCD, sign series R10-3e 9 x 15 inch sign with arrow(s) for a count-down pedestrian signal. The pedestrian station size without count-down pedestrian signals shall accommodate a MUTCD sign series R10-3b or R10-3d 9 x 12 inch sign with arrow(s).

Stations shall be designed to be mounted to a post, mast arm pole or wood pole. The station shall be aluminum and shall accept a 3 inch (75mm) round push-button assembly and a regulatory pedestrian instruction sign according to MUTCD, sign series R10-3e 9" x 15" sign with arrow(s) for a count-down pedestrian signal. The pedestrian station size without count-down pedestrian signals shall accommodate a MUTCD sign series R10-3b or R10-3d 9" x 12" sign with arrow(s). Pedestrian signs shall be retroreflective.

Pedestrian push buttons and stations shall be mounted to mast arm poles, posts or wood poles as shown on the plans and shall be fully ADA accessible from a paved or concrete surface. See the District's Detail sheets for orientation and mounting details.

Basis of Payment. This work shall be paid for at the contract unit price EACH for PEDESTRIAN PUSH-BUTTON, which price shall be payment in full for furnishing and installing the pushbutton assembly complete.

**SPECIAL PROVISION  
FOR  
CONDUIT**

The installation of a conduit shall meet the requirements of Sections 810, 811 of the Standard Specifications, except as revised with this Special Provision.

Pavement, driveways, and curbs shall not be removed to install electrical conduits.

All conduit installed underground shall have a minimum depth of two feet six inches (2'-6" [760 mm]) except under railroad tracks where the conduit shall be a minimum of five feet (5' [1.52 m]) as measured to the outside diameter of the conduit on the top side.

"All metal conduit installed underground shall be Rigid Steel Conduit unless otherwise indicated on the plans." The ends of rigid metal conduit to be capped shall be threaded, the threads protected with full galvanizing, and capped with a threaded galvanized steel cap. All conduit splices shall be solid threaded couplings. Conduit terminating in junction and pull boxes shall be terminated with hubs, integral box hubs, or integral box bosses.

"All raceways which extend outside of a structure or duct bank but are not terminated in a cabinet, junction box, pull box, handhole, post, pole, or pedestal shall extend a minimum of 300 mm (12") or the length shown on the plans beyond the structure or duct bank. The end of this extension shall be capped and sealed with a cap designed for the conduit to be capped. The ends of rigid metal conduit to be capped shall be threaded, the threads protected with full galvanizing, and capped with a threaded galvanized steel cap.

The ends of rigid nonmetallic conduit and coilable nonmetallic conduit shall be capped with a rigid PVC cap of not less than 3 mm (0.125") thick. The cap shall be sealed to the conduit using a room-temperature-vulcanizing (RTV) sealant compatible with the material of both the cap and the conduit. A washer or similar metal ring shall be glued to the inside center of the cap with epoxy, and the pull cord shall be tied to this ring."

All conduit attached to a structure shall have a minimum of one (1) expansion joint placed within the length of the attached conduit. At each end of the structure the Contractor shall install a weatherproof galvanized cast iron box with a minimum size of 8" (200 mm) x 8" (200 mm) x 6" (150 mm) deep. The installation of these two (2) boxes and any required expansion joints shall be considered incidental to the unit price for conduit attached to structure.

Basis of Payment. This work will be paid for at the contract unit price per FOOT (METER) for UNDERGROUND CONDUIT or CONDUIT ATTACHED TO STRUCTURE, of the type and size specified, which price shall be payment in full for furnishing and installing the conduit and fittings complete. Trench and Backfill will not be paid for separately.



**SPECIAL PROVISION  
FOR  
COILABLE NON-METALLIC CONDUIT**

This work shall consist of furnishing and installing empty Coilable Non-Metallic Conduit (CNC) in trench of the type and size specified. The installation of CNC shall meet all applicable requirements of the Standard Specifications of Section 810, 811 and 1088.01 (c). Polyethylene duct shall be used for all detector loop raceways to handholes. All duct shall be placed a minimum depth of 30 inches (750 mm) or as shown on the contract plans or standard details.

The conduit shall be a polyethylene duct which is intended for underground use and which can be manufactured and coiled or reeled in continuous transportable lengths and uncoiled for further processing and/or installation without adversely affecting its properties of performance. The conduit and its manufacture shall conform to the standards of NEMA Publication TC7, ASTM Standard Specifications D3485 and NEC Article 353.

On temporary traffic signal installations with detector loops, CNC shall be used for detector loop raceways from the saw-cut to 10 feet (3 m) up the wood pole, unless otherwise shown on the plans.

As specified in NEMA TC7, the conduit shall be clearly and durably marked at least every 10 feet (3 meters) with the material designation (HDPE for high density polyethylene), nominal size of the conduit and the name and/or trademark of the manufacturer.

Basis of Payment. All installations of CNC for loop detection shall be included in pay item of DETECTOR LOOP, as specified and not paid for separately.

**SPECIAL PROVISION  
FOR  
ELECTRIC CABLE**

The installation of an electric cable shall meet the requirements of Section 873, 1088.01 and 1076.04 of the Standard Specifications and District One Standard Traffic Signal Design Details with the addition as the following:

The jacket for electric cable in this contract shall be of the polyvinyl chloride type meeting the requirements of IMSA 19-1. (Traffic signal cable shall be solid copper No. 14 unless otherwise specified in the plans or these Special Provisions). No other type of jacket will be allowed, except as follows:

The service cable may have a XLP jacket. Service cable may be single or multiple conductor cable.

Communications and lead-in cable shall have a gray or chrome jacket.

Electric cable sized No. 12 AWG and smaller shall be solid.

The length of cable slack shall be in accordance with District One Standard Traffic Signal Design Details.

The cable splice connection of the detector loop and the lead-in cable to the controller shall conform to Section 873 of the Standard Specifications or to the requirements set forth in the "District 1 Standard Traffic Signal Design Details".

Heat shrink splices shall be used according to "District 1 Standard Traffic Signal Design Details".

Basis of Payment. This work will be paid for at the contract unit price per FOOT (METER) for ELECTRIC CABLE of the type, size and number of conductors as specified., which price shall be payment in full for furnishing the material and making all electrical connections and installing the cable complete, measured as specified.

**SPECIAL PROVISION  
FOR  
RAILROAD INTERCONNECT CABLE**

The cable shall meet the requirements of Section 873 of the "Standard Specifications," except for the following additions:

The cable shall be three conductor standard #14 copper cable in a clear polyester binder, shielded with #36 AWG tinned copper braid with 85% coverage, and insulated with .016" polyethylene (black, blue, red). The jacket shall be black 0.045 PVC or polyethylene.

Basis of Payment. This work shall be paid for at the contract unit price per FOOT (METER) for ELECTRIC CABLE IN CONDUIT, RAILROAD, NO. 14 3C, which price shall be payment in full for furnishing, installing, and making all electrical connections in the traffic signal controller cabinet. Connections in the railroad controller cabinet shall be performed by railroad personnel.

**SPECIAL PROVISION  
FOR  
FIBER OPTIC CABLE**

The installation of a fiber optic electric cable and tracer cable shall meet the requirements of Section 817, 871 and 872 of the Standard Specifications, except as follows:

The Fiber Optic cable shall be installed in conduit or as specified on the plans.

The control cabinet distribution enclosure shall be 24 Port Fiber Wall Enclosure unless otherwise indicated on plans. The fiber optic cable shall provide twelve (12) fibers per tube for the amount of fibers called for in the Fiber Optic Cable pay item in the Contract. Fiber Optic cable may be gel filled or have an approved water blocking tape.

A minimum of six (6) multimode fibers from each cable shall be terminated with approved mechanical connectors in the distribution enclosure. Fibers not being used shall be labeled "SPARE". Fibers not attached to the distribution enclosure shall be capped. A minimum of 13 feet (4 m) of extra slack cable shall be provided for the controller cabinet. The controller cabinet extra slack cable shall be stored as directed by the Engineer.

In order to trace the fiber optic cable after installation, an XLP black insulated copper cable No. 14 AWG shall be pulled in the same conduit as the fiber optic cable. The tracer cable shall be continuous, extended into the controller cabinet and terminated on a barrier type terminal strip mounted on the side wall of the controller cabinet. The barrier type terminal strip and tracer cable shall be clearly marked and identified. The tracer cable will be allowed to be spliced at the handholes only. All tracer cable splices shall be kept to a minimum and shall incorporate maximum lengths of cable supplied by the manufacturer. The tracer cable splice shall use a Western Union Splice soldered with resin core flux and shall be soldered using a soldering iron. All exposed surfaces of the solder shall be smooth. Blow torches or other devices which oxidize copper cable shall not be allowed for soldering operations. The splice shall be covered with a black shrink tube meeting UL 224 guidelines, Type V and rated 600v, minimum length 4" (100 mm) and with a minimum 1" (25 mm) coverage over the XLP insulation, underwater grade.

Testing shall be in accordance with Article 801.13(d). Electronic files of OTDR signature traces shall be provided in the Final project documentation with certification from the Contractor that attenuation of each fiber does not exceed 3.5 dB/km nominal at 850nm for multimode fiber and 0.4 bd/km nominal at 1300nm for singlemode fiber.

Basis of Payment. This work will be paid for at the contract unit price per FOOT (METER) for FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125 MM12F SM24F , which price shall be payment in full for furnishing the material (including connectors) and distribution enclosure and making all connections, splices and installing the cable complete, measured as specified. The tracer cable shall be paid for as ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C per FOOT (METER), which price shall include all associated labor and material for installation.

**SPECIAL PROVISION  
FOR  
GROUNDING OF TRAFFIC SIGNAL SYSTEMS AND GROUNDING CABLE**

All traffic signal systems, equipment and appurtenances shall be properly grounded in strict conformance with the National Electrical Code and meet the requirements of section 806 of the Standard Specifications. See IDOT District 1 traffic signal detail plan sheets for additional information.

The grounding electrode system shall include a ground rod installed with each traffic signal controller concrete foundation and all mast arm and post concrete foundations. An additional ground rod will be required at locations where measured resistance exceeds 25 ohms. Ground rods are included in the applicable foundation or service installation pay item and will not be paid for separately. All steel ground rods shall be copper clad, a minimum of 10' (3.0 m), and 3/4" (20mm) in diameter.

Testing shall be according to Section 801.13(a) (4) and (5).

- a) The grounded conductor (neutral conductor) shall be white color coded. This conductor shall be bonded to the equipment grounding conductor only at the Electric Service Installation. All power cables shall include one neutral conductor of the same size.
- b) The equipment grounding conductor shall be green color coded. The following is in addition to Section 801.04 of the Standard Specifications.
  - 1) Equipment grounding conductors shall be XLP insulated 600V No.6 gauge copper, unless otherwise noted on the plans, and bonded to the grounded conductor (neutral conductor) only at the Electric Service Installation. The equipment grounding conductor is paid for separately and shall be continuous. The Earth shall not be used as the equipment grounding conductor.
  - 2) Equipment grounding conductors shall be bonded, using a UL Listed grounding connector, to all traffic signal mast arm poles, traffic signal posts, pedestrian posts, pull boxes, handhole frames and covers, conduits, and other metallic enclosures throughout the traffic signal wiring system, except where noted herein. Bonding shall be made with a splice and pigtail connection, using a sized compression type copper sleeve, sealant tape, and heat-shrinkable cap. A UL listed electrical joint compound shall be applied to all conductors' terminations, connector threads and contact points. Conduit grounding bushings shall be installed at all conduit terminations including spare or empty conduits. Bonding to existing handhole frames and covers shall be paid for separately.
  - 3) All metallic and non-metallic raceways containing traffic signal circuit runs shall have a continuous equipment grounding conductor, except raceways containing only detector loop lead-in circuits, circuits under 50 volts and/or fiber optic cable will not be required to include an equipment grounding conductor.
  - 4) Individual conductor splices in handholes shall be soldered and sealed with heat shrink. When necessary to maintain effective equipment grounding, a full heat shrink shall be provided over individual conductor heat shrinks.
- c) The grounding electrode conductor shall be similar to the equipment grounding conductor in color coding (green) and size. The grounding electrode conductor is used to connect the ground rod to the equipment grounding conductor and is bonded to ground rods via exothermic welding, UL listed pressure connectors, UL listed clamps.

**Grounding Cable:**

The cable shall meet the requirements of Section 817.02(b) of the "Standard Specifications". Unless otherwise noted on the plans, Traffic Signal Grounding Conductor shall be one conductor, #6 gauge copper, with a green color coded XLP jacket.

Basis of Payment. This work will be paid for at the contract unit price per FOOT (METER) for ELECTRIC CABLE IN CONDUIT, EQUIPMENTGROUNDING NO. 6, 1C, which price shall be payment in full for furnishing labor and material including grounding clamps, cable, splicing, exothermic welds, grounding connectors conduit grounding bushings, and hardware. All ground rods shall be incidental to the cost of associated items for Concrete Foundations and Service Installation.

**SPECIAL PROVISION  
FOR  
GROUNDING EXISTING HANDHOLE FRAME AND COVER**

This work shall consist of all materials and labor required to bond the equipment grounding conductor to the existing handhole frame and handhole cover. All installations shall meet the requirements of the details in "District 1 Standard Traffic Signal Design Details", County special provision of "Grounding of Traffic Signal Systems and Grounding Cable" and applicable portions of the Standard Specifications.

The equipment grounding conductor shall be bonded to the handhole frame and to the handhole cover. Two (2) ½-inch diameter x 1 ¼-inch long hex-head stainless steel bolts, spaced 1.75-inches apart center-to-center shall be fully welded to the frame and to the cover to accommodate a heavy duty UL listed grounding compression terminal. The grounding compression terminal shall be secured to the bolts with stainless steel split-lock washers and nylon-insert locknuts.

Welding preparation for the stainless steel bolt hex-head to the frame and to the cover shall include thoroughly cleaning the contact and weldment area of all rust, dirt and contaminants. The Contractor shall assure a solid strong weld. The welds shall be smooth and thoroughly cleaned of flux and spatter. The grounding installation shall not affect the proper seating of the cover when closed.

The grounding cable shall be paid for separately.

Method of Measurement. Units measured for payment will be counted on a per handhole basis, regardless of the type of handhole and its location.

Basis of Payment. This work shall be paid for at the contract unit price EACH for GROUNDING EXISTING HANDHOLE FRAME AND COVER which shall be payment in full for grounding handhole complete.

**SPECIAL PROVISION  
FOR  
SERVICE INSTALLATION POLE MOUNTED**

This work shall consist of all materials and labor required to install, modify, or extend the electric service installation. All installations shall meet the requirements of the "District One Standard Traffic Signal Design Details" and requirements of section 805 of the Standard Specifications except as revised herein.

Materials.

- 50) General. The completed control panel shall be constructed in accordance with UL Std. 508A, Industrial Control Panel, and carry the UL label. Wire terminations shall be UL listed.
- 51) The cabinet shall be UL 50, NEMA Type 4X, unfinished single door design, fabricated from minimum 0.080-inch (2.03 mm) thick Type 5052 H-32 aluminum. Seams shall be continuous welded and ground smooth. Stainless steel screws and clamps shall secure the cover and assure a watertight seal. The cover shall be removable by pulling the continuous stainless steel hinge pin. The cabinet shall have an oil-resistant gasket and a lock kit shall be provided with an internal O-ring in the locking mechanism assuring a watertight and dust-tight seal. The cabinet shall be sized to adequately house all required components with extra space for arrangement and termination of wiring. A minimum size of 14-inches (350 mm) high, 9-inches (225 mm) wide and 8-inches (200 mm) in depth is required. The cabinet shall be channel mounted to a wooden utility pole using assemblies recommended by the manufacturer.
- 52) Surge Protector. Overvoltage protection, with LED indicator, shall be provided for the 120 volt load circuit by the means MOV and thermal fusing technology. The response time shall be <math>< 5n</math> seconds and operate within a range of -40C to +85C. The surge protector shall be UL 1449 Listed.
- 53) Circuit Breakers. Circuit breakers shall be standard UL listed molded case, thermal-magnetic bolt-on type circuit breakers with trip free indicating handles. 120 volt circuit breakers shall have an interrupting rating of not less than 65,000 rms symmetrical amperes. Unless otherwise indicated, the main disconnect circuit breaker for the traffic signal controller shall be rated 60 amperes, otherwise noted on the plans, 120 V and the auxiliary circuit breakers shall be rated 10 amperes, 120 V.
- 54) Fuses, Fuseholders and Power Indicating Light. Fuses shall be small-dimensional cylindrical fuses of the dual element time-delay type. The fuses shall be rated for 600 V AC and shall have a UL listed interrupting rating of not less than 10,000 rms symmetrical amperes at rated voltage. All enclosures shall include a green external power indicator LED light with circuitry as shown in the Electrical Service-Panel Diagram detail sheet. For pole mounted service enclosures, the power indicator light shall be mounted as shown in the detail. For ground mounted enclosures, the power indicator light shall be mounted on the side of the enclosure most visible from the major roadway.
- 55) Ground and Neutral Bus Bars. A single copper ground and neutral bus bar, mounted on the equipment panel shall be provided. Ground and neutral conductors shall be separated on the bus bar. Compression lugs, plus 2 spare lugs, shall be sized to accommodate the cables with the heads of the connector screws painted green for ground connections and white for neutral connections.



- 56) The Contractor shall notify the Commonwealth Edison Marketing Representative a minimum of 30 working days prior to the anticipated date of hook-up. This 30 day advance notification will begin only after the Commonwealth Edison Marketing Representative has received service charge payments from the Contractor. Prior to contacting the Commonwealth Edison marketing representative for service connection, the service installation, controller cabinet and cable must be installed for inspection by Commonwealth Edison.
- 57) Ground Rod. Ground rods shall be copper-clad steel, a minimum of 10' (3.0 meters) in length, and 3/4" (20 mm) in diameter. Ground rod resistance measurements to ground shall be 25 ohms or less. If necessary additional rods shall be installed to meet resistance requirements at no additional cost to the contract.

Installation:

- 58) General. The Contractor shall confirm the orientation of the traffic service installation and its door side with the engineer, prior to installation. All conduit entrances into the service installation shall be sealed with a pliable waterproof material.
- 59) Brackets designed for pole mounting shall be used. All mounting hardware shall be stainless steel. Mounting height shall be as noted on the plans or as directed by the Engineer.

The Contractor must request in writing for service and/or service modification within ten (10) days of contract award and must follow-up with the electric utility to assure all necessary documents and payment are received by the utility. The Contractor shall forward copies of all correspondence between the Contractor and utility company to the County Design Engineer. The loading form to be sent to the utility company shall be furnished by the County Design Engineer. The service agreement and sketch shall be submitted for signature to the County Design Engineer.

The Commonwealth Edison contact phone number is 866-639-3532

Basis of Payment. This work will be paid for at the contract unit price EACH for SERVICE INSTALLATION, POLE MOUNTED, which shall be payment in full for furnishing and installing the service installation complete. SERVICE INSTALLATION, POLE MOUNTED shall include the 3/4" (20 mm) grounding conduit, ground rod, and pole mount assembly. Any charges by the utility company to provide electrical services to the service installation will be paid for in accordance with Article 109.05 of the Standard Specifications.

**SPECIAL PROVISION  
FOR  
SERVICE INSTALLATION GROUND MOUNTED**

This work shall consist of all materials and labor required to install, modify, or extend the electric service installation. All installations shall meet the requirements of the "District One Standard Traffic Signal Design Details" and requirements of section 805 of the Standard Specifications except as revised herein.

Materials.

- 60) General. The completed control panel shall be constructed in accordance with UL Std. 508A, Industrial Control Panel, and carry the UL label. Wire terminations shall be UL listed.
- 61) The cabinet shall be UL 50, NEMA Type 3R unfinished single door design with back panel. The cabinet shall be fabricated from Type 5052 H-32 aluminum with the frame and door 0.125-inch (3.175 mm) thick, the top 0.250-inch (6.350 mm) thick and the bottom 0.500-inch (12.70 mm) thick. Seams shall be continuous welded and ground smooth. The door and door opening shall be double flanged. The door shall be approximately 80% of the front surface, with a full length tamperproof stainless steel 0.075-inch (1.91 mm) thick hinge bolted to the cabinet with stainless steel carriage bolts and nylocks nuts. The locking mechanism shall be slam-latch type with a keyhole cover. The cabinet shall be sized to adequately house all required components with extra space for arrangement and termination of wiring. A minimum size of 40-inches (1000 mm) high, 16-inches (400 mm) wide and 15-inches (375 mm) in depth is required. The cabinet shall be mounted upon a square Type A concrete foundation as indicated on the plans. The foundation is paid for separately.
- 62) Surge Protector. Overvoltage protection, with LED indicator, shall be provided for the 120 volt load circuit by the means MOV and thermal fusing technology. The response time shall be <math>< 5n</math> seconds and operate within a range of -40C to +85C. The surge protector shall be UL 1449 Listed.
- 63) Circuit Breakers. Circuit breakers shall be standard UL listed molded case, thermal-magnetic bolt-on type circuit breakers with trip free indicating handles. 120 volt circuit breakers shall have an interrupting rating of not less than 65,000 rms symmetrical amperes. Unless otherwise indicated, the main disconnect circuit breaker for the traffic signal controller shall be rated 60 amperes, otherwise noted on the plans, 120 V and the auxiliary circuit breakers shall be rated 10 amperes, 120 V.
- 64) Fuses, Fuseholders and Power Indicating Light. Fuses shall be small-dimensional cylindrical fuses of the dual element time-delay type. The fuses shall be rated for 600 V AC and shall have a UL listed interrupting rating of not less than 10,000 rms symmetrical amperes at rated voltage. All enclosures shall include a green external power indicator LED light with circuitry as shown in the Electrical Service-Panel Diagram detail sheet. For pole mounted service enclosures, the power indicator light shall be mounted as shown in the detail. For ground mounted enclosures, the power indicator light shall be mounted on the side of the enclosure most visible from the major roadway.
- 65) Ground and Neutral Bus Bars. A single copper ground and neutral bus bar, mounted on the equipment panel shall be provided. Ground and neutral conductors shall be separated on the bus bar. Compression lugs, plus 2 spare lugs, shall be sized to accommodate the cables with the heads of the connector screws painted green for ground connections and white for neutral connections.

- 66) The Contractor shall notify the Commonwealth Edison Marketing Representative a minimum of 30 working days prior to the anticipated date of hook-up. This 30 day advance notification will begin only after the Commonwealth Edison Marketing Representative has received service charge payments from the Contractor. Prior to contacting the Commonwealth Edison marketing representative for service connection, the service installation controller cabinet and cable must be installed for inspection by Commonwealth Edison.
- 67) Ground Rod. Ground rods shall be copper-clad steel, a minimum of 10' (3.0 meters) in length, and 3/4" (20 mm) in diameter. Ground rod resistance measurements to ground shall be 25 ohms or less. If necessary additional rods shall be installed to meet resistance requirements at no additional cost to the contract.

Installation.

- 68) General. The Contractor shall confirm the orientation of the traffic service installation and its door side with the engineer, prior to installation. All conduit entrances into the service installation shall be sealed with a pliable waterproof material.
- 69) The service installation shall be mounted plumb and level on the foundation and fastened to the anchor bolts with hot-dipped galvanized or stainless steel nuts and washers. The space between the bottom of the enclosure and the top of the foundation shall be caulked at the base with silicone.

The Contractor must request in writing for service and/or service modification within ten (10) days of contract award and must follow-up with the electric utility to assure all necessary documents and payment are received by the utility. The Contractor shall forward copies of all correspondence between the Contractor and utility company to the County Design Engineer. The loading form to be sent to the utility company shall be furnished by the County Design Engineer. The service agreement and sketch shall be submitted for signature to the County Design Engineer.

The Contractor shall make connections to the line side of the circuit breaker and install the remainder of the electric cable in the conduit to the Commonwealth Edison transformer pad or pole.

The Commonwealth Edison contact phone number is 866-639-3532.

Basis of Payment. This work will be paid for at the contract unit price EACH for SERVICE INSTALLATION, GROUND MOUNTED, which price shall be payment in full for furnishing and installing the service installation complete. The Type A concrete foundation which includes the ground rod shall be paid for separately. Any charges by the utility company to provide electrical services to the service installation will be paid for in accordance with Article 109.05 of the Standard Specifications.

**SPECIAL PROVISION  
FOR  
ELECTRIC SERVICE**

The Commonwealth Edison Company or Division of Commonwealth Edison Company shall provide and install all necessary cable, switchgear and transformers on the power pole to be used for the service to the control cabinet as called for on the plans; provide service drops, install rigid steel or fiber portion of the pole riser (rigid steel or fiber conduit and fittings to be furnished by the Contractor); connect service drops to cable brought to service pole by Contractor. Where transformer manholes are used, electrical service shall be as called for on the plans.

The Cook County Department of Transportation and Highways has contacted the power company and secured the location and the cost of electrical facilities. It will be the responsibility of the Electrical Contractor to contact the power company, request and consummate the agreement for these facilities as described herein and at locations as shown on the plans.

Basis of Payment. This work will be paid for at the LUMP SUM price for ELECTRIC SERVICE which work shall include all labor, materials, equipment, tools and incidentals necessary to complete the work as specified herein and as shown on the plans. The Commonwealth Edison Company or Division thereof shall bill the Electrical Contractor direct, for all costs incurred as a result of work done under this Special Provision for which a Lump Sum price of \$\_\_\_\_\_ has been included in the Schedule of Prices.

The above figure includes the standard five (5) percent handling charge for the first \$10,000.00 and one (1) percent (%) for any amount greater than \$10,000.00.

**SPECIAL PROVISION  
FOR  
HANDHOLE**

The installation of a handhole shall meet the requirements of Section 814 of the Standard Specifications, with the addition as the following:

All handholes shall be concrete poured in place against undisturbed earth. No pre-cast concrete handholes will be accepted.

The handholes shall have an inside dimension of 21-1/2" (549 mm) minimum. Frames and lid openings shall match this dimension.

The cover of the handhole shall be labeled "TRAFFIC SIGNALS" with legible raised letters.

All conduits will enter the handhole at a depth of 30" (760 mm) except for the conduits between the curb and handhole for detector loops when the handhole is less than five (5) feet (1.52 m) from the detector loop. All conduit ends should be sealed with a waterproof sealant to prevent the entrance of contaminants into the handhole.

For grounding purposes the handhole frame shall have provisions for a 7/16" (15.875 mm) diameter stainless bolt cast into the frame. The covers shall have a stainless steel threaded stint extended from the eye hook assembly for the purpose of attaching the grounding conductor to the handhole frame and cover.

The minimum wall thickness for heavy duty hand holes shall be 12 inches (300 mm).

Steel cable hooks shall be coated with hot-dipped galvanization in accordance with AASHTO Specification M111. Hooks shall be a minimum of 1/2 inch (12.7mm) diameter with two 90 degree bends and extend into the handhole at least 6 inches (150 mm). Hooks shall be placed a minimum of 12 inches (300 mm) below the lid or lower if additional space is required.

The French drain shall be constructed of crushed stone or gravel, Gradation CA 5 or CA 7, and according to Section 601 of the Standard Specifications.

Basis of Payment. This work will be paid for at the contract unit price EACH for HANDHOLE, HEAVY-DUTY HANDHOLE, or DOUBLE HANDHOLE, which price shall be payment in full for all necessary excavating, backfilling, disposal of unsuitable materials, and furnishing all materials within the limits of the handhole.

**SPECIAL PROVISION  
FOR  
REBUILD EXISTING HANDHOLE  
REBUILD EXISTING HEAVY DUTY HANDHOLE  
REBUILD EXISTING DOUBLE HANDHOLE**

This item shall consist of rebuilding a handhole, heavy duty handhole and/or double handhole at location(s) as shown on the plans or as directed by the Engineer. The work shall consist of removing the frame and cover and the walls of the handhole to a depth of fifteen (15) inches (380 mm) below finished grade.

Upon completion of the above work, for handhole and heavy duty handhole four (4) holes, for the double handhole six (6) holes, four (4) inches (100 mm) in depth and one half (1/2) inch (15 mm) in diameter, shall be drilled into the remaining concrete, for handhole and heavy duty handhole one (1) hole centered on each wall and for the double handhole one (1) hole centered on each side wall and two (2) holes evenly spaced on the front and back walls. Number 3 steel dowels eight (8) inches (200 mm) in length shall be furnished and installed in the drilled holes with masonry epoxy.

All concrete debris shall be removed from the right-of-way to a location approved by the Engineer.

The area adjacent to each wall of the handhole shall be excavated to allow forming. All steel hooks (galvanized), frame and cover and concrete shall be provided to construct a rebuilt handhole, heavy duty handhole or double handhole according to applicable portions of Section 814 of the Standard Specifications. If the Contractor damages the existing frame and cover, the Contractor shall be responsible for replacing the frame and cover at no cost to the County.

Any pavement or asphalt surface removal required to install the new concrete shall have straight and neat edges using a method approved by the Engineer. Care shall be taken to protect the existing traffic signal cable. Any cable damage shall be reported immediately and repaired as directed by the Area Traffic Signal Engineer.

**Rebuild Existing Handhole to Heavy-Duty Handhole;**

All steel hooks, handhole frame, cover, and concrete shall be provided to construct a rebuilt heavy duty handhole according IDOT Standard.

**Basis of Payment.** This work will be paid for at the contract unit price EACH for REBUILD EXISTING HANDHOLE, REBUILD EXISTING HEAVY DUTY HANDHOLE, REBUILD EXISTING DOUBLE HANDHOLE, REBUILD EXISTING HANDHOLE TO HEAVY DUTY HANDHOLE which price shall be payment in full for all labor, all materials, and equipment necessary to complete the work described above and as indicated in the Plans.

**SPECIAL PROVISION  
FOR  
CONCRETE FOUNDATION**

The installation of a concrete foundation shall meet the requirements of Section 106.01, 878 and 1006.09 of the Standard Specifications, the Standard Drawing for Concrete Foundations and District One Standard Traffic Signal Design Details with the addition as the following:

All anchor bolts shall be according to Section 1006.09, except all anchor bolts shall be hot dipped galvanized a minimum of 12 in. (300 mm) from the threaded end.

All iron and steel products, which are to be incorporated into work shall be domestically manufactured or produced and fabricated. The contractor shall obtain from the iron or steel producer and/or fabricator, in addition to the mill analysis, a certification that all iron or steel materials meet these domestic source requirements.

Foundations used for Combination Mast Arm Poles shall provide an extra 2-1/2 inch (65 mm) raceway.

No foundation is to be poured until the Resident Engineer gives approval as to the depth of the foundation.

Basis of Payment: This work will be paid for at the contract unit price per FOOT (METER) of depth for

- CONCRETE FOUNDATION, TYPE A
- CONCRETE FOUNDATION, TYPE C
- CONCRETE FOUNDATION, TYPE D
- CONCRETE FOUNDATION, TYPE E - 30" (750 mm) Dia.
- CONCRETE FOUNDATION, TYPE E - 36" (900 mm) Dia.
- CONCRETE FOUNDATION, TYPE E - 42" (900 mm) Dia.

which price shall be payment in full for all necessary excavating or drilling, back filling, disposal of unsuitable material, form work, ground rods and furnishing all materials within the limits of the foundation.

**PECIAL PROVISION  
FOR  
MODIFY EXISTING TYPE "D" FOUNDATION**

The installation of a concrete foundation shall meet the requirements of District One Standard Traffic Signal Design Details with the addition as the following:

This item shall consist of the partial removal of an existing Type "D" Foundation at the location shown on the plans, or as directed by the Engineer. The existing foundation shall be removed to a depth of at least twelve (12) inches below finished grade. The disposal of the concrete debris outside of the right-of-way shall be included in this item. The existing conduit shall remain in place and shall be carefully protected. The new conduits from the double handhole shall be installed, if required, as shown on the plans.

Upon completion of the above work, holes for steel dowels of the size indicated shall be drilled in the remaining concrete where indicated on the drawings.

The adjacent area shall be excavated and forming with anchor bolts and new conduit stubs provided to provide a concrete foundation for a controller cabinet. The contractor shall follow the recommendations of the manufacturer, subject to approval of the Engineer, in forming and constructing the foundation.

Provide a concrete apron in front of the Type IV or V cabinet shall be 36 in. x 48 in. x 5 in. (915 mm X 1220 mm X 130 mm) on the side of the access door to the controller to facilitate servicing the controller.

Anchor bolts shall be new and shall meet all the requirements of Section 1006.09 and 1077.01 of the Standard Specifications.

All anchor bolts shall be hot dipped galvanized the full length of the anchor bolt including the hook.

Basis of Payment. This work shall be paid for at the contract unit price EACH for MODIFY EXISTING TYPE "D" FOUNDATION, which price shall be payment in full for all labor, materials and equipment necessary to complete the work described above and as indicated on the drawings. The removal of the existing traffic signal controller shall be incidental to this pay item, as well as the pulling and reinstalling of the existing cable from conduit.



**SPECIAL PROVISION  
FOR  
REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT**

The removal of existing traffic signal equipment shall meet the requirements of Section 895.05 of the Standard Specifications, except as follows:

This work shall consist of removing the existing traffic signal equipment at an intersection as listed and as shown on the plans.

All equipment to be returned to an Agency shall be delivered by the Contractor to the Agency's Traffic Signal Maintenance Contractor's main facility. The Contractor shall contact the Agency's Electrical Maintenance Contractor to schedule an appointment to deliver the equipment. No equipment will be accepted without a prior appointment. All equipment shall be delivered within 30 days of removing it from the traffic signal installation. The Contractor shall provide 5 copies of a list of equipment that is to remain the property of the Agency, including model and serial numbers, where applicable. A list of equipment shall be signed by the Agency's Electrical Maintenance Contractor and mail to the County Engineer at . The Contractor shall also provide a copy of the contract plan or special provision showing the quantities and type of equipment. Controllers and peripheral equipment from the same location shall be boxed together (equipment from different locations may not be mixed) and all boxes and controller cabinets shall be clearly marked or labeled with the location from which they were removed. If equipment is not returned with these requirements, it will be rejected by the Agency's Electrical Maintenance Contractor. The Contractor shall be responsible for the condition of the traffic signal equipment from the time Contractor takes maintenance of the signal installation until the acceptance of a receipt drawn by the Agency's Electrical Maintenance Contractor indicating the items have been returned in good condition.

The traffic signal equipment which is to be removed and is to become the property of the Contractor shall be disposed of by them outside the right-of-way at their expense.

All equipment is to be disassembled so as to make for easy loading and storage into Agency stock as per the Engineers instructions.

Traffic signal equipment which is lost or not returned to the Department for any reason shall be replaced with new equipment meeting the requirements of these Specifications at no cost to the contract.

Basis of Payment. This work will be paid for at the contract unit price EACH for REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT per intersection which price shall be payment in full for removing the equipment, and storing and/or disposing of it as required. The salvage value of the equipment retained by the Contractor shall be reflected in this contract unit price.

**SPECIAL PROVISION  
FOR  
TEMPORARY TRAFFIC SIGNAL INSTALLATION**

This item shall consist of furnishing, installing, maintaining and removing a temporary traffic signal installation at an existing intersection as shown on the plans and as described herein including but not limited to temporary signal heads, emergency vehicle priority systems, interconnect, vehicle detectors, uninterruptible power supply, and signing. Temporary traffic signal controllers and cabinets interconnected to railroad traffic control devices shall be new. When temporary traffic signals will be operating within a county or local agency Traffic Management System, the equipment must be NTCIP compliant and compatible with the current operating requirements of the Traffic Management System.

The energy charges for the operation of the traffic signal installation shall be paid for by others if the installation is replacing an existing signal. Otherwise charges shall be paid for under Section 109.05 of the Road Specifications.

Only an approved Equipment Vendor will be allowed to assemble the temporary traffic signal cabinet. Only controllers supplied by an approved Equipment Vendor will be approved for use on temporary traffic signals. Only an approved Closed Loop Equipment Vendor shall assemble and test a temporary railroad interconnected traffic signal cabinet. (Refer to Traffic Actuated Controller Specification). A representative of the approved control Equipment Vendor shall be present at the temporary traffic signal turn-on inspection.

The installation of a temporary traffic signal installation shall meet the requirements of Section 890 and 801.11 of the Standard Specifications and the Standard Drawings, except as follows:

Equipment. The Contractor shall provide the following:

- All control equipment for the temporary traffic signals shall be furnished by the Contractor unless otherwise stated in the plans. On projects with multiple temporary traffic signal installations, all controllers shall be of the same manufacturer brand and model number with current software installed.
- Only controllers supplied by one of the Cook County Highway Department approved closed loop equipment manufacturers will be approved for use at temporary signal locations. Controllers used for temporary traffic signals shall be fully actuated NEMA microprocessor based with RS232 data entry ports compatible with the latest revision of monitoring software approved CCDOTH or District 1 installed in NEMA TS2 cabinets with 8 phase back panels, capable of supplying 255 seconds of cycle length and individual phase length settings up to 99 seconds. On projects with one lane open and two way traffic flow, such as bridge deck repairs, the temporary signal controller shall be capable of providing an adjustable all red clearance setting of up to 30 seconds in length.
- All temporary traffic signal controllers shall meet or exceed the requirements of section 857 with regards to internal time coordination and preemption. The controller settings shall be set in the field as directed by the Engineer.
- All railroad interconnected temporary controllers, cabinets and peripheral equipment shall be new and shall satisfy the requirements of Article 857.02 of the Standard Specifications as modified herein. Only

controllers and cabinet supplied by one of the IDOT district 1 approved closed loop equipment manufactures will be allowed.

- All temporary traffic signal cabinets shall have a closed bottom made of aluminum alloy. The bottom shall be sealed along the entire perimeter of the cabinet base to ensure a water, dust and insect-proof seal. The bottom shall provide a minimum of two (2) 100 mm (4 inch) diameter holes to run the electric cables through. The 100 mm (4 inch) diameter holes shall have a bushing installed to protect the electric cables and shall be sealed after the electric cables are installed.
- Grounding shall be provided for the temporary traffic signal cabinet meeting or exceeding the applicable portions of the National Electrical Code, Section 806 of the Standard Specifications and shall meet the requirements of the District 1 and Cook County Traffic Signal Specifications for "Grounding of Traffic Signal Systems".
- All traffic signal sections shall be of the 12" (300 mm) type and Pedestrian signal sections shall be 16 inch (406mm) x 18 inch (457mm). Traffic signal section shall be LED with expandable view, unless otherwise approval by the Engineer. Pedestrian signal heads shall be Light Emitting Diode (LED) Pedestrian Countdown Signal Heads except when a temporary traffic signal is installed at an intersection interconnected with a railroad grade crossing. When a temporary traffic signal is installed at an intersection interconnected with a railroad grade crossing, Light Emitting Diode (LED) Pedestrian Signal Heads shall be furnished. The temporary traffic signal heads shall be placed as indicated on the temporary traffic signal plan or as directed by the Engineer. If no traffic staging is in place or will not be staged on the day of the turn on, the temporary traffic signal installation shall have the signal head displays, signal head placements and controller phasing match the existing traffic signal, at the time of the turn on. The Contractor shall furnish enough cable slack to relocate heads to any position on the span wire or at locations illustrated on the plans for construction staging. The temporary traffic signal shall remain in operation during all signal head relocations. Each temporary traffic signal head shall have its own cable from the controller cabinet to the signal head. Signal heads shall be mounted no less than 17-ft and no more than 25-ft above the crown of the roadway. Signal heads with backplates shall be measured from the bottom of the backplate for minimum clearance and from the top signal section for maximum clearance.

#### Interconnect.

1. Temporary traffic signal interconnect shall be provided using fiber optic cable or wireless interconnect technology as specified in the plans. The Contractor may request, in writing, to substitute the fiber optic temporary interconnect indicated in the contract documents with a wireless interconnect. The Contractor must provide assurances that the radio device will operate properly at all times and during all construction staging. If approved for use by the Engineer, the Contractor shall submit marked-up traffic signal plans indicating locations of radios and antennas and installation details. If wireless interconnect is used, and in the opinion of the engineer, it is not viable, or if it fails during testing or operations, the Contractor shall be responsible for installing all necessary poles, fiber optic cable, and other infrastructure for providing temporary fiber optic interconnect at no cost to the contract.
2. The existing system interconnect and phone lines are to be maintained as part of the Temporary Traffic Signal Installation specified for on the plan. The interconnect shall be installed into the

temporary controller cabinet as per the notes or details on the plans. All labor and equipment required to install and maintain the existing interconnect as part of the Temporary Traffic Signal Installation shall be included in the item Temporary Traffic Signal Installation. When shown in the plans, temporary traffic signal interconnect equipment shall be furnished and installed. The temporary traffic signal interconnect shall maintain interconnect communications throughout the entire signal system for the duration of the project. Any temporary signal within an existing closed loop traffic signal system shall be interconnected to that system using similar brand control equipment at no additional cost to the contract.

3. Temporary wireless interconnect, complete. The radio interconnect system shall be compatible with Eagle or Econolite controller closed loop systems. This item shall include all materials, labor and testing and all temporary wireless interconnect components, at the adjacent existing traffic signal(s) to provide a completely operational closed loop system. to provide the completely operational closed loop system as shown on the plans. The radio interconnects system shall include the following components:
  - a. Rack or Shelf Mounted RS-232 Frequency Hopping Spread Spectrum (FHSS) Radio
  - b. Software for Radio Configuration (Configure Frequency and Hopping Patterns)
  - c. Antennas (Omni Directional or Yagi Directional)
  - d. Antenna Cables, LMR400, Low Loss. Max. 100-ft from controller cabinet to antenna
  - e. Brackets, Mounting Hardware, and Accessories Required for Installation
  - f. RS232 Data Cable for Connection from the radio to the local or master controller
  - g. All other components required for a fully functional radio interconnect system

All controller cabinet modifications and other modifications to existing equipment that are required for the installation of the radio interconnect system components shall be included in this item.

The radio interconnect system may operate at 900Mhz (902-928) or 2.4 Ghz depending on the results of a site survey. The telemetry shall have an acceptable rate of transmission errors, time outs, etc. comparable to that of a hardwire system.

The proposed or existing master controller and telemetry module shall be configured for use with the radio interconnect at a minimum rate of 9600 baud.

The radio interconnect system shall include all other components required for a complete and fully functional telemetry system and shall be installed in accordance to the manufacturers recommendations.

- All existing street name and intersection regulatory signs shall be removed from existing poles and relocated and securely fastened to the signal span wire. The signs shall be relocated to the new and/or existing mast arm poles and posts at no extra cost. Any intersection regulatory signs that are required for the temporary traffic signal shall be provided as shown on the plans or as directed by the Engineer. Relocation, removing, bagging and installing the regulatory signs for the various construction stages shall be provided as shown on the plans or as directed by the Engineer.

- If lighted signs are existing they shall be taken down and stored by the Contractor and reflective street name signs shall be installed on the temporary signal. The existing lighted sign shall be installed at the updated intersection as part of the pay item Relocate Existing Illuminated Street Name Sign.
- All emergency vehicle preemption equipment (light detectors, light detector amplifiers, confirmation beacons, etc.) as shown on the temporary traffic signal plans shall be provided by the Contractor. It shall be the Contractor's responsibility to contact the municipality or fire district to verify the brand of emergency vehicle preemption equipment to be installed prior to the contract bidding. The equipment must be completely compatible with all components of the equipment currently in use by the Agency. All light operated systems shall operate at a uniform rate of 14.035 Hz  $\pm$ 0.002, or as otherwise required by the Engineer, and provide compatible operation with other light systems currently being operated in the County. All labor and material required to install and maintain the emergency vehicle pre-emption installation shall be included in the item Temporary Traffic Signal Installation.
- All temporary traffic signal installations shall have vehicle detection installed as shown on the plans, or as directed by the Engineer. Pedestrian push buttons shall be provided for all pedestrian signal heads/phases as shown on the plans or as directed by the Engineer. All approaches shall have vehicular detection provided by Vehicle Detection System as shown on the plans or as directed by the Engineer. Video vehicle detection system shall be approved by CCDOTH prior to Contractor furnishing and installing. The Contractor shall install, wire, and adjust the alignment of the video vehicle detection system in accordance to the manufacturer's recommendations and requirements. The Contractor shall be responsible for adjusting the alignment of the video vehicle detection system for all construction staging changes and for maintaining proper alignment throughout the project. A representative of the approved control equipment vendor and the video detection vendor shall be present and assist the contractor in setting up and maintaining the video vehicle detection system. An in-cabinet video monitor shall be provided with all video vehicle detection systems and shall be included in the item Temporary Traffic Signal Installation.
- All temporary traffic signal installations shall have Uninterruptable Power Supply (UPS). The UPS cabinet shall be mounted to the temporary traffic signal cabinet and meet the requirements of Uninterruptable Power Supply in Section 862 of the Standard Specification and as modified in the Uninterruptible Power Supply special provision.

All labor and material required to comply with these requirements shall be included in the bid price of temporary traffic signal installation.

Maintenance Procedures. The Contractor shall perform the following maintenance procedures for each temporary installation designated to remain in operation during construction.

The Contractor Shall:

- Have on staff electricians with IMSA Level II certification to provide signal maintenance.
- Patrol and inspect each installation every two (2) weeks for proper alignment of signal heads, light detectors, lamp failures, and general operation of the traffic signal.

- Check all controllers every two (2) weeks, which will include visually inspecting all timing intervals, relays, detectors, and pre-emption equipment to insure that they are functioning properly. This item includes, as routine maintenance, all portions of emergency vehicle pre-emption equipment.
- Provide immediate corrective action to replace burned out lamps or damaged sockets. When lamps are replaced, the reflector and lens shall be cleaned. All replacement lamps shall meet the approval of the Engineer. The Contractor shall repair or replace all defective equipment from any cause whatsoever.
- Maintain in stock at all times a sufficient amount of materials and equipment to provide effective temporary and permanent repairs.
- Provide immediate corrective action when any part or parts of the system fail to function properly. Two far side heads facing each approach shall be considered the minimum acceptable signal operation pending permanent repairs. A near right signal must also be maintained. When repairs at a signalized intersection require that the controller be disconnected and power is available, the Contractor shall place the traffic signal installation on flashing operation. The signals shall flash RED for all directions unless a different indication has been specified by the Engineer.
- The Contractor is required to place stop signs (R1-1-36) at each approach to the intersection as a temporary means of regulating traffic. The Contractor shall furnish and equip all their vehicles assigned to the maintenance of traffic signal installations with a sufficient number of Stop Signs as specified herein. The Contractor shall maintain sufficient number of spare Stop Signs in stock at all times to replace Stop Signs which may be damaged or stolen.
- Replace defective or damaged equipment. If the proper sequence with full detection cannot be obtained immediately, a controller which will provide the proper sequence and full detection shall be installed within twelve (12) hours of removal of the original controller.
- The Contractor shall be required to maintain the existing type of equipment and sequence of operations during the period of time that the original control equipment is being overhauled
- Provide the Engineer with the names, addresses, and telephone numbers of two (2) persons qualified and assigned to the maintenance of the traffic signal installation. These people must be made available 24 hours per day, each and every day of the year for emergency calls by the Engineer.

Respond to all emergency calls from the Department or municipality within one hour after notification and provide immediate corrective action. When equipment has been damaged or becomes faulty beyond repair, the Contractor shall replace it with new and identical equipment. The cost of furnishing and installing the replaced equipment shall be borne by the Contractor at no additional charge to the State or County. The Contractor may institute action to recover damages from a responsible third party. If at any time the Contractor fails to perform all work as specified herein to keep the temporary traffic signal installation in proper operating condition or if the Engineer cannot contact the Contractor's designated personnel, the Engineer shall have the State's or the County's Electrical Maintenance Contractor perform the maintenance work required. The State's or County's Electrical Maintenance Contractor shall bill the Contractor for the total cost of the work. The Contractor shall be responsible for all of the Electrical Maintenance Contractor's cost and liquidated damages of \$1000 per day per

occurrence. The contractor shall pay this bill within thirty (30) days of the date of receipt of the invoice or the cost of such work will be deducted from the amount due the Contractor.

- Automatic Traffic Enforcement equipment, such as Red Light Enforcement cameras, detectors, and peripheral equipment, damaged or not operating properly from any cause, shall be the responsibility of the municipality or the Automatic Traffic Enforcement Company per Permit agreement.
- The Contractor shall be responsible to clear snow, ice, dirt, debris or other condition that obstructs visibility of any traffic signal display.

When temporary traffic signals are to be installed at locations where existing signals are presently operating, the Contractor shall be fully responsible for the maintenance of the existing signal installation as soon as any physical work begins on the contract or any portion thereof until which time the temporary signals are functioning and the existing signals are removed. In addition, a minimum of seven days prior to assuming maintenance of the existing traffic signal installation(s) under this contract, the Contractor shall request that the Resident Engineer contact the Design Engineer at (312) 603-1730 for an inspection of the Installation(s). The Design Engineer shall establish a date and time of inspection and at this time shall check the installation to determine if any corrective work should be done by the State's or County's Electrical Maintenance Contractor or the Municipalities Contractor prior to the Contractor taking over maintenance of the installation. The Resident Engineer, Engineer, and the Contractor shall mutually agree on the date of maintenance transfer to the Contractor for this section.

Temporary Traffic Signals for bridge projects shall follow the State Standards, Standard Specifications, Cook County Specifications and any plans for Bridge Temporary Traffic Signals included in the plans. The installation shall meet the Standard Specifications and all other requirements in this "Temporary Traffic Signal Installation" specification. In addition all electric cable shall be aerially suspended, at a minimum height of 18 feet (5.5 m), on temporary wood poles (Class 5 or better) of 45 feet (13.7 m), minimum height. The signal heads shall be span wire mounted or bracket mounted to the wood pole as shown in the plans or as directed by the Engineer. The Controller cabinet shall be mounted to the wood pole or as directed by the Engineer. Video vehicle detection may be used in place of the detector loops as approved by the Engineer.

#### Temporary Portable Traffic Signal for Bridge Projects.

1. Unless otherwise directed by the Engineer, temporary portable traffic signals shall be restricted to use on roadways of less than 8000 ADT that have limited access to electric utility service, shall not be installed on projects where the estimated need exceeds ten (10) weeks, and shall not be in operation during the period of November through March. The Contractor shall replace the temporary portable traffic signals with temporary span wire traffic signals noted herein at no cost to the contract if the bridge project or Engineer requires temporary traffic signals to remain in operation into any part of period of November through March. If, in the opinion of the engineer, the reliability and safety of the temporary portable traffic signal is not similar to that of a temporary span wire traffic signal installation, the Contractor shall replace the temporary portable traffic signals with temporary span wire traffic signals noted herein at no cost to the contract.
2. The controller and LED signal displays shall meet the Standard Specifications and all other requirements in this TEMPORARY TRAFFIC SIGNAL INSTALLATION specification".

3. Work shall be according to Article 701.18(b) of the Standard Specifications except as noted herein.
4. General.
  - a. The temporary portable bridge traffic signals shall be trailer-mounted units. The trailer-mounted units shall be set up securely and level. Each unit shall be self-contained and consist of two signal heads. The left signal head shall be mounted on a mast arm capable of extending over the travel lane. Each unit shall contain a solar cell system to facilitate battery charging. There shall be a minimum of 12 days backup reserve battery supply and the units shall be capable of operating with a 120 V power supply from a generator or electrical service.
  - b. All signal heads located over the travel lane shall be mounted at a minimum height of 17 feet (5m) from the bottom of the signal back plate to the top of the road surface. All far right signal heads located outside the travel lane shall be mounted at a minimum height of 8 feet (2.5m) from the bottom of the signal back plate to the top of the adjacent travel lane surface.
  - c. The long all red intervals for the traffic signal controller shall be adjustable up to 250 seconds in one-second increments.
  - d. As an alternative to detector loops, temporary portable bridge traffic signals may be equipped with video detection or other approved methods of vehicle detection and traffic actuation.
  - e. All portable traffic signal units shall be interconnected using hardwire communication cable. Radio communication equipment may be used only with the approval of the Engineer. If radio communication is used, a site analysis shall be completed to ensure that there is no interference present that would affect the traffic signal operation. The radio equipment shall meet all applicable FCC requirements.
  - f. The temporary portable bridge traffic signal system shall meet the physical display and operational requirements of conventional traffic signals as specified in Part IV and other applicable portions of the currently adopted version of the Manual on Uniform Traffic Control Devices (MUTCD). The signal system shall be designed to continuously operate over an ambient temperature range between -30 °F (-34 °C) and 120 °F (48 °C). When not being utilized to inform and direct traffic, portable signals shall be treated as nonoperating equipment according to Article 701.11.
  - g. Basis of Payment. This work will be paid for according to Article 701.20(c).

Basis of Payment: This work will be paid for at the contract unit price EACH for TEMPORARY TRAFFIC SIGNAL INSTALLATION, TEMPORARY BRIDGE TRAFFIC SIGNAL INSTALLATION or TEMPORARY PORTABLE BRIDGE TRAFFIC SIGNAL INSTALLATION, which price shall include all costs for the modifications required for traffic staging, changes in signal phasing as required in the Contract plans, video vehicle detection system, any maintenance or adjustment to the video vehicle detection system, the wireless interconnect system complete, fiber optic interconnect system complete all material required, the installation and complete removal of the temporary traffic signal. Sixty percent of the bid price will be paid following approval of each installation. The remaining 40 percent will be paid following removal of each installation.



**SPECIAL PROVISION  
FOR  
MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION**

This item shall consist of maintaining the existing traffic signal installation at an intersection as shown on the plans and as described herein. Full maintenance responsibility shall start as soon as the Contractor begins any physical work on the contract or any portion thereof. If Contract work is started prior to a traffic signal inspection, maintenance of the traffic signal installation(s) will be transferred to the Contractor without an inspection. The energy charges for the operation of the traffic signal installation shall be paid for by others. The maintenance of an existing traffic signal installation shall meet the requirements of Section 801.11 and 850 of the Standard Specifications except as follows:

This item shall include maintenance of all traffic signal equipment at the intersection, including emergency vehicle pre-emption equipment, master controllers, uninterruptible power supply (UPS and batteries) telephone service installations, communications cables, flashing beacons, PTZ cameras, vehicle detection, handholes, lighted signs and conduit to adjacent intersections, and other traffic signal equipment, but shall not include Automatic Traffic Enforcement equipment, such as Red Light Enforcement cameras, detectors, or peripheral equipment, not owned by the State and County. This equipment is operated and maintained by the local municipality and should be de-activated while on contractor maintenance.

Regional transit, County, State and other agencies may also have equipment connected to existing traffic signal or peripheral equipment such as PTZ cameras, switches, transit signal priority (TSP and BRT) servers, radios and other devices that shall be included with traffic signal maintenance at no additional cost to the contract.

Seven days prior to assuming maintenance of the existing traffic signal installation(s) under this contract, the Contractor shall request that the Resident Engineer contact the Cook County Design Engineer at (312) 603-1730 for an inspection of the installation(s). The Design Engineer shall establish a date and time of inspection and at this time shall check the installation to determine if any corrective work should be done by the State, the County, or the Municipalities Electrical Maintenance Contractor prior to the Contractor taking over the maintenance of the installation(s). The Resident Engineer, the Design Engineer, and the State, County, or Municipality Maintenance Contractor and the Contractor shall mutually agree on the date of maintenance transfer to the Contractor for this contract.

Maintenance Procedures The Contractor shall perform the following maintenance procedures for each existing installation designated to remain in operation during construction:

- Have on staff electricians with IMSA Level II certification to provide signal maintenance. A copy of the certification shall be immediately available upon request of the Engineer.
- Patrol and inspect each installation every two (2) weeks for proper alignment of signal heads, light detectors, lamp failures, and general operation of the traffic signal.
- Check all controllers every two (2) weeks, which will include visually inspecting all timing intervals, relays, detectors, and pre-emption equipment to insure that they are functioning properly. This item includes, as routine maintenance, all portions of emergency vehicle pre-emption equipment. The Contractor shall check signal system communications and phone lines to assure proper operation. This

item includes, as routine maintenance, all portions of emergency vehicle pre-emption equipment. Prior to the traffic signal maintenance transfer, the contractor shall supply a detailed maintenance schedule that includes dates, locations, names of electricians providing the required checks and inspections along with any other information requested by the Engineer.

- Provide immediate corrective action to replace burned out lamps or damaged sockets. When lamps are replaced, the reflector and lens shall be cleaned. All replacement lamps shall meet the approval of the Engineer. The Contractor shall repair or replace all defective equipment from any cause whatsoever.
- Maintain in stock at all times a sufficient amount of materials and equipment to provide effective temporary and permanent repairs.
- Provide immediate corrective action when any part or parts of the system fail to function properly. Two far side heads facing each approach shall be considered the minimum acceptable signal operation pending permanent repairs. A near right signal must also be maintained. When repairs at a signalized intersection require that the controller be disconnected or otherwise removed from normal operation, and power is available, the Contractor shall place the traffic signal installation on flashing operation. The signals shall flash RED for all directions unless a different indication has been specified by the Engineer. The Contractor is required to place stop signs (R1-1-36) at each approach to the intersection as a temporary means of regulating traffic. When the signals operate in flash, the Contractor shall furnish and equip all his vehicles assigned to the maintenance of traffic signal installations with a sufficient number of Stop Signs as specified herein. The Contractor shall maintain sufficient number of spare Stop Signs in stock at all times to replace Stop Signs which may be damaged or stolen.
- Replace defective or damaged equipment. If the proper sequence with full detection cannot be obtained immediately, a controller which will provide the proper sequence and full detection shall be installed within twelve (12) hours of removal of the original controller.
- The Contractor shall be required to maintain the existing type of equipment and sequence of operations during the period of time that the original control equipment is being overhauled.
- Provide the Engineer with the names, addresses, and telephone numbers of two (2) persons qualified and assigned to the maintenance of the traffic signal installation. These people must be made available 24 hours per day, each and every day of the year for emergency calls by the Engineer.
- Respond to all emergency calls from the Department or others within one hour after notification and provide immediate corrective action. When equipment has been damaged or becomes faulty beyond repair, the Contractor shall replace it with new and identical equipment. The cost of furnishing and installing the replaced equipment shall be borne by the Contractor at no additional charge to the State or County. The Contractor may institute action to recover damages from a responsible third party. If at any time the Contractor fails to perform all work as specified herein to keep the traffic signal installation in proper operating condition or if the Engineer cannot contact the Contractor's designated personnel, the Engineer shall have the State's or the County's Electrical Maintenance Contractor perform the maintenance work required. The State's or County's Electrical Maintenance Contractor shall bill the Contractor for the total cost of the work. The Contractor shall be responsible for all of the Electrical Maintenance Contractor's cost and liquidated damages of \$1000 per day per occurrence. The

contractor shall pay this bill within thirty (30) days of the date of receipt of the invoice or the cost of such work will be deducted from the amount due the Contractor. The Contractor shall allow the Electrical Maintenance Contractor to make reviews of the Existing Traffic Signal Installation that has been transferred to the Contractor for Maintenance.

- Traffic signal equipment which is lost or not returned to the Department for any reason shall be replaced with new equipment meeting the requirements of the Standard Specifications and these special provisions.
- Any proposed activity in the vicinity of a highway-rail grade crossing must adhere to the guidelines set forth in the current edition of the Manual on Uniform Traffic Control Devices (MUTCD) regarding work in temporary traffic control zones in the vicinity of highway-rail grade crossings which states that lane restrictions, flagging, or other operations shall not create conditions where vehicles can be queued across the railroad tracks. If the queuing of vehicles across the tracks cannot be avoided, a uniformed law enforcement officer or flagger shall be provided at the crossing to prevent vehicles from stopping on the tracks, even if automatic warning devices are in place.
- Equipment included in this item that is damaged or not operating properly from any cause shall be replaced with new equipment meeting current District One traffic signal specifications and provided by the Contractor at no additional cost to the Contract and/or owner of the traffic signal system, all as approved by the Engineer. Final replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection otherwise the traffic signal installation will not be accepted. Cable splices outside the controller cabinet shall not be allowed.
- Automatic Traffic Enforcement equipment, such as Red Light Enforcement cameras, detectors, and peripheral equipment, damaged or not operating properly from any cause, shall be the responsibility of the municipality or the Automatic Traffic Enforcement Company per Permit agreement.
- The Contractor shall be responsible to clear snow, ice, dirt, debris or other condition that obstructs visibility of any traffic signal display.
- The Contractor shall maintain the traffic signal in normal operation during short or long term loss of utility or battery back-up power at critical locations designated by the Engineer. Critical locations may include traffic signals interconnected to railroad warning devices, expressway ramps, intersection with an SRA route, critical corridors or other locations identified by the Engineer. Temporary power to the traffic signal must meet applicable NEC and OSHA guidelines and may include portable generators and/or replacement batteries.
- Temporary replacement of damaged or knockdown of a mast arm pole assembly shall require construction of a full or partial span wire signal installation or other method approved by the Engineer to assure signal heads are located overhead and over traveled pavement. Temporary replacement of mast arm mount signals with post mount signals will not be permitted.
- Any shutdown of the traffic signal installation, which exceeds fifteen (15) minutes, must have prior approval of the Engineer. Approval to shut down the traffic signal installation will only be granted during the period extending from 10:00 a.m. to 3:00 p.m. on weekdays. Shutdowns shall not be allowed during inclement weather or holiday periods.

Basis of Payment. This work will be paid for at the contract unit price EACH for MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION, which price shall be payment in full for all materials, equipment, and labor necessary to maintain the existing traffic signals. Each intersection shall be paid for separately. Maintenance of a standalone and or not connected flashing beacon shall be paid for at the contract unit price EACH for MAINTENANCE IF EXISTING FLASHING BEACON INSTALLATION. Each flashing beacon will be paid for separately. Following the completion of the traffic signal maintenance transfer to the Contractor, 30 percent of the bid price will be paid. Following the traffic signal maintenance transfer to County, state and/or local agency, 30 percent of the bid price will be paid. The remaining 40 percent will be paid when all items on the punch list are done to the satisfaction of the engineer.

**SPECIAL PROVISION  
FOR  
EMERGENCY VEHICLE PRIORITY SYSTEM**

The installation of an emergency vehicle priority system shall meet Sections 887 and 1072 of the Standard Specifications, except as revised with this Special Provision.

It shall be the Contractor's responsibility to contact the municipality or Fire District to verify the brand of emergency vehicle pre-emption equipment to be installed prior to the Contract bidding. The equipment must be completely compatible with all components of the equipment currently in use by the Agency. A letter from the Agency is to be included with equipment submittals indicating what brand of equipment is acceptable to the Agency.

All new installations shall be equipped with confirmation beacons as shown on the "District 1 Standard Traffic Signal Design Details". The confirmation beacon shall consist of a 6 watt Par 38 LED flood lamp with a 30 degree light spread or a 7 watt Par 30 LED flood lamp with a 15 degree or greater spread, maximum 7 watt energy consumption at 120V and a 2000 hour warranty for each direction of pre-emption. The lamp shall have an adjustable mount with a weatherproof enclosure for cable splicing. All hardware shall be cast aluminum or stainless steel. Holes drilled into signal poles, mast arms, or posts shall require rubber grommets. In order to maintain uniformity between communities, the confirmation beacons shall indicate when the control equipment receives the pre-emption signal. The pre-emption movement shall be signalized by a flashing indication at the rate specified by Section 4L.01 of the "Manual On Uniform Traffic Control Devices" and other applicable sections of future editions. The stopped pre-empted movements shall be signalized by a continuous indication.

All light operated systems shall include security and transit preemption software and operate at a uniform rate of 14.035 Hz +0.002, or as otherwise required by the Engineer, and provide compatible operation with other light systems currently being operated in the County.

This item shall include any required modifications to an existing Traffic Signal Controller as a result of the addition of the Emergency Vehicle Priority System. Any cost associated with modifications to the controller shall be included in the pay item LIGHT DETECTOR AMPLIFIER.

The pre-emption detector amplifier shall be paid for on a basis of one (1) each per intersection controller and shall provide operation for all movements required in the pre-emption phase sequence.

Basis of Payment. This work will be paid for at the Contract unit price EACH for LIGHT TRANSMITTER, LIGHT DETECTOR, or LIGHT DETECTOR AMPLIFIER which price shall be payment in full for furnishing and installing the light transmitter, light detector, or light detector amplifier complete, with necessary connections for proper operation. The furnishing and installing of a confirmation beacon shall be included in the cost of the LIGHT DETECTOR.

The lead-in cable will be paid for at the contract unit price per FOOT (METER) for EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE, NO. 20 3/C or EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE AERIAL SUSPENDED, NO. 20 3/C which price shall be payment in full for furnishing and installing the lead-in cable and making all electrical connections. The electric cable shall be shielded and have three (3) stranded conductors colored blue, orange, and yellow with a stranded tinned copper drain wire. The cable shall meet the requirements of the manufacturer of the Emergency Vehicle Priority System Equipment.

**SPECIAL PROVISION  
FOR  
RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT**

This item shall consist of relocating the existing emergency vehicle priority system light detector (single or dual channel) from an existing traffic signal mast arm or post to the new traffic signal mast arm or post and connecting it to an emergency vehicle priority system phasing unit as indicated in the plans or as directed by the Engineer. If the existing Emergency Vehicle Priority System, Detector Unit Assembly includes a Confirmation Beacon, the Confirmation Beacon shall also be relocated and connected to the Emergency Vehicle Priority System, Detector Unit and shall be included at no cost in this item.

The work shall include disconnecting light detector and reconnecting it to the new cable.

The emergency vehicle system is not to be inoperative for more than -eight (8) hours and the Contractor must notify the municipality or Fire Protection District seventy-two (72) hours prior to the disconnection of the equipment.

Basis of Payment. This item will be paid for at the contract unit price EACH for RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT which price shall be payment in full for disconnecting the existing light detector, relocating and connecting the light detector to the new cable complete and operating to the satisfaction of the Engineer. The relocating and connecting the existing confirmation beacon shall be included in the pay item for RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT.

**SPECIAL PROVISION  
FOR  
RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, PHASING UNIT**

This item shall consist of relocating the existing emergency vehicle priority system phasing unit (light detector amplifier) from an existing traffic signal controller to the new traffic signal controller cabinet, as indicated in the plans or as directed by the Engineer.

The work shall include disconnecting the emergency vehicle priority system phasing unit(s) (light detector amplifier) and reconnecting it/them to a new wiring harness which is to be factory wired into the new traffic signal controller cabinet.

The emergency vehicle system is not to be inoperative for more than eight (8) hours and the Contractor must notify the municipality or Fire Protection District seventy-two (72) hours prior to the disconnecting of the equipment.

Basis of Payment. This item will be paid for at the contract unit price EACH for RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, PHASING UNIT which price shall be payment in full for disconnecting the existing phasing unit (light detector amplifier), relocating and connecting the phasing unit (light detector amplifier) to the new wiring harness at its new location complete and operating to the satisfaction of the Engineer.

**SPECIAL PROVISION  
FOR  
CONFIRMATION BEACON SYSTEM**

The installation of a confirmation beacon system shall be installed into an existing emergency vehicle priority system as shown on the plans and as stated herein.

Confirmation Beacon, Single Channel - Where the light detector is used to detect a single direction of traffic, one LED lamp for only that direction shall be provided. If the detector covers opposing directions of traffic and has a single output, a separate lamp for each direction shall be provided but they shall have identical indications.

Confirmation Beacon, Dual Channel - A separate LED lamp with appropriate separate indications for each direction shall be provided.

The confirmation beacon shall consist of a 6 watt Par 38 LED flood lamp with a 30 degree light spread or a 7 watt Par 30 LED flood lamp with a 15 degree or greater spread, maximum 7 watt, energy consumption at 120V and a 2000 hour warranty for each direction of pre-emption. The lamp shall have an adjustable mount with a weatherproof enclosure for cable splicing. All hardware shall be cast aluminum or stainless steel. No new holes may be drilled into signal poles, mast arms, or posts. The Confirmation Beacon shall be mounted to the existing light detector hardware as shown on the mounting detail in the plans. In order to maintain uniformity between communities, the confirmation beacons shall indicate when the control equipment receives the pre-emption signal. The pre-emption movement shall be signaled by a flashing indication at the rate specified by Section 4L.01 of the "Manual on Uniform Traffic Control Devices". The stopped pre-emption movements shall be signaled by a continuous indication.

Any modification required to the existing optical detector installation to meet the requirements of the mounting detail shown in the plans shall be included in this item

Basis of Payment. The confirmation beacon will be paid for at the contract unit price EACH for CONFIRMATION BEACON SYSTEM, which price shall be payment in full for furnishing and installing the confirmation beacon complete, with necessary connections for proper operation. The confirmation beacon system shall be paid for on a basis of one (1) each per intersection and shall provide confirmation beacons for all movements required in the pre-emption system.



**SPECIAL PROVISION  
FOR  
RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM**

Description. This work shall consist of re-optimizing a closed loop traffic signal system according to the following Levels of work.

LEVEL I applies when improvements are made to an existing signalized intersection within an existing closed loop traffic signal system. The purpose of this work is to integrate the improvements to the subject intersection into the signal system while minimizing the impacts to the existing system operation. This type of work would be commonly associated with the addition of signal phases, pedestrian phases, or improvements that do not affect the capacity at an intersection.

LEVEL II applies when improvements are made to an existing signalized intersection within an existing closed loop traffic signal system and detailed analysis of the intersection operation is desired by the engineer, or when a new signalized or existing signalized intersection is being added to an existing system, but optimization of the entire system is not required. The purpose of this work is to optimize the subject intersection, while integrating it into the existing signal system with limited impact to the system operations. This item also includes an evaluation of the overall system operation, including the traffic responsive program.

For the purposes of re-optimization work, an intersection shall include all traffic movements operated by the subject controller and cabinet.

After the signal improvements are completed, the signal shall be re-optimized as specified by an approved Consultant who has previous experience in optimizing Closed Loop Traffic Signal Systems for the IDOT District One and the County. The Contractor shall contact the Engineer at (312) 603-1730 for a listing of approved Consultants. Any signal timing problems/complaints shall be investigated by the Consultant and as requested by the Traffic Signal Design Engineer and resolved to the Department's satisfaction within a three-year period after the first report is submitted to CCDOTH. The consultant will be required to assist in trouble shooting the optimized system for problems encountered with the system at no cost to the County. Trouble shooting shall include (but not limited to) answering complaints, writing letters, making split adjustment, identifying and correcting oscillation problems, etc.. The consultant shall not charge extra man-hours for this three-year trouble shooting period. The Contractor shall contact the Traffic Signal Design Engineer at (312) 603-1730 for a Consultant who is still monitoring the Traffic Signal System or for a listing of approved Consultants. The System Coordination and Timing (SCAT) consultant's name shall be supplied. The letter will be reviewed by the Engineer to determine whether the SCAT consultant to be used is approved.

A listing of existing signal equipment, interconnect information, phasing data, and timing patterns may be obtained from the Department, if available and as appropriate. The existing SCAT Report is available for review at the County office and if the Consultant provides blank computer disks, copies of computer simulation files for the existing optimized system and a timing database that includes intersection displays will be made for the Consultant. The Consultant shall confer with the Engineer prior to optimizing the system to determine if any extraordinary conditions exist that would affect traffic flows in the vicinity of the system, in which case, the Consultant may be instructed to wait until the conditions return to normal or to follow specific instructions regarding the re-optimization.

(a) LEVEL I Re-Optimization

1. The following tasks are associated with LEVEL I Re-Optimization.
  - a. Appropriate signal timings shall be developed for the subject intersection and existing timings shall be utilized for the rest of the intersections in the system.
  - b. Proposed signal timing plan for the new or modified intersection(s) shall be forwarded to County for review prior to implementation.
  - c. Consultant shall conduct on-site implementation of the timings at the turn-on and make fine-tuning adjustments to the timings of the subject intersection in the field to alleviate observed adverse operating conditions and to enhance operations.
2. The following deliverables shall be provided for LEVEL I Re-Optimization.
  - a. Consultant shall furnish to County a cover letter describing the extent of the re-optimization work performed.
  - b. Consultant shall furnish an updated intersection graphic display for the subject intersection to County and to County's Traffic Signal Maintenance Contractor.

(b) LEVEL II Re-Optimization

1. In addition to the requirements described in the LEVEL I Re-Optimization above, the following tasks are associated with LEVEL II Re-Optimization.
  - a. Traffic counts shall be taken at the subject intersection after the traffic signals are approved for operation by the Engineer. Manual turning movement counts shall be conducted from 6:30 a.m. to 9:30 a.m., 11:00 a.m. to 1:00 p.m., and 3:30 p.m. to 6:30 p.m. on a typical weekday from midday Monday to midday Friday and on a Saturday and/or Sunday, as directed by the Engineer, to account for special traffic generators such as shopping centers, educational institutes and special event facilities. The turning movement counts shall identify cars, and single-unit, multi-unit heavy vehicles, and transit buses.
  - b. As necessary, the intersections shall be re-addressed and all system detectors reassigned in the master controller according to the current standard of the County.
  - c. Traffic responsive program operation shall be evaluated to verify proper pattern selection and lack of oscillation and a report of the operation shall be provided to the County.
2. The following deliverables shall be provided for LEVEL II Re-Optimization.
  - a. Consultant shall furnish to the County one (1) copy of a technical report for the optimized system. If a State system/intersection is involved one(1) copy of SCAT report for IDOT shall be furnished. The technical memorandum shall include the following elements:
    - (1) Brief description of the project
    - (2) Printed copies of the analysis output from Synchro (or other appropriate, approved optimization software file)
    - (3) Printed copies of the traffic counts conducted at the subject intersection
    - (4) A Time of Day (TOD) revised chart which includes all intersections split timing, offset and program steps shall be furnished to the County
    - (5) A layout of traffic volumes which includes AM volume, PM volume, MD volume and distance between intersections
    - (6) System detector/Local detector relationship layout, if there is a change.
    - (7) Printed copies of master and local controller data.

- b. Consultant shall furnish to the County two (2) CDs for the optimized system. The CDs shall include the following elements:
- (1) Electronic copy of the technical report in PDF format
  - (2) Revised Synchro files (or other appropriate, approved optimization software file) including the new signal and the rest of the signals in the closed loop system
  - (3) Traffic counts conducted at the subject intersection
  - (4) New or updated intersection graphic display files in ASC and PCX formats and new zone map file with system loops (if changed) for the subject intersection
  - (5) The CD shall be labeled with the County system number and master location, as well as the submittal date and the consultant logo. The CD case shall include a clearly readable label displaying the same information securely affixed to the side and front.

Examples of Time of Day (TOD) chart, layout of traffic volumes and System detector/Local detector relationship layout can be obtained from the County.

The Consultant shall furnish to CCDOTH one copy of the revised SCAT Report in three-ring binders. If the system is maintained by State or other agency, an approval letter from State or other agency shall be furnished to the County. The Consultant also shall furnish to State or other agency one copy of the revised SCAT Report in three-ring binder.

When an intersection under the system is maintenance transferred to the Contractor, the SCAT consultant shall start responding to complaints and make necessary timing adjustments. The Contractor shall hire the same SCAT consultant to work on system timing under construction stages when there is a temporary traffic signal.

Basis of Payment. This work shall be paid for at the contract unit price EACH for RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM – LEVEL I or RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM – LEVEL II, which price shall be payment in full for performing all work described herein per intersection. Following completion of the timings and submittal of specified deliverables, 100 percent of the bid price will be paid. Each intersection will be paid for separately.

**SPECIAL PROVISION  
FOR  
OPTIMIZE TRAFFIC SIGNAL SYSTEM**

Description. This work shall consist of optimizing a closed loop traffic signal system.

OPTIMIZE TRAFFIC SIGNAL SYSTEM applies when a new or existing closed loop traffic signal system is to be optimized and a formal Signal Coordination and Timing (SCAT) Report is to be prepared. The purpose of this work is to improve system performance by optimizing traffic signal timings, developing a time of day program and a traffic responsive program.

After the signal improvements are completed, the signal system shall be optimized as specified by an approved Consultant who has previous experience in optimizing Closed Loop Traffic Signal Systems for the IDOT District One and the County. The Contractor shall contact the Traffic Signal Engineer at (312) 603-1730 for a listing of approved Consultants. Any signal timing problems/complaints shall be investigated by the Consultant and as requested by the Traffic Signal Design Engineer and resolved to the Department's satisfaction within a three-year period after the first report is submitted to CCDOTH. The consultant will be required to assist in trouble shooting the optimized system for problems encountered with the system at no cost to the County. Trouble shooting shall include (but not limited to) answering complaints, writing letters, making split adjustment, identifying and correcting oscillation problems, etc.. The consultant shall not charge extra man-hours for this three-year trouble shooting period. The Contractor shall contact the Traffic Signal Design Engineer at (312) 603-1730 for a Consultant who is still monitoring the Traffic Signal System or for a listing of approved Consultants. The System Coordination and Timing (SCAT) consultant's name shall be supplied. The letter will be reviewed by the Engineer to determine whether the SCAT consultant to be used is approved.

A listing of existing signal equipment, interconnect information, phasing data, and timing patterns may be obtained from the Department, if available and as appropriate. The existing SCAT Report is available for review at the Department office and if the Consultant provides blank computer disks, copies of computer simulation files for the existing optimized system and a timing database that includes intersection displays will be made for the Consultant. The Consultant shall confer with the Traffic Signal Engineer prior to optimizing the system to determine if any extraordinary conditions exist that would affect traffic flows in the vicinity of the system, in which case, the Consultant may be instructed to wait until the conditions return to normal or to follow specific instructions regarding the optimization.

(a) The following tasks are associated with OPTIMIZE TRAFFIC SIGNAL SYSTEM.

1. Appropriate signal timings and offsets shall be developed for each intersection and appropriate cycle lengths shall be developed for the closed loop signal system.
2. Traffic counts shall be taken at all intersections after the permanent traffic signals are approved for operation by the Area Traffic Signal Operations Engineer. Manual turning movement counts shall be conducted from 6:30 a.m. to 9:30 a.m., 11:00 a.m. to 1:00 p.m., and 3:30 p.m. to 6:30 p.m. on a typical weekday from midday Monday to midday Friday and on a Saturday and/or Sunday, as directed by the Engineer, to account for special traffic generators such as shopping centers, educational institutes and special event

facilities. The turning movement counts shall identify cars, and single-unit and multi-unit heavy vehicles.

3. As necessary, the intersections shall be re-addressed and all system detectors reassigned in the master controller according to the current standard of the County.
4. A traffic responsive program shall be developed, which considers both volume and occupancy. A time-of-day program shall be developed for used as a back-up system.
5. Proposed signal timing plan for the new or modified intersection shall be forwarded to the County for review prior to implementation.
6. Consultant shall conduct on-site implementation of the timings and make fine-tuning adjustments to the timings in the field to alleviate observed adverse operating conditions and to enhance operations.
7. Speed and delay studies shall be conducted during each of the count periods along the system corridor in the field before and after implementation of the proposed timing plans for comparative evaluations. These studies should utilize specialized electronic timing and measuring devices.

(b) The following deliverables shall be provided for OPTIMIZE TRAFFIC SIGNAL SYSTEM.

1. Consultant shall furnish to the County one (1) copy of a SCAT Report for the optimized system. The SCAT Report shall include the following elements: If a State system/intersection is involved one (1) copy of SCAT report for IDOT shall be furnished.

<b>Cover Page in color showing a System Map</b>	
<b>Figures</b>	
	1. System overview map – showing system number, system schematic map with numbered system detectors, oversaturated movements, master location, system phone number, cycle lengths, and date of completion.
	2. General location map in color – showing signal system location in the metropolitan area.
	3. Detail system location map in color – showing cross street names and local controller addresses.
	4. Controller sequence – showing controller phase sequence diagrams.
<b>Table of Contents</b>	
<b>Tab 1: Final Report</b>	
	1. Project Overview
	2. System and Location Description (Project specific)
	3. Methodology
	4. Data Collection
	5. Data Analysis and Timing Plan Development
	6. Implementation
	a. Traffic Responsive Programming (Table of TRP vs. TOD Operation)

	<ol style="list-style-type: none"> <li>7. Evaluation             <ol style="list-style-type: none"> <li>a. Speed and Delay runs</li> </ol> </li> <li>8. A Time of Day (TOD) revised chart which includes all intersections split timing, offset and program steps shall be furnished to the County.</li> <li>9. A layout of traffic volumes which includes AM volume, PM volume, MD volume and distance between intersections.</li> <li>10. System detector/Local detector relationship layout.</li> </ol>
<b>Tab 2. Turning Movement Counts</b>	
	<ol style="list-style-type: none"> <li>1. Turning Movement Counts (Showing turning movement counts in the intersection diagram for each period, including truck percentage)</li> </ol>
<b>Tab 3. Synchro Analysis</b>	
	<ol style="list-style-type: none"> <li>1. AM: Time-Space diagram in color, followed by intersection Synchro report (Timing report) summarizing the implemented timings.</li> <li>2. Midday: same as AM</li> <li>3. PM: same as AM</li> </ol>
<b>Tab 4: Speed and Delay Studies</b>	
	<ol style="list-style-type: none"> <li>1. Summary of before and after runs results in two (2) tables showing travel time and delay time.</li> <li>2. Plot of the before and after runs diagram for each direction and time period.</li> </ol>
<b>Tab 5: Environment Report</b>	
	<ol style="list-style-type: none"> <li>1. Environmental impact report including gas consumption, NO2, HCCO improvement.</li> </ol>
<b>Tab 5: Controller Data</b>	
	<ol style="list-style-type: none"> <li>1. Printed copies of master and local controller data</li> </ol>
<b>Tab 6: Electronic Files</b>	
	<ol style="list-style-type: none"> <li>1. Two (2) CDs for the optimized system. The CDs shall include the following elements:             <ol style="list-style-type: none"> <li>a. Electronic copy of the SCAT Report in PDF format</li> <li>b. Copies of the Synchro files for the optimized system</li> <li>c. Traffic counts for the optimized system</li> <li>d. New or updated intersection graphic display files for each of the system intersections and the system graphic display file including system detector locations and addresses.</li> </ol> </li> </ol>

Examples of Time of Day (TOD) chart, layout of traffic volumes and System detector/Local detector relationship layout can be obtained from the County.

The Consultant shall furnish to CCDOTH one copy of the revised SCAT Report in three-ring binders. If the system is maintenance by State or other agency, an approval letter from State or other agency shall be furnished to the County. The Consultant also shall furnish to State or other agency one copy of the revised SCAT Report in three-ring binder.

When an intersection under the system is maintenance transferred to the Contractor, the SCAT consultant shall start responding to complaints and make necessary timing adjustments. The Contractor shall hire the same SCAT consultant to work on system timing under construction stages when there is a temporary traffic signal.

Basis of Payment. The work shall be paid for at the contract unit EACH for OPTIMIZE TRAFFIC SIGNAL SYSTEM, which price shall be payment in full for performing all work described herein for the entire traffic signal system. Following the completion of the Synchro analysis and submittal to the County, State and/or local agency for review, 30 percent of the bid price will be paid. Following the setup and fine tuning of the timings, the speed-delay study, and the TRP programming and final report to County, state and/or local agency for final review, 30 percent of the bid price will be paid. The remaining 40 percent will be paid when the system is working to the satisfaction of the engineer and the report and CD have been submitted.

**SPECIAL PROVISION  
FOR  
MEDIAN REMOVAL AND REPLACEMENT**

This work consists of removing and replacing existing concrete median at locations shown on the plans or when directed by the Engineer, in accordance with the applicable requirements of Sections 440 of the Standard Specifications. The replaced median shall be similar in design to that which is existing.

If the median is partially removed, the Contractor shall machine saw a perpendicular clean joint between that portion of the median to be removed and that which is to remain in place. The depth of removal shall be as directed by the Engineer to accommodate the proposed cross-section of the median replacement material.

If the Contractor removes or damages any median or pavement outside the limits of the designated removal, he shall remove and replace the damaged portion at his own expense to the satisfaction of the Engineer.

Replacement requirements. All base, surface course or subbase removed shall be restored to the original cross section.

The elevation of the surface of the replaced surface course shall not vary more than 1/8" (3mm) from the elevation of the surface of the adjoining surface course. The subgrade, in the case of surface, base course and subbase removal, and the cushion or filler, on the base course in the case of surface course removal, shall be adjusted so that this result will be obtained.

Portland Cement Concrete Base and Surface Courses. Portland cement concrete base or surface courses or natural cement concrete base or surface courses which are removed shall be replaced with portland cement concrete base or surface courses meeting the requirements of Sections 353 and 420, respectively, except that hand methods of consolidating and finishing will be permitted.

Bituminous Surface and Binder Courses. Bituminous Surface and binder courses which are removed shall be replaced by an equal thickness of bituminous materials meeting the requirements of Section 406. The type used shall be that which closely conforms to the type which was removed, and shall be approved in writing by the Engineer.

Gravel or Crushed Stone Base and Surface Courses. Gravel or crushed stone base and surface courses which are removed shall be replaced by an equal thickness of materials meeting the requirements of either Sections 351 or 402. The type used shall be that which closely conforms to the type which was removed, and shall be approved in writing by the Engineer.

Base and Subbase Replacement. All granular or stabilized base and subbase removed shall be replaced by an equal compacted thickness of materials which closely conforms to the original material and shall be compacted to the density requirements of the granular or stabilized base and subbase removed.

Basis of Payment. This work shall be paid for at the contract unit price per SQUARE FOOT (SQUARE METER) for MEDIAN REMOVAL AND REPLACEMENT, which price shall include all labor, material and equipment necessary to complete the work in place, as specified herein and as directed by the Engineer.



**SPECIAL PROVISION  
FOR  
SIDEWALK REMOVAL AND REPLACEMENT**

This work consists of removing and replacing existing concrete sidewalk at locations shown on the plans or when directed by the Engineer, in accordance with the applicable requirements of Sections 440 and 424 of the Standard Specifications. The replaced sidewalk shall be similar in design to that which is existing.

Basis of Payment. This work shall be paid for at the contract unit price per SQUARE FOOT (SQUARE METER) for SIDEWALK REMOVAL AND REPLACEMENT, which price shall include all labor material and equipment necessary to complete the work in place, as specified herein and as directed by the Engineer.

**SPECIAL PROVISION  
FOR  
MAINTENANCE OF LIGHTING SYSTEMS**

Replace Article 801.11 and 801.12 of the Standard Specifications with the following:

Effective the date the Contractor's activities (electrical or otherwise) at the job site begin, the Contractor shall be responsible for the proper operation and maintenance of all existing and proposed lighting systems which are part of, or which may be affected by the work until final acceptance or as otherwise determined by the Engineer.

Before performing any excavation, removal, or installation work (electrical or otherwise) at the site, the Contractor shall initiate a request for a maintenance transfer and preconstruction inspection, as specified elsewhere herein, to be held in the presence of the Engineer and a representative of the party or parties responsible for maintenance preconstruction inspection shall be made no less than seven (7) calendar days prior to the desired inspection date.

Existing lighting systems, when depicted on the plans, are intended only to indicate the general equipment installation of the systems involved and shall not be construed as an exact representation of the field conditions. It remains the Contractor's responsibility to visit the site to confirm and ascertain the exact condition of the electrical equipment and systems to be maintained.

**Maintenance of Existing Lighting Systems**

Existing lighting systems. Existing lighting systems shall be defined as any lighting system or part of a lighting system in service prior to this contract. The contract drawings indicate the general extent of any existing lighting, but whether indicated or not, it remains the Contractor's responsibility to ascertain the extent of effort required for compliance with these specifications and failure to do so will not be justification for extra payment or reduced responsibilities.

**Extent of Maintenance**

Partial Maintenance. Unless otherwise indicated, if the number of circuits affected by the contract is equal to or less than 40% of the total number of circuits in a given controller and the controller is not part of the contract work, the Contractor needs only to maintain the affected circuits. The affected circuits shall be isolated by means of in-line waterproof fuse holders as specified elsewhere and as approved by the Engineer.

Full Maintenance. If the number of circuits affected by the contract is greater than 40% of the total number of circuits in a given controller, or if the controller is modified in any way under the contract work, the Contractor shall maintain the entire controller and all associated circuits.

**Maintenance of Proposed Lighting Systems.**

Proposed Lighting Systems. Proposed lighting systems shall be defined as any lighting system or part of a lighting system which is to be constructed under this contract.

The Contractor shall be fully responsible for maintenance of all items installed under this contract. Maintenance shall include, but not be limited to, any equipment failures or malfunctions as well as equipment damage either by the motoring public, Contractor operations, or other means. The potential cost of replacing or repairing any malfunctioning or damaged equipment shall be included in the bid price of this item and will not be paid for separately.

**Lighting System Maintenance Operations**

The Contractor's responsibility shall include all applicable responsibilities of the Electrical Maintenance Contract, the County Highway Department. These responsibilities shall include the maintenance of lighting units (including sign lighting), cable runs and lighting controls. In the case of a pole knockdown or sign light damage caused by normal vehicular traffic, the Contractor shall promptly clear the lighting unit and circuit discontinuity and restore the system to service.

Responsibilities shall also include weekly night-time patrol of the lighting system, with patrol reports filed immediately with the Engineer and with deficiencies corrected within 24 hours of the patrol. Patrol reports shall be presented on standard forms as designated by the Engineer. Uncorrected deficiencies may be designated by the Engineer as necessitating emergency repairs as described elsewhere herein.

The following chart lists the maximum response, service restoration, and permanent repair time the Contractor will be allowed to perform corrective action on specific lighting system equipment.

INCIDENT OR PROBLEM	SERVICE RESPONSE TIME	SERVICE RESTORATION TIME	PERMANENT REPAIR TIME
Control cabinet out	1 hour	4 hours	7 Calendar days
Hanging mast arm	1 hour to clear	NA	7 Calendar days
Radio problem	1 hour	4 hours	7 Calendar days
Motorist caused damage or leaning light pole 10 degrees or more	1 hour to clear	4 hours	7 Calendar days
Circuit out – Needs to reset breaker	1 hour	4 hours	NA
Circuit out – Cable trouble	1 hour	24 hours	21 Calendar days
Outage of 3 or more successive	1 hour	4 hours	NA
Outage of 75% of lights on one tower	1 hour	4 hours	NA
Outage of light nearest RR crossing approach, islands and gores	1 hour	4 hours	NA
Outage (single or multiple) found on night outage survey or reported to the Maintenance Contractor	NA	NA	7 Calendar days
Navigation light outage	NA	NA	24 hours

Service Response Time - amount of time from the initial notification to the Contract until a patrolman physically arrives at the location.

Service Restoration Time - amount of time from the initial notification to the Contractor until the time the system is fully operational again. (In case of motorist caused damage the undamaged portions of the system are operational.)

Permanent Repair Time -- amount of time from initial notification to the Contractor until the time permanent repairs are made if the Contractor was required to make temporary repairs to meet the service restoration requirement.

Failure to provide this service will result in liquidated damages of \$500 per day per occurrence. In addition, the Department reserves the right to assign any work not complete within this timeframe to the Electrical Maintenance Contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the Electrical Maintenance Contractor within one month after the incident will result in additional liquidated damages of \$500 per month per occurrence. Unpaid bills will be deducted from the cost of the Contract. Repeated failures and/or a gross failure of maintenance shall result in the County's Electrical Maintenance Contractor being directed to correct all deficiencies and the resulting costs deducted from any monies owed the contractor.

Damage caused by the Contactor's operations shall be repaired at no additional cost to the Contract.

#### **Operation of Lighting**

The lighting shall be operation every night, dusk to dawn. Duplicate lighting systems (such as temporary lighting and proposed new lighting) shall not be operated simultaneously. Lighting systems shall not be kept in operation during long daytime periods. The contractor shall demonstrate to the satisfaction of the Engineer that the lighting system is fully operational prior to submitting a pay request. Failure to do so will be grounds for denying the pay request.

Basis of Payment. Maintenance of lighting systems shall be paid for at the contract unit price per CALENDAR MONTH or fraction thereof for MAINTENANCE OF LIGHTING SYSTEM, which shall include all work as described herein.

**SPECIAL PROVISION  
FOR  
CITY ELECTRIC MANHOLES TO BE ADJUSTED**

Description This work shall consist of the adjustment of existing City Electric manholes. The work shall be done in accordance with Section 603 and applicable portions of Section 602 of the Standard Specifications and the Standard Detail for Frame Adjustment shown in the plans, except as herein modified.

Construction Method. This classification shall include all those existing City Electric manholes which are to be adjusted to grade where 2 feet (0.6 meters) or less of masonry will be either added, removed, or rebuilt to bring the specified casting to the finished grade of the proposed improvement.

Backfilling to sub-base elevation shall be done with sand as specified in Article 550.07; however, no separate payment for backfilling will be made under this item and the work will be considered incidental to this item.

Bricks shall meet the requirements of Section 1041.

If in any load of brick more than ten percent are inferior, the whole load will be rejected. If less than ten percent are inferior, the brick may be accepted, provided the Contractor will, at his expense, cut out all inferior bricks, and remove them from the site of the work at once.

With approval of the Engineer, the Contractor may use precast adjusting rings. Adjustment bricks, rings, and structure frames are to be set in a full mortar bed. Shimming of the frame with wood and stones shall not be allowed. The interior of the adjustment shall be "buttered" to the satisfaction of the Engineer. Use of partial bricks will not be allowed. Bricks shall be laid in full header courses only.

Existing frames and lids that are obsolete or damaged shall be replaced when ordered by the Engineer in writing, except that existing frames and lids damaged by the Contractor's operations during construction shall be replaced by the Contractor at his expense.

Removal and patching of pavement around a structure shall be considered as part of the adjustment of that structure, and no additional compensation will be made. Patching of pavement with Bituminous concrete shall not be allowed. Only High Early Strength Concrete meeting the requirements of Section 1001 and 1020 shall be used. Construction shall be in accordance with the applicable portions of Section 503 of the Standard Specifications.

Under no circumstance shall an adjustment not be completed in the same day as it is started. Under no circumstance shall debris be left in the street over night.

The contractor shall stage adjustment work so that traffic flows in a safe manner.

Method of Measurement. This work will be measured on a per each basis which will include up to the first 2 feet (0.6 meters) of required masonry work.

Basis of Payment This work shall be paid for at the contract unit price per EACH for CITY ELECTRIC MANHOLES TO BE ADJUSTED. This price shall be payment in full for excavation, construction, backfilling, concrete, brick, mortar, disposal of surplus excavation, form work and all labor and materials including reinforcement bars and ladder rungs.

**SPECIAL PROVISION  
FOR  
UNINTERRUPTABLE POWER SUPPLY (UPS)**

The furnishing and installation of this item shall meet the requirements of Section 862 and 1074.04 of the Supplemental Specifications and Recurring Special Provisions, except as follows:

The UPS shall have the power capacity to provide normal operation of a signalized intersection that utilizes all LED type signal head optics, for a minimum of ten hours.

The UPS shall additionally include, but not be limited to, a battery cabinet. The UPS shall provide reliable emergency power to the traffic signals in the event of a power failure or interruption.

**Installation**

When a UPS is installed at an existing traffic signal cabinet, the UPS cabinet shall partially rest on the lip of the existing controller cabinet foundation and be secured to the existing controller cabinet by means of at least four (4) stainless steel bolts. The UPS cabinet shall be completely enclosed with the bottom and back constructed of the same material as the cabinet.

When a UPS is installed at a new signal cabinet and foundation, it shall be mounted as shown on the plans. At locations where UPS is installed and Emergency Vehicle Priority System is in use, any existing incandescent confirmation beacons shall be replaced with LED lamps in accordance with the Cook County Emergency Vehicle Priority System specification at no additional cost to the contract. A concrete apron shall be provided and be in accordance with Articles 424 and 202 of the Standard Specifications. The concrete apron shall also, follow the District 1 Standard Traffic Signal Design Detail, Type D or Type C concrete foundation.

This item shall include any required modifications to an existing traffic signal controller as a result of the addition of the UPS including the addition of alarms.

Bypass switch shall completely disconnect the traffic signal cabinet from the utility provider.

**Material:**

The UPS shall be line interactive or double conversion and provide voltage regulation and power conditioning when utilizing utility power. The UPS shall be sized appropriately for the intersection's normal traffic signal operating connected load, plus 20 percent (20%). When installed at a railroad-interconnected intersection the UPS must maintain the railroad pre-emption load, plus 20 percent (20%) of the railroad preemption-operating load. The total connected traffic signal load shall not exceed the published ratings for the UPS. The UPS shall provide a minimum of ten (10) hours of normal operation run-time for signalized intersections with LED type signal head optics at 77 °F (25 °C) (minimum 1000W active output capacity, with 86 percent minimum inverter efficiency).

The UPS shall have a minimum of four (4) sets of normally open (NO) and normally closed (NC) single-pole double-throw (SPDT) relay contact closures, available on a panel mounted terminal block or locking circular connectors, rated at a minimum 120 V/1 A, and labeled so as to identify each contact according to the plans.

The UPS shall be compatible with the County's approved traffic controller assemblies utilizing NEMA TS 1 or NEMA TS 2 controllers and cabinet components for full time operation.

When the intersection is in battery backup mode, the UPS shall bypass all internal cabinet lights, ventilation fans, service receptacles, any lighted street name signs, heater, street lights, any automated enforcement equipment and any other devices directed by the Engineer.

Batteries, inverter/charger and power transfer relay shall be housed in a separate NEMA Type 3R cabinet. The cabinet shall be Aluminum alloy, 5052-H32, 0.125-inch thick and have a natural mill finish.

No more than three batteries shall be mounted on individual shelves for a cabinet housing six batteries and no more than four batteries per shelf for a cabinet housing eight batteries.

The battery cabinet housing shall have the following nominal outside dimensions: a width of 25 in. (785 mm), a depth of 16 in. (440 mm), and a height of 41 to 48 in. (1.1 to 1.3 m). Clearance between shelves shall be a minimum of 10 in. (250 mm).

The door shall be equipped with a two position doorstop, one a 90° and one at 120°.

The door shall open to the entire cabinet, have a neoprene gasket, an Aluminum continuous piano hinge with stainless steel pin, and a three point locking system. The cabinet shall be provided with a main door lock which shall operate with a traffic industry conventional No. 2 key. Provisions for padlocking the door shall be provided.

The battery cabinet shall have provisions for an external generator connection.

The UPS shall include a tip or kill switch installed in the battery cabinet, which shall completely disconnect power from the UPS when the switch is manually activated.

The UPS shall include standard RS-232 and internal Ethernet interface.

The UPS shall incorporate a flanged electric generator inlet for charging the batteries and operating the UPS. The generator connector shall be male type, twist-lock, rated as 15A, 125VAC with a NEMA L5-15P configuration and meets UL and CSA testing and has a weatherproof lift cover plate. Access to the generator inlet shall be from a secured weatherproof lift cover plate or behind a locked battery cabinet police panel.

The bypass switch shall include an internal power transfer relay that allows removal of the battery back-up unit, while the traffic signal is connected to utility power, without impacting normal traffic signal operation.

**Battery System:** All batteries supplied in the UPS shall be either gel cell or AGM type, deep cycle, completely sealed, prismatic lead calcium based, silver alloy, valve regulated lead acid (VRLA) requiring no maintenance. All batteries in a UPS installation shall be the same type; mixing of gel cell and AGM types within a UPS installation is not permitted.

Batteries shall be certified by the manufacturer to operate over a temperature range of -13 to 160 °F (-25 to + 71 °C) for gel cell batteries and -40 to 140 °F (-40 to + 60 °C) for AGM type batteries.

The UPS shall consist of an even number of batteries that are capable of maintaining normal operation of the signalized intersection for a minimum of ten hours. Calculations shall be provided showing the number of batteries of the type supplied that are needed to satisfy this requirement. A minimum of four batteries shall be provided.

Battery Heater mats shall be provided, when gel cell type batteries are supplied.

The warranty for an uninterruptible power supply (UPS) shall cover a minimum of five years from date the equipment is placed in operation; however, the batteries of the UPS shall be warranted for full replacement for a minimum of five years from the date the traffic signal and UPS are placed into service.

The UPS shall be set-up to run the traffic signal continuously, without going to a red flashing condition, when switched to battery power unless otherwise directed by the Engineer. The Contractor shall confirm set-up with the Engineer. The continuous operation mode when switched to battery may require modification to unit connections and these modifications are included in the unit price for this item.

Basis of Payment. This work will be paid for at the contract unit price per EACH for UNINTERRUPTABLE POWER SUPPLY, which price shall be payment in full for furnishing and installing the Uninterruptible Power Supply complete with necessary connections for proper operation. Replacement of Emergency Vehicle Priority System confirmation beacons shall be included in the cost of the UNINTERRUPTABLE POWER SUPPLY item. The concrete apron and earth excavation required shall be included in the cost of this pay item.



**SPECIAL PROVISION  
FOR  
TRAFFIC SIGNAL CABINET LOAD SWITCH**

This work shall consist of furnishing and installing a load switch in an existing traffic signal control cabinet. Load switches installed in a new traffic signal control cabinet are included in the cost of the cabinet. The load switch shall be according to Article 1074.03 of the Standard Specifications.

When a new load switch is being installed to replace an existing load switch, removal of the existing load switch shall be included in the cost of this item.

Basis of Payment. This work will be paid for at the contract unit price EACH for TRAFFIC SIGNAL CABINET LOAD SWITCH, which price shall be payment in full for furnishing and installing the load switch, complete with all necessary connections for proper operation.

**SPECIAL PROVISION  
FOR  
TEMPORARY TRAFFIC SIGNAL TIMING**

Description. This work shall consist of developing and maintaining appropriate traffic signal timings for the specified intersection for the duration of the temporary signalized condition, as well as impact to existing traffic signal timings caused by detours or other temporary conditions.

All timings and adjustments necessary for this work shall be performed by an approved Consultant who has previous experience in optimizing Closed Loop Traffic signal Systems for the County. The Contractor shall contact the Traffic Signal Engineer at (312) 603-1730 for a listing of approved Consultants.

The following tasks are associated with TEMPORARY TRAFFIC SIGNAL TIMINGS.

- (a) Consultant shall attend temporary traffic signal inspection (turn-on) and/or detour meeting, if needed and conduct on-site implementation of the traffic signal timings.
- (b) Make fine-tuning adjustments to the timings in the field to alleviate observed adverse operating conditions and to enhance operations.
- (c) Consultant shall provide monthly observation of traffic signal operations in the field.
- (d) Consultant shall provide on-site consultation and adjust timings as necessary for construction stage changes, temporary traffic signal phase changes, and any other conditions affecting timing and phasing, including lane closures, detours, and other construction activities.
- (e) Consultant shall make timing adjustments and prepare comment responses as directed by the Traffic Signal Engineer.
- (f) Return original timing plan once construction is complete.

Basis of Payment. The work shall be paid for at the contract unit price EACH for TEMPORARY TRAFFIC SIGNAL TIMING, which price shall be payment in full for performing all work described herein per intersection. When the temporary traffic signal installation is turned on and/or detour implemented, 50 percent of the bid price will be paid. The remaining 50 percent of the bid price will be paid following the removal of the temporary traffic signal installation and/or detour.

**SPECIAL PROVISION  
FOR  
COMBINATION LIGHTING AND TRAFFIC SIGNAL SERVICE INSTALLATION, POLE MOUNTED**

The installation of a service installation shall meet the requirements of Section 805 of the Standard Specifications, except as follows:

This item shall consist of furnishing and installing for the Lighting and Traffic Signal System a service disconnect box, 2 or 3 wire mounted on a wood pole as specified below and as shown on the detail drawings and as directed by the Engineer.

All installations shall meet the requirements of the details in the IDOT "Combination Lighting and Traffic Pole Mounting Electric Service Box Detail" and applicable portions of the Specifications. The electrical service installation shall be the electric service disconnecting means and it shall be identified as suitable for use as service equipment.

Materials.

1. General. The completed control panel shall be constructed in accordance with UL Std. 508A, Industrial Control Panel, and carry the UL label. Wire terminations shall be UL listed.
2. The disconnect box shall be NEMA 4X stainless steel, nominally 12"W x 16"H x 8"D with a piano hinged door, steel back panel, fast acting stainless steel enclosure clamps, padlock provisions and door stop kit (Hoffman catalog #A-16H1208SS6LP/A-16P12/A-DSTOPK/C-PMK12, or approved equal). A plastic laminated layout and circuit diagram shall be affixed to the interior side of the enclosure door.
3. All enclosures shall include a green external power indicator LED light with circuitry as shown in the Electrical Service-Panel Diagram detail sheet. For pole mounted service enclosures, the power indicator light shall be mounted as shown in the detail.
4. Surge Protector. Overvoltage protection, with LED indicator, shall be provided for the 120 volt load circuit by the means MOV and thermal fusing technology. The response time shall be <5n seconds and operate within a range of -40C to +85C. The surge protector shall be UL 1449 Listed.
5. Circuit Breakers. Circuit breakers shall be standard UL listed molded case, thermal-magnetic bolt-on type circuit breakers with trip free indicating handles. 120 volt circuit breakers shall have an interrupting rating of not less than 65,000 rms symmetrical amperes. Unless otherwise indicated, the main disconnect circuit breaker for the traffic signal shall be rated 60 amperes with one pole and lighting shall be rated 40 amperes with one pole, otherwise noted on the plans, 120 V and the auxiliary circuit breakers shall be rated 10 amperes, 120 V. A 2-color engraved plastic nameplate, attached with screws and engraved as indicated, shall be provided for each main breaker.
6. Fuses, Fuseholders and Power Indicating Light. Fuses shall be small-dimensional cylindrical fuses of the dual element time-delay type. The fuses shall be rated for 600 V AC and shall have a UL listed interrupting rating of not less than 10,000 rms symmetrical amperes at rated voltage. The

power indicating light shall be LED type with a green colored lens and shall be energized when electric utility power is present.

7. Bus bars, connectors, and lugs shall be copper, insulated and isolated, and configured to prevent shorted conditions from tightening terminations. Lugs and connectors shall be rated for 75°C. Overall bus sections shall be configured behind an insulating barrier shield which is removable for access to connections. The circuit breakers and bus may be part of an approved panel board assembly.
8. The Contractor shall notify the Commonwealth Edison Marketing Representative a minimum of 30 working days prior to the anticipated date of hook-up. This 30 day advance notification will begin only after the Commonwealth Edison Marketing Representative has received service charge payments from the Contractor. Prior to contacting the Commonwealth Edison marketing representative for service connection, the service installation, controller cabinet and cable must be installed for inspection by Commonwealth Edison.
9. Ground Rod. Ground rods shall be copper-clad steel, a minimum of 10' (3.0 meters) in length, and 3/4" (20 mm) in diameter. Ground rod resistance measurements to ground shall be 25 ohms or less. If necessary additional rods shall be installed to meet resistance requirements at no additional cost to the contract.
10. Combination ground and neutral bar shall be configured with separate ground and neutral sections and spare terminals as indicated. The heads of grounding screws shall be painted green. The heads of neutral screw shall be painted white.

#### Installation.

1. General. The Contractor shall confirm the orientation of the traffic service installation and its door side with the engineer, prior to installation. All conduit entrances into the service installation shall be sealed with a pliable waterproof material.
2. Brackets designed for pole mounting shall be used. All mounting hardware shall be stainless steel. Mounting height shall be as noted on the plans or as directed by the Engineer.

The Contractor must request in writing for service and/or service modification within ten (10) days of contract award and must follow-up with the electric utility to assure all necessary documents and payment are received by the utility. The Contractor shall forward copies of all correspondence between the Contractor and utility company to the County Design Engineer. The loading form to be sent to the utility company shall be furnished by the County Design Engineer. The service agreement and sketch shall be submitted for signature to the County Design Engineer.

The Commonwealth Edison contact phone number is 866-639-3532.

Basis of Payment. This work will be paid for at the contract unit price EACH for COMBINATION LIGHTING AND TRAFFIC SIGNAL SERVICE INSTALLATION, POLE MOUNTED, which shall be payment in full for furnishing and installing the service installation complete. COMBINATION LIGHTING AND TRAFFIC

SIGNAL SERVICE INSTALLATION, POLE shall include the 3/4" (20 mm) grounding conduit, ground rod, and pole mount assembly. Any charges by the utility company to provide electrical services to the service installation will be paid for in accordance with Article 109.05 of the Standard Specifications.

**SPECIAL PROVISION  
FOR  
ILLUMINATED STREET NAME SIGN**

Description.

This work shall consist of furnishing and installing a LED internally illuminated street name sign.

Installation

The sign can be mounted on most steel mast arm poles. Mounting on aluminum mast arm pole requires supporting structural calculations. Some older or special designed steel mast arm poles may require structural evaluation to assure that construction of the mast arm pole is adequate for the proposed additional loading. Structural calculations and other supporting documentation as determined by the Engineer shall be provided by the contractor for review by the Department.

The sign shall be located on a steel traffic signal mast arm no further than 8-feet from the center of the pole to the center of the sign at a height of between 16 to 18-feet above traveled pavement.

Signs shall be installed such that they are not energized when traffic signals are powered by an alternate energy source such as a generator or uninterruptible power supply (UPS). The signs shall be connected to the generator or UPS bypass circuitry.

The sign shall be located on a steel traffic signal mast arm no further than 8-feet from the center of the pole to the center of the sign at a height of between 16 to 18-feet above traveled pavement. Mounting hardware shall be from an approved vendor, utilizing stainless steel components.

Materials

The illuminate street name sign shall be as follows.

(a) Description.

The LEDs shall be white in color. The two face LED internally illuminated street name sign shall display the designated street name clearly and legibly in the daylight hours without being energized and at night when energized. White translucent Type ZZ reflective sheeting sign faces with the street name applied in transparent green shall be installed on the street sign acrylic panels which shall be affixed to the interior of the sign enclosure. Sheeting material shall be of one continuous piece. Paneling shall not be allowed. Hinged door(s) shall be provided for easy access to perform general cleaning and maintenance operations. Illumination shall occur with LED Light Engine as specified.

(b) Environmental Requirements.

The LED lamp shall be rated for use in the ambient operating temperature range of -40 to +50°C (-40 to +122°F) for storage in the ambient temperature range of -40 to +75°C (-40 to +167°F).

(c) General Construction.

1. The LED Light Engine shall be a single, self-contained device, for installation in an existing street sign housing. The power supply must be designed to fit and mounted on the inside wall at one end of the street sign housing. The LED Light Engine shall be mounted within the inner top portion of the housing and no components of the light source shall sit between the sign faces.

2. The assembly and manufacturing processes of the LED Light Engine shall be designed to ensure that all LED and electronic components are adequately supported to withstand mechanical shocks and vibrations in compliance with the specifications of the ANSI, C136.31-2001 standards.

(d) Mechanical Construction.

1. The sign shall be constructed using a weatherproof, aluminum housing consisting of an extruded aluminum top with a minimum thickness of .140". The extruded aluminum bottom is .094" thick. The ends of the housing shall be cast aluminum with a minimum thickness of .250". The sign shall be constructed using a weatherproof, aluminum housing consisting of an extruded aluminum with the maximum sign dimensions of 22" in height, 96" in length, 10.75" in depth (including the drip edge) and shall not weight more than 110 pounds. All housing corners are continuous TIG (Tungsten Inert Gas) welded to provide a weatherproof seal.2. The door shall be constructed of extruded aluminum. Two corners are continuous TIG welded with the other two screwed together to make one side of the door removable for installation of the sign face. The door is fastened to the housing on the bottom by a full length, stainless steel hinge. The door shall be held secure onto a 1" wide by 5/32" thick neoprene gasket by an appropriate numbers of quarter-turn fasteners to form a watertight seal between the door and the housing. The sign shall also be fabricated in a way to ensure that no components fall out while a technician is opening or working inside the sign enclosure.
3. The sign face shall be constructed of .125" white translucent polycarbonate or acrylic. Sign legend shall be according to D1 Mast Arm Mounted Street Name Sign detail and MUTCD. The sign face legend background shall consist of translucent Type ZZ white reflective sheeting and transparent green film applied to the front of the sign face. The legend shall be framed by a white border. A logo symbol and/or name of the community may be included with approval of the Engineer. A logo symbol and/or name of the community may be included with approval of the Engineer.
45. All fasteners and hardware shall be corrosion resistant stainless steel. No special tools are required for routine maintenance.
6. All wiring shall be secured by insulated wire compression nuts or barrier type terminal blocks.
7. A wire entrance junction box shall be supplied with the sign assembly. The box may be supplied mounted to the exterior or interior of the sign and provide a weather tight seal.
8. A photoelectric switch shall be mounted in the control cabinet to control lighting functions for day and night display. Each sign shall be individually fused.
9. Brackets and Mounting: LED internally-illuminated street name signs will be factory drilled to accommodate mast arm two-point support assembly mounting brackets. A safety cable is to be included with each mounting bracket.
10. Refer to the illuminated street name sign mounting detail standard for wiring methods and material.

(e) Electrical.

1. Photocell shall be rated 105-305V, turn on at 1.5 fcs. with a 3-5 second delay. A manufacturer's warranty of six (6) years shall be provided. Power consumption shall be no greater than 1 watt at 120V.
2. The LED Light Engine shall operate from a 60 +/- 3 cycle AC line power over a voltage range of 80 to 135 Vac rms. Fluctuations in line voltage over the range of 80 to 135 Vac shall not affect luminous intensity by more than +/- 10%.
3. Total harmonic distortion induced into the AC power line by the LED Light Engine, operated at a nominal operating voltage, and at a temperature of +25°C (+77°F), shall not exceed 20%.
4. The LED Light Engine shall be cycled ON and OFF with a photocell as shown on the detail sheet and shall not exceed 145 watts.

The signs shall not be energized when traffic signals are powered by an alternate energy source such as a generator or Uninterruptable Power Supply (UPS). The signs shall be connected to the generator or UPS bypass circuitry.

(f) Photometric Requirements.

1. The entire surface of the sign panel shall be evenly illuminated. The average maintained luminous intensity measured across the letters, operating under the conditions defined in Environmental Requirements and Wattage Sections shall be of a minimum value of 100 cd/m<sup>2</sup>.
2. The manufacturer shall make available independent laboratory test results to verify compliance to Voltage Range and Luminous Intensity Distribution Sections.
3. LED shall have a color temperature of 5200k nominal, CRI of 80 with a life expectancy of 75,000 hrs.

(g) Quality Assurance.

The LED Light Engine shall be manufactured in accordance with a vendor quality assurance (QA) program. The production QA shall include statistically controlled routine tests to ensure minimum performance levels of the LED Light Engine build to meet this specification. QA process and test result documentations shall be kept on file for a minimum period of seven (7) years. The LED Light Engine that does not satisfy the production QA testing performance requirements shall not be labeled, advertised, or sold as conforming to these specifications. Each LED Light Engine shall be identified by a manufacturer's serial number for warranty purposes. LED Light Engines shall be replaced or repaired if they fail to function as intended due to workmanship or material defects within the first sixty (60) months from the date of acceptance. LED Light Engines that exhibit luminous intensities less than the minimum value specified in Photometric Section within the first thirty-six (36) months from the date of acceptance shall be replaced or repaired.

Basis of Payment

This work will be paid for at the contract unit price EACH for LED INTERNALLY ILLUMINATED STREET NAME SIGN, of the length specified which shall be payment in full for furnishing and installing the LED internally illuminated street sign, complete with circuitry and mounting hardware including photo cell, circuit breaker, fusing, relay, connections and cabling as shown on the plans for proper operation and installation.



The illuminated street name sign cable will be paid for at the contract unit price per FOOT for ELECTRIC CABLE IN CONDUIT, STREET NAME SIGN, NO. 14 3C, TYPE SOOW, which price shall be payment in full for furnishing and installing the cable and making all electrical connections. The length of measurement shall be the distance horizontally measured between changes in direction, including cable in mast arms and slack cables. All vertical cables will not be measured for payment. Slack cables will be paid for as lead-in cables in conduit.

**SPECIAL PROVISION  
FOR  
RELOCATE EXISTING ILLUMINATED STREET NAME SIGN**

This item shall consist of relocating the existing illuminated street name sign from an existing traffic signal mast arm to the new traffic signal mast arm as indicated in the plans or as directed by the Engineer.

The work shall include disconnecting illuminated sign and reconnecting it to the new cable.

If a new traffic signal controller and cabinet is installed, the existing illuminated sign controls shall be removed from the existing controller cabinet and installed into the proposed controller cabinet (contactor, photocontrol, fuseholder, fuses, etc.). Replace the light engine of the LED sign, sign panels, safety cables and the mounting hardware before they are relocated on new mast arm pole.

Basis of Payment. This item will be paid for at the contract unit price EACH for RELOCATE EXISTING ILLUMINATED STREET NAME SIGN, which price shall be payment in full for disconnecting the existing illuminated sign, relocating, using new bracket assembly, safety cables, LED light engine and signal panels and connecting the illuminated sign to the new cable complete including controls, wiring and operating to the satisfaction of the Engineer.

The illuminated street name sign cable will be paid for at the contract unit price per FOOT for ELECTRIC CABLE IN CONDUIT, STREET NAME SIGN, NO. 14 3C, TYPE SOOW, which price shall be payment in full for furnishing and installing the cable and making all electrical connections. The length of measurement shall be the distance horizontally measured between changes in direction, including cable in mast arms and slack cables. All vertical cables will not be measured for payment. Slack cables will be paid for as lead-in cables in conduit.

**SPECIAL PROVISION  
FOR  
VIDEO DETECTION SYSTEM, SINGLE CAMERA/PROCESSOR VIDEO DETECTION**

This work shall consist of furnishing and installing an Autoscope Solo Terra or approved equal Video Detection System including all necessary hardware, cable and accessories as specified on the plans. An extension pole for mounting video cameras, when needed or directed by the engineer, will be included in this item.

The system shall consist of one Image Sensor and Machine Vision Processor (MVP) or Video Detection Processor (VDP) integrated into one compact unit. Communication or Extension modules shall be provided which act as interface between the image sensor/MVP or VDP and the traffic controller. The communication or Extension interface unit shall be shelf mount or it shall fit a NEMA TS-1 and TS-2 detector rack depending on the application.

The system shall be able to detect either approaching or receding vehicles in multiple traffic lanes. With a MVP or VDP capable of handling one image sensors, there shall be a minimum of 24 detection zones that can be user-defined through interactive graphics by placing lines and/or boxes in an image or a VGA monitor. The user shall be able to redefine previously defined detection zones. The MVP or VDP shall calculate traffic parameters in real-time and provide local non-volatile data storage for later downloading and analysis.

Video Detection - General

This specification sets forth the minimum requirements for a system that monitors vehicles on a roadway via processing of video images. The detection of vehicles passing through the field-of-view of an image sensor shall be made available to a large variety of end user applications as simple contact closure outputs that reflect the current realtime detector or alarm states (on/off) or as summary traffic statistics that are reported locally or remotely. The contact closure outputs shall be provided to a traffic signal controller and comply with the National Electrical Manufacturers Association (NEMA) type C or D detector.

System Hardware

The machine vision system hardware shall consist of three components: 1) a color, min 10x zoom, MVP or VDP sensor 2) a modular cabinet interface unit 3) a communication interface panel. Additionally, an optional personal computer (PC) shall host the server and client applications that are used to program and monitor the system components. The realtime performance shall be observed by viewing the video output from the sensor with overlaid flashing detectors to indicate the current detection state (on/off). The MVP or VDP sensor shall optionally store cumulative traffic statistics internally in non-volatile memory for later retrieval and analysis.

The MVP or VDP shall communicate to the modular cabinet interface unit via the communication or Extension interface panel and the software applications using the industry standard TCP/IP network protocol.

The modular cabinet interface unit shall communicate directly with up to eight (8) MVP or VDP sensors and shall comply with the form factor and electrical characteristics to plug directly into a NEMA type C or D detector rack.

### System Software

The MVP or VDP sensor embedded software shall incorporate multiple applications that perform a variety of diagnostic, installation, fault tolerant operations, data communications, digital video streaming, and vehicle detection processing. The detection shall be reliable, consistent, and perform under all weather, lighting, and traffic congestion levels. An embedded web server shall permit standard internet browsers to connect and perform basic configuration, maintenance, and video streaming services.

## **FUNCTIONAL CAPABILITIES**

### MVP or VDP Sensor

The MVP or VDP sensor shall be an integrated imaging color CCD array with zoom lens optics, high-speed, dual-core image processing hardware bundled into a sealed enclosure. The CCD array shall be directly controlled by the dual-core processor, thus providing high-quality video for detection that has virtually no noise to degrade detection performance. It shall be possible to zoom the lens as required for setup and operation. The camera shall be in a water tight enclosure. The camera enclosure shall be equipped with a sunshield which includes a water diversion device, which prevents water from flowing in the camera's field of view. The camera enclosure shall contain a heater to assure proper operation of the camera at low temperatures. The heater shall prevent condensation on the optical face plate of the enclosure. The enclosure shall be equipped with weathered tight connections for all cables and connectors. A minimum of a nine (9) inch in-cabinet video monitor is required for view and/or programming detector zones.

### Power

The MVP or VDP sensor shall operate on 110/220 VAC, 50/60Hz at a maximum of 45 watts. The MVP or VDP sensor shall operate in a temperature range of -29°F to 165°F (-34°C to 74°C).

### Detection Zone Programming

Placement of detection zones shall be by means of a PC with a Windows operating system, a keyboard, and a mouse or monitor and mouse. The PC monitor shall be able to show the detection zones superimposed on images of traffic scenes.

The detection zones shall be created by using a mouse to draw detection zones on the PC monitor and/or cabinet monitor. Using the mouse and keyboard it shall be possible to place, size, and orient detection zones to provide optimal road coverage for vehicle detection. It shall be possible to download detector configurations from the PC to the MVP or VDP sensor and cabinet interface module, to retrieve the detector configuration that is currently running in the MVP or VDP sensor, and to back up detector configurations by saving them to the PC fixed disks or other removable storage media.

The supervisor computer's mouse and keyboard or monitor and mouse shall be used to edit previously defined detector configurations to permit adjustment of the detection zone size and placement, to add detectors for additional traffic applications, or to reprogram the MVP or VDP sensor for different traffic applications or changes in installation site geometry or traffic rerouting.

### Optimal Detection

The video detection system shall optimally detect vehicle passage and presence when the MVP or VDP sensor is mounted 30 feet (10 m) or higher above the roadway, when the image sensor is adjacent to the

desired coverage area, and when the distance to the farthest detection zone locations are not greater than ten (10) times the mounting height of the MVP or VDP. The recommended deployment geometry for optimal detection also requires that there be an unobstructed view of each traveled lane where detection is required. Although optimal detection may be obtained when the MVP or VDP is mounted directly above the traveled lanes, the MVP or VDP shall not be required to be directly over the roadway. The MVP or VDP shall be able to view either approaching or receding traffic or both in the same field of view. The preferred MVP or VDP sensor orientation shall be to view approaching traffic since there are more high contrast features on vehicles as viewed from the front rather than the rear.

#### Modular Cabinet Interface Unit

The modular cabinet interface unit shall provide the hardware and software means for up to eight (8) MVP or VDP sensors to communicate real-time detection states and alarms to a local traffic signal controller. It shall comply with the electrical and protocol specifications of the detector rack standards.

The modular cabinet interface unit shall be a simple interface card that plugs directly into a NEMA type C or D detector rack. The modular cabinet interface unit shall occupy only 2 slots of the detector rack. The modular cabinet interface unit shall accept up to eight (8) inputs and shall provide up to twenty-four (24) detector outputs.

#### System Installation & Training

The supplier of the video detection system may supervise the installation and testing of the video detection system and computer equipment as required by the contracting agency.

Training is available to personnel of the contracting agency in the operation, set up, and maintenance of the video detection system. The MVP or VDP sensor and its support hardware / software is a sophisticated leading-edge technology system. Proper instruction from certified instructors is recommended to ensure that the end user has complete competency in system operation. The User's Guide is not an adequate substitute for practical classroom training and formal certification by an approved agency.

#### Warranty, Service, & Support

For a minimum of two (2) years, the supplier shall warrant the video detection system. An option for additional year(s) warranty for up to 5 years shall be available. Ongoing software support by the supplier shall include software updates of the MVP or VDP sensor, modular cabinet interface unit, and supervisor computer applications. These updates shall be provided free of charge during the warranty period. The supplier shall maintain a program for technical support and software updates following expiration of the warranty period. This program shall be available to the contracting agency in the form of a separate agreement for continuing support.

Basis of Payment: This work shall be paid at the contract unit price EACH for VIDEO DETECTION SYSTEM, SINGLE CAMERA/PROCESSOR VIDEO DETECTION, as described above, which price will be payment in full for furnishing, installing and setting up the video detection system, with necessary connections and programming for proper operation.

The cable shall be in accordance with the recommendation of the manufacturer of the Video Detection System. The video detection cable will be paid for at the contract unit price per FOOT for ELECTRIC CABLE, VIDEO DETECTION SYSTEM which price will be payment in full for furnishing and installing the video detection cable, as specified herein, with all necessary connections for proper operation.

**SPECIAL PROVISION  
FOR  
VIDEO DETECTION SYSTEM, COMPLETE INTERSECTION**

This work shall consist of furnishing and installing an Autoscope Solo Terra or approved equal Video Detection System including all necessary hardware, cable and accessories as specified on the plans. An extension pole for mounting video cameras, when needed or directed by the engineer, will be included in this item.

The system shall consist of one Image Sensor and Machine Vision Processor (MVP) or Video Detection Processor (VDP) integrated into one compact unit. Communication or Extension modules shall be provided which act as interface between the image sensor/MVP or VDP and the traffic controller. The communication or Extension interface unit shall be shelf mount or it shall fit a NEMA TS-1 and TS-2 detector rack depending on the application.

The system shall be able to detect either approaching or receding vehicles in multiple traffic lanes. With a MVP or VDP capable of handling one image sensors, there shall be a minimum of 24 detection zones that can be user-defined through interactive graphics by placing lines and/or boxes in an image or a VGA monitor. The user shall be able to redefine previously defined detection zones. The MVP or VDP shall calculate traffic parameters in real-time and provide local non-volatile data storage for later downloading and analysis.

Video Detection - General

This specification sets forth the minimum requirements for a system that monitors vehicles on a roadway via processing of video images. The detection of vehicles passing through the field-of-view of an image sensor shall be made available to a large variety of end user applications as simple contact closure outputs that reflect the current realtime detector or alarm states (on/off) or as summary traffic statistics that are reported locally or remotely. The contact closure outputs shall be provided to a traffic signal controller and comply with the National Electrical Manufacturers Association (NEMA) type C or D detector.

System Hardware

The machine vision system hardware shall consist of three components: 1) a color, min 10x zoom, MVP or VDP sensor 2) a modular cabinet interface unit 3) a communication interface panel. Additionally, an optional personal computer (PC) shall host the server and client applications that are used to program and monitor the system components. The realtime performance shall be observed by viewing the video output from the sensor with overlaid flashing detectors to indicate the current detection state (on/off). The MVP or VDP sensor shall optionally store cumulative traffic statistics internally in non-volatile memory for later retrieval and analysis.

The MVP or VDP shall communicate to the modular cabinet interface unit via the communication or Extension interface panel and the software applications using the industry standard TCP/IP network protocol.

The modular cabinet interface unit shall communicate directly with up to eight (8) MVP or VDP sensors and shall comply with the form factor and electrical characteristics to plug directly into a NEMA type C or D detector rack.

### System Software

The MVP or VDP sensor embedded software shall incorporate multiple applications that perform a variety of diagnostic, installation, fault tolerant operations, data communications, digital video streaming, and vehicle detection processing. The detection shall be reliable, consistent, and perform under all weather, lighting, and traffic congestion levels. An embedded web server shall permit standard internet browsers to connect and perform basic configuration, maintenance, and video streaming services.

## **FUNCTIONAL CAPABILITIES**

### MVP or VDP Sensor

The MVP or VDP sensor shall be an integrated imaging color CCD array with zoom lens optics, high-speed, dual-core image processing hardware bundled into a sealed enclosure. The CCD array shall be directly controlled by the dual-core processor, thus providing high-quality video for detection that has virtually no noise to degrade detection performance. It shall be possible to zoom the lens as required for setup and operation. The camera shall be in a water tight enclosure. The camera enclosure shall be equipped with a sunshield which includes a water diversion device, which prevents water from flowing in the cameras field of view. The camera enclosure shall contain a heater to assure proper operation of the camera at low temperatures. The heater shall prevent condensation on the optical face plate of the enclosure. The enclosure shall be equipped with weathered tight connections for all cables and connectors. A minimum of a nine (9) inch in-cabinet video monitor is required for view and/or programming detector zones.

### Power

The MVP or VDP sensor shall operate on 110/220 VAC, 50/60Hz at a maximum of 45 watts. The MVP or VDP sensor shall operate in a temperature range of -29°F to 165°F (-34°C to 74°C).

### Detection Zone Programming

Placement of detection zones shall be by means of a PC with a Windows operating system, a keyboard, and a mouse or monitor and mouse. The PC monitor shall be able to show the detection zones superimposed on images of traffic scenes.

The detection zones shall be created by using a mouse to draw detection zones on the PC monitor and/or cabinet monitor. Using the mouse and keyboard it shall be possible to place, size, and orient detection zones to provide optimal road coverage for vehicle detection. It shall be possible to download detector configurations from the PC to the MVP or VDP sensor and cabinet interface module, to retrieve the detector configuration that is currently running in the MVP or VDP sensor, and to back up detector configurations by saving them to the PC fixed disks or other removable storage media.

The supervisor computer's mouse and keyboard or monitor and mouse shall be used to edit previously defined detector configurations to permit adjustment of the detection zone size and placement, to add detectors for additional traffic applications, or to reprogram the MVP or VDP sensor for different traffic applications or changes in installation site geometry or traffic rerouting.

### Optimal Detection

The video detection system shall optimally detect vehicle passage and presence when the MVP or VDP sensor is mounted 30 feet (10 m) or higher above the roadway, when the image sensor is adjacent to the desired coverage area, and when the distance to the farthest detection zone locations are not greater than ten (10) times the mounting height of the MVP or VDP. The recommended deployment geometry for optimal detection also requires that there be an unobstructed view of each traveled lane where detection is required. Although optimal detection may be obtained when the MVP or VDP is mounted directly above the traveled lanes, the MVP or VDP shall not be required to be directly over the roadway. The MVP or VDP shall be able to view either approaching or receding traffic or both in the same field of view. The preferred MVP or VDP sensor orientation shall be to view approaching traffic since there are more high contrast features on vehicles as viewed from the front rather than the rear.

### Modular Cabinet Interface Unit

The modular cabinet interface unit shall provide the hardware and software means for up to eight (8) MVP or VDP sensors to communicate real-time detection states and alarms to a local traffic signal controller. It shall comply with the electrical and protocol specifications of the detector rack standards.

The modular cabinet interface unit shall be a simple interface card that plugs directly into a NEMA type C or D detector rack. The modular cabinet interface unit shall occupy only 2 slots of the detector rack. The modular cabinet interface unit shall accept up to eight (8) inputs and shall provide up to twenty-four (24) detector outputs.

### System Installation & Training

The supplier of the video detection system may supervise the installation and testing of the video detection system and computer equipment as required by the contracting agency.

Training is available to personnel of the contracting agency in the operation, set up, and maintenance of the video detection system. The MVP or VDP sensor and its support hardware / software is a sophisticated leading-edge technology system. Proper instruction from certified instructors is recommended to ensure that the end user has complete competency in system operation. The User's Guide is not an adequate substitute for practical classroom training and formal certification by an approved agency.

### Warranty, Service, & Support

For a minimum of two (2) years, the supplier shall warrant the video detection system. An option for additional year(s) warranty for up to 5 years shall be available. Ongoing software support by the supplier shall include software updates of the MVP or VDP sensor, modular cabinet interface unit, and supervisor computer applications. These updates shall be provided free of charge during the warranty period. The supplier shall maintain a program for technical support and software updates following expiration of the warranty period. This program shall be available to the contracting agency in the form of a separate agreement for continuing support.

Basis of Payment: This work shall be paid at the contract unit price EACH for VIDEO DETECTION SYSTEM, COMPLETE INTERSECTION as described above, which price will be payment in full for furnishing, installing and setting up the video detection system, with necessary connections and programming for proper operation.



The cable shall be in accordance with the recommendation of the manufacturer of the Video Detection System. The video detection cable will be paid for at the contract unit price per FOOT for ELECTRIC CABLE, VIDEO DETECTION SYSTEM which price will be payment in full for furnishing and installing the video detection cable, as specified herein, with all necessary connections for proper operation.

**SPECIAL PROVISION  
FOR  
UNINTERRUPTABLE POWER SUPPLY WITHOUT CABINET**

The furnishing and installation of this item shall meet the requirements of Section 862 and 1074.04 of the Supplemental Specifications and Recurring Special Provisions, except as follows:

The UPS shall have the power capacity to provide normal operation of a signalized intersection that utilizes all LED type signal head optics, for a minimum of ten hours.

The UPS shall additionally include, all material needed to make a working system. The UPS shall provide reliable emergency power to the traffic signals in the event of a power failure or interruption.

Installation

For Super-P (Type IV) and Super-R (Type V) cabinets, the battery cabinet is integrated to the traffic signal cabinet, and shall be included in the cost for the traffic signal cabinet of the size and type indicated on the plans:

At locations where UPS is installed and Emergency Vehicle Priority System is in use, any existing incandescent confirmation beacons shall be replaced with LED lamps in accordance with the Cook County Emergency Vehicle Priority System specification at no additional cost to the contract.

A concrete apron shall be provided and be in accordance with Articles 424 and 202 of the Standard Specifications. The concrete apron shall also, follow the District 1 Standard Traffic Signal Design Detail, Type D or Type C concrete foundation.

This item shall include any required modifications to an existing traffic signal controller as a result of the addition of the UPS including the addition of alarms.

Bypass switch shall completely disconnect the traffic signal cabinet from the utility provider.

Material:

The UPS shall be line interactive or double conversion and provide voltage regulation and power conditioning when utilizing utility power. The UPS shall be sized appropriately for the intersection's normal traffic signal operating connected load, plus 20 percent (20%). When installed at a railroad-interconnected intersection the UPS must maintain the railroad pre-emption load, plus 20 percent (20%) of the railroad preemption-operating load. The total connected traffic signal load shall not exceed the published ratings for the UPS. The UPS shall provide a minimum of ten (10) hours of normal operation run-time for signalized intersections with LED type signal head optics at 77 °F (25 °C) minimum 1000W active output capacity, with 86 percent minimum inverter efficiency).

The UPS shall have a minimum of four (4) sets of normally open (NO) and normally closed (NC) single-pole double-throw (SPDT) relay contact closures, available on a panel mounted terminal block or locking circular connectors, rated at a minimum 120 V/1 A, and labeled so as to identify each contact according to the plans.

The UPS shall be compatible with the County's approved traffic controller assemblies utilizing NEMA TS 1 or NEMA TS 2 controllers and cabinet components for full time operation.

When the intersection is in battery backup mode, the UPS shall bypass all internal cabinet lights, ventilation fans, service receptacles, any lighted street name signs, heater, street lights, any automated enforcement equipment and any other devices directed by the Engineer.

Batteries, inverter/charger and power transfer relay shall be housed in a separate NEMA Type 3R cabinet. The cabinet shall be Aluminum alloy, 5052-H32, 0.125-inch thick and have a natural mill finish.

No more than three batteries shall be mounted on individual shelves for a cabinet housing six batteries and no more than four batteries per shelf for a cabinet housing eight batteries.

The UPS shall include a tip or kill switch installed in the battery cabinet, which shall completely disconnect power from the UPS when the switch is manually activated.

The UPS shall include standard RS-232 and internal Ethernet interface.

The UPS shall incorporate a flanged electric generator inlet for charging the batteries and operating the UPS. The generator connector shall be male type, twist-lock, rated as 15A, 125VAC with a NEMA L5-15P configuration and meets UL and CSA testing and has a weatherproof lift cover plate. Access to the generator inlet shall be from a secured weatherproof lift cover plate or behind a locked battery cabinet police panel.

The bypass switch shall include an internal power transfer relay that allows removal of the battery back-up unit, while the traffic signal is connected to utility power, without impacting normal traffic signal operation.

Battery System: All batteries supplied in the UPS shall be either gel cell or AGM type, deep cycle, completely sealed, prismatic lead calcium based, silver alloy, valve regulated lead acid (VRLA) requiring no maintenance. All batteries in a UPS installation shall be the same type; mixing of gel cell and AGM types within a UPS installation is not permitted.

Batteries shall be certified by the manufacturer to operate over a temperature range of -13 to 160 °F (-25 to + 71 °C) for gel cell batteries and -40 to 140 °F (-40 to + 60 °C) for AGM type batteries.

The UPS shall consist of an even number of batteries that are capable of maintaining normal operation of the signalized intersection for a minimum of ten hours. Calculations shall be provided showing the number of batteries of the type supplied that are needed to satisfy this requirement. A minimum of four batteries shall be provided.

Battery Heater mats shall be provided, when gel cell type batteries are supplied.

The warranty for an uninterruptible power supply (UPS) shall cover a minimum of five years from date the equipment is placed in operation; however, the batteries of the UPS shall be warranted for full replacement for a minimum of five years from the date the traffic signal and UPS are placed into service.

The UPS shall be set-up to run the traffic signal continuously, without going to a red flashing condition, when switched to battery power unless otherwise directed by the Engineer. The Contractor shall confirm set-up with the Engineer. The continuous operation mode when switched to battery may require modification to unit connections and these modifications are included in the unit price for this item.

Basis of Payment

This work will be paid for at the contract unit price per EACH for UNINTERRUPTABLE POWER SUPPLY WITHOUT CABINET, which price shall be payment in full for furnishing and installing the Uninterruptible Power Supply complete with necessary connections for proper operation. Replacement of Emergency Vehicle Priority System confirmation beacons shall be included in the cost of the UNINTERRUPTABLE POWER SUPPLY WITHOUT CABINET item. The concrete apron and earth excavation required shall be included in the cost of this pay item.

**SPECIAL PROVISION  
FOR  
MODIFYING EXISTING CONTROLLER CABINET**

The work shall consist of modifying an existing controller cabinet as follows:

- (a) Uninterruptible Power Supply (UPS). The addition of uninterruptible power supply (UPS) to an existing controller cabinet could require the relocation of the existing controller cabinet items to allow for the installation of the uninterruptible power supply (UPS) components inside the existing controller cabinet as outlined under section 862 and 1074.04 of the Standard Specifications.
- (b) Light Emitting Diode (LED) Signal Heads, Light Emitting Diode (LED) Optically Programmed Signal Heads and Light Emitting Diode (LED) Pedestrian Signal Heads. The contractor shall verify that the existing load switches meet the requirements of Section 1074.03(5)(b)(2) of the Standard Specifications and the recommended load requirements of the light emitting diode (LED) signal heads that are being installed at the existing traffic signal. If any of the existing load switches do not meet these requirements, they shall be replaced, as directed by the Engineer.
- (c) Light Emitting Diode (LED), Signal Head, Retrofit. The contractor shall verify that the existing load switches meet the requirements of Section 1074.03 (b) (2) of the Standard Specifications and the recommended load requirements of light emitting diode (LED) traffic signal modules, pedestrian signal modules, and pedestrian countdown signal modules as specified in the plans. If any of the existing load switches do not meet these requirements, they shall be replaced, as directed by the Engineer.
- (d) This item shall include the upgrade of all non-railroad controller software to the latest version available at the time of the signal TURN-ON.

Basis of Payment. Modifying an existing controller cabinet will be paid for at the contract unit price per EACH for MODIFYING EXISTING CONTROLLER CABINET. This shall include all material and labor required to complete the work as described above, the removal and disposal of all items removed from the controller cabinet, as directed by the Engineer. The equipment for the Uninterruptible Power Supply (UPS) and labor to install it in the existing controller cabinet shall be included in the pay item Uninterruptible Power Supply. Modifying an existing controller will be paid at the contract unit price per EACH for MODIFYING EXISTING CONTROLLER, per Section 895.04 and 895.08 of the standard Specifications.

**SPECIAL PROVISION  
FOR  
TRAFFIC ACTUATED CONTROLLER**

This work shall consist of furnishing and installing traffic actuated solid state digital controller meeting the requirements of the current Cook County Traffic Signal Special Provisions and Section 857, 1073 and 1074 of Standard Specification. This pay item shall include furnishing and installing the controller complete including malfunction management unit, load switches and flasher relays, and all necessary connections for proper operation.

Controllers shall be NTCIP compliant, Econolite ASC/3S-1000 or Eagle/Siemens M50 unless specified otherwise on the plans or elsewhere on these specifications. A NTCIP compliant controller may be used at a traffic signal interconnected to railroad warning devices but only upon the approval of the Engineer. Only controllers supplied by one of the District One approved closed loop equipment supplier will be allowed. The controller shall be the most recent model and software version supplied by the equipment supplier at the time of the traffic signal TURN-ON and include data key. The traffic signal controller shall provide features to inhibit simultaneous display of a circular yellow ball and a yellow arrow display. Individual load switches shall be provided for each vehicle, pedestrian, and right turn over lap phase. The controller shall prevent phases from being omitted during program changes and after all preemption events.

Basis of Payment. This work will be paid for at the contract unit price EACH for FULL-ACTUATED CONTROLLER, which price shall be payment in full for furnishing and installing the controller complete including malfunction management unit, load switches and flasher relays, and all necessary connections for proper operation.

**SPECIAL PROVISION  
FOR  
RAILROAD, TRAFFIC ACTUATED CONTROLLER  
TRAFFIC ACTUATED CONTROLLER WITH CABINET  
INDUCTIVE LOOP DETECTOR**

This work shall consist of furnishing and installing a traffic actuated solid state digital controller in the controller cabinet of the type specified, meeting the requirements of Section 857 of the Standard Specifications as modified herein and including conflict monitor, load switches and flasher relays, with monitoring and/or providing redundancy to the railroad preemtor and all necessary connections for proper operation.

Controller and cabinet shall be assembled only by an approved IDOT District One traffic signal equipment supplier. The manufacturer shall have a representative and shop located in the six (6) county Chicago areas. The equipment shall be tested and approved in the equipment supplier's District One's facility prior to field installation.

For installation as a stand-alone traffic signal, connected to a closed loop system or integrated into an advance traffic management system (ATMS), controllers shall be Econolite ASC/3S-1000 or Eagle/Siemens M52 unless specified otherwise on the plans or elsewhere on these specifications. Only controllers supplied by one of the District One approved closed loop equipment suppliers will be allowed. Unless specified otherwise on the plans or these specifications, the controller shall be of the most recent model and software version supplied by the equipment supplier at the time of the traffic signal TURN-ON. A removable controller data key shall also be provided. Individual load switches shall be provided for each vehicle, pedestrian, and right turn over lap phase. The controller shall prevent phases from being skipped during program changes and after all preemption events and shall inhibit simultaneous display of circular yellow and yellow arrow indications.

For integration into an ATMS such as Centracs, Tactics, or TransSuite, the controller shall have the latest version of NTCIP software installed. For operation prior to integration into an ATMS, the controller shall maintain existing close loop management communications.

The contractor shall contact CCDOTH and coordinate to the installation of a standard voice-grade dial-up telephone line to the FULL-ACTUATED CONTROLLER AND CABINET, RAILROAD as called for on the traffic signal installation plans. If the traffic signal installation is part of a traffic signal system, a telephone line is usually not required, unless a telephone line is called for on the traffic signal plans. The contractor shall follow the requirements for the telephone service installation as contained in the current traffic signal special provisions under Master Controller.

Controller shall comply with Article 1073.01 as amended herein.

Controller Cabinet and Peripheral Equipment shall comply with Article 1074.03 as amended in these Traffic Signal Special Provisions.

Add the following to Articles 1073.01 (c) (2) and 1074.03 (a) (5) (e) of the Standard Specifications:

Controllers and cabinets shall be new and NEMA TS2 Type 1 or NEMA TS2 Type 2 design.

Railroad interconnected controllers and cabinets shall be assembled only by an approved traffic signal equipment supplier. All railroad interconnected (including temporary railroad interconnect) controllers and cabinets shall be new, built, tested and approved by the controller equipment vendor, in the vendor's District One facility, prior to field installation. The vendor shall provide the technical equipment and assistance as required by the Engineer to fully test this equipment.

Add the following to Article 1074.03 of the Standard Specifications:

- (a) (6) Cabinets shall be designed for NEMA TS2 Type 1 or NEMA TS2 Type 2 operation. All cabinets shall be pre-wired for a minimum of eight (8) phases of vehicular, four (4) phases of pedestrian and four (4) phases of overlap operation.
- (b) (1) Revise "conflict monitor" to read "Malfunction Management Unit"
- (b) (5) Cabinets – Provide 1/8" (3.2 mm) thick unpainted aluminum alloy 5052-H32. The surface shall be smooth, free of marks and scratches. All external hardware shall be stainless steel.
- (b) (6) Controller Harness – Provide a TS2 Type 2 "A" wired harness in addition to the TS2 Type 1 harness.
- (b) (7) Surge Protection – Shall be a 120VAC Single phase Modular filter Plug-in type, supplied from an approved vendor.
- (b) (8) BIU – shall be secured by mechanical means.
- (b) (9) Transfer Relays – Solid state or mechanical flash relays are acceptable.
- (b) (10) Switch Guards – All switches shall be guarded.
- (b) (11) Heating – One (1) 200 watt, thermostatically-controlled, electric heater.
- (b) (12) Lighting – One (1) LED Panel shall be placed inside the cabinet top panel and one (1) LED Panel shall be placed on each side of the pull-out drawer/shelf assembly located beneath the controller support shelf. The LED Panels shall be controlled by a door switch. The LED Panels shall be provided from an approved vendor.
- (b) (13) The cabinet shall be equipped with a pull-out drawer/shelf assembly. A 1 ½ inch (38mm) deep drawer shall be provided in the cabinet, mounted directly beneath the controller support shelf. The drawer shall have a hinged top cover and shall be capable of accommodating one (1) complete set of cabinet prints and manuals. This drawer shall support 50 lbs. (23 kg) in weight when fully extended. The drawer shall open and close smoothly. Drawer dimensions shall make



maximum use of available depth offered by the controller shelf and be a minimum of 18 inches (610mm) wide.

- (b) (14) Plan & Wiring Diagrams – 12" x 15" (3.05mm x 4.06mm) moisture sealed container attached to door.
- (b) (15) Detector Racks – Fully wired and labeled for four (4) channels of emergency vehicle pre-emption and sixteen channels (16) of vehicular operation.
- (b) (16) Field Wiring Labels – All field wiring shall be labeled.
- (b) (17) Field Wiring Termination – Approved channel lugs required.
- (b) (18) Power Panel – Provide a nonconductive shield.
- (b) (19) Circuit Breaker – The circuit breaker shall be sized for the proposed load but shall not be rated less than 30 amps.
- (b) (20) Police Door – Provide wiring and termination for plug in manual phase advance switch.
- (b) (21) Railroad Pre-Emption Test Switch – Shall be provided from an approved vendor
- When "Full Actuated Controller and Cabinet, Type Super P" is used, the cabinet housing shall have the following nominal outside dimensions: a width of 59 in., a depth of 26 in., and a height of 57 in. The cabinet shall have a integrated Uninterruptible Power Supply compartment which holds the backup system and batteries. The battery portion of the cabinet shall be separated from the controller equipment portion of the cabinet by 1/8 inch thick aluminum 5052-H32. The bottom of the battery portion of the cabinet shall be 1/8 inch thick aluminum 5052-H-32. The battery cabinet door shall meet the same specifications as the controller portion except that the door hinge is 14 gage stainless steel with 0.12 stainless steel pin. The Battery compartment has three adjustable shelves, full width, 12" deep standard.,
- A GE KeySafe Slimline Pushbutton Lockbox or approved equal shall be provided in the cabinet.

A method of monitoring and/or providing redundancy to the railroad preemptor input to the controller and have interlock function shall be included as a component of the Railroad Full Actuated Controller and Cabinet installation and be verified by the traffic signal equipment supplier prior to installation.

Basis of Payment. This work will be paid for at the contract unit price EACH for INDUCTIVE LOOP DETECTOR, and/or RAILROAD, FULL ACTUATED CONTROLLER AND CABINET of the type specified, which price shall be payment in full for furnishing and installing the inductive loop detector complete with all harnesses and connections for proper operation, and/or for furnishing and installing the controller complete, including malfunction monitor unit, load switches, flashers, flash transfer relays, etc. in a new cabinet or an existing cabinet as specified, with the necessary connections for proper operation.

**SPECIAL PROVISION  
FOR  
ACCESSIBLE PEDESTRIAN SIGNALS**

Description.

This work shall consist of furnishing and installing pedestrian push button accessible pedestrian signals (APS) type. Each APS shall consist of an interactive vibrotactile pedestrian pushbutton with speaker, an informational sign, a light emitting diode (LED) indicator light, a solid state electronic control board, a power supply, wiring, and mounting hardware. The APS shall meet the requirements of the MUTCD and Sections 801 and 888 of the Standard Specifications, except as modified herein.

Electrical Requirements.

The APS shall operate with systems providing 95 to 130 VAC, 60 Hz and throughout an ambient air temperature range of -29 to +160 °F (-34 to +70 °C).

The APS shall contain a power protection circuit consisting of both fuse and transient protection.

Audible Indications.

A pushbutton locator tone shall sound at each pushbutton with volume settings a maximum of 5 dBA louder than ambient sound.

If two accessible pedestrian pushbuttons are placed less than 10 ft (3 m) apart or placed on the same pole, the audible walk indication shall be a speech walk message.

A clear, verbal message shall be used to communicate the pedestrian walk interval. This message shall sound throughout the WALK interval only. The verbal message shall be modeled after: "Street Name." Walk Sign is on to cross "Street Name." No other messages shall be used to denote the WALK interval.

Where two accessible pedestrian pushbuttons are separated by at least 10 ft (3 m), the walk indication shall be an audible percussive tone. It shall repeat at 8 to 10 ticks per second with a dominant frequency of 880 Hz.

Automatic volume adjustments in response to ambient traffic sound level shall be provided up to a maximum volume of 100 dBA. Locator tone and verbal messages shall be no more than 5 dB louder than ambient sound.

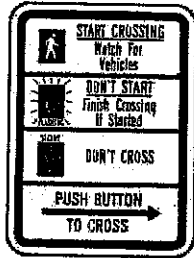
Pedestrian Pushbutton.

Pedestrian pushbuttons shall be at least 2 in. (50 mm) in diameter or width. The force required to activate the pushbutton shall be no greater than 3.5 lb (15.5 N).

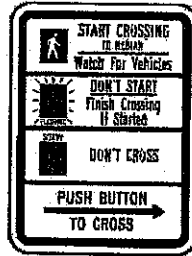
A red LED indicator shall be located on or near the pushbutton which, when activated, acknowledges the pedestrians request to cross the street. The recorded messages and roadway designations shall be confirmed with the engineer and included with submitted product data.

Signage.

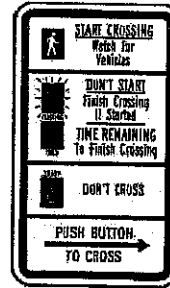
A sign shall be located immediately above the pedestrian pushbutton and parallel to the crosswalk controlled by the pushbutton. The sign shall be one of the following standard MUTCD designs: R10-3b, R10-3d, or R10-3e.



R10-3b



R10-3d



R10-3e

Tactile Arrow.

A tactile arrow, pointing in the direction of travel controlled by a pushbutton, shall be provided either on the pushbutton or its sign.

Vibrotactile Feature.

The pushbutton shall pulse when depressed and shall vibrate continuously throughout the WALK interval.

Training.

The Contractor shall provide APS onsite training for Department personnel and person(s) or group that requested the installation of the APS. APS features and operation shall be demonstrated during the training. The training shall be presented by the APS equipment supplier. Time, date, and location of the training and demonstration shall be coordinated with the Engineer.

Basis of Payment.

This work will be paid for at the contract unit price EACH for a pedestrian push button, ACCESSIBLE PEDESTRIAN SIGNAL type and shall include furnishing, installation, mounting hardware, message programming, and training.

**SPECIAL PROVISION  
FOR  
EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE, NO. 20 3/C**

This work shall consist of furnishing and installing lead-in cable for light detectors installed at existing and/or proposed traffic signal installations as part of an emergency vehicle priority system. The work includes installation of the lead-in cables in existing and/or new conduit. The electric cable shall be shielded and have (3) stranded conductors, colored blue, orange, and yellow with a stranded tinned copper drain wire. The cable shall meet the requirements of the vendor of the Emergency Vehicle Priority System Equipment.

Basis of Payment. The lead-in cable will be paid for at the contract unit price per FOOT (METER) for EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE, NO. 20 3/C or EMERGENCY VEHICLE PRIORITY SYSTEM LINE SENSOR CABLE AERIAL SUSPENDED, NO. 20 3/C which price shall be payment in full for furnishing and making all electrical connections necessary for proper operations.

**SPECIAL PROVISION  
FOR  
ROD AND CLEAN EXISTING CONDUIT**

This work shall consist of inserting a duct rod or electrical fish rod or tape of sufficient length and rigidity into an electrical conduit opening in one electrical handhole, and pushing the said rod through the conduit to emerge at the next or subsequent handhole in the conduit system at the location(s) shown on the plans. The duct rod may be inserted and removed by any standard construction method which causes no damage to the conduit. The size of the conduit may vary, but there shall be no differentiation in cost for the size of the conduit.

The conduit which is to be rodded and cleaned may exist with various amounts of standing water in the handholes to drain the conduit and to afford compatible working conditions for the installation of the duct rods and/or cables. Pumping of handholes shall be incidental to the work of rodding and cleaning of the conduit.

Any handhole which, in the opinion of the Engineer contains excessive debris, dirt or other materials to the extent that conduit rodding and cleaning is not feasible, shall be cleaned at the Engineer's order and payment approval as a separate pay item.

Prior to removal of the duct rod, a duct cleaning attachment such as a properly sized wire brush or cleaning mandrel shall be attached to the duct rod, which by removal of the duct rod shall be pulled through the conduit to remove sand, grit, or other light obstructions from the duct to provide a clean, clear passage for the installation of cable. Whenever the installation of cables is not performed as an adjunct to or immediately following the cleaning of the duct, a light weight pulling line such as a 1/8" polyethylene line or conduit measuring tape shall be placed and shall remain in the conduit to facilitate future work. When great difficulty of either inserting the duct rod or removal of the cleaning mandrel is encountered, the duct may require further cleaning by use of a compressed air gun, or a low pressure water hose. In the case of a broken conduit, the conduit must be excavated and repaired. The existence and location of breaks in the conduit may be determined by rodding, but the excavation and repair work required will be paid for separately.

This work shall be measured per lineal foot for each conduit cleaned. Measurements shall be made from point to point horizontally. No vertical rises shall count in the measurement.

**Basis of Payment.** This work shall be paid for at the contract unit price per lineal FOOT for ROD AND CLEAN EXISTING CONDUIT for the installation of new electric cables in existing conduits. Such price shall include the furnishing of all necessary tools, equipment, and materials required to prepare a conduit for the installation of cable.

**SPECIAL PROVISION  
FOR  
REMOVE AND REPLACE ANCHOR BOLTS**

This item shall consist of replacing anchor rods at existing concrete foundations for traffic signal posts. At locations specified on the plans for new traffic signal post installation, the Contractor shall inspect the existing post foundations prior to removing the existing traffic signal post. The Contractor shall verify that the pattern, spacing, and condition of the existing anchor bolts are acceptable for reuse with a new post. The Contractor shall replace unacceptable anchor bolts as approved by the Engineer.

Anchor bolts shall be according to Article 1006.09 and shall be hot dipped galvanized.

**Installation:**

Existing anchor bolts shall be cut flush with the top of concrete foundation.

The bolt circle of the new anchor bolts shall be rotated a minimum of 2.5-inches away from the existing anchor bolts. New anchor bolts shall be  $\frac{3}{4}$ -inch diameter with minimum 9-inch embedment into the existing concrete foundation and 3-inch threaded length above the top of foundation. New anchor bolts shall be installed using and HIT-RE 500 exposed adhesive anchoring system.

**Method of Measurement.**

The removal and replacement of anchor bolts will be measured for payment as per each foundation requiring anchor bolt replacement. This shall include all anchor bolts replaced, labor, equipment, and materials required for replacing anchor bolts at an existing foundation as specified herein.

**Basis of Payment:**

This item will be paid for at the contract unit price EACH for REMOVE AND REPLACE ANCHOR BOLTS.

**SPECIAL PROVISION  
FOR  
RECTANGULAR RAPID FLASHING BEACON SYSTEM, COMPLETE**

Description. This work shall consist of furnishing and installing a Rectangular Rapid Flashing Beacon (RRFB) System, Complete with light emitting diodes flashing beacons, solar system, batteries, push-button, wireless communication system, signs, galvanized steel traffic signal post and concrete foundation complete.

General.

The RRFB unit shall be MUTCD and ITE compliant. An RRFB shall only be used to supplement a W11-2 (Pedestrian) warning sign with a diagonal downward arrow (W16-7p) plaque, located at or immediately adjacent to a marked crosswalk.

The manufacturer of all equipment shall have a representative and shop located in the six (6) county Chicago areas. All equipment installed in the RECTANGULAR RAPID FLASHING BEACON SYSTEM, Complete shall be from a single supplier. The supplier shall be responsible for service and support for this equipment.

Each RRFB shall include an amber LED verification indicator mounted 90 degree from the faces of the crossing warning signs. This amber LED shall be used to confirm actuation of the RRFB system from the opposite end of the crossing. RRFB system shall have two (2) verification indicators facing to opposite directions. All mounting hardware shall be stainless steel.

Material. LED Beacon:

1. Beacon Dimensions and Placement in Sign Assembly:
  - a. Each RRFB shall consist of two rectangular-shaped yellow indications, each with an LED-array based light source. Each RRFB indication shall be a minimum of approximately 5 inches wide by approximately 2 inches high.
  - b. The two RRFB indications shall be aligned horizontally, with the longer dimension horizontal and with a minimum space between the two indications of approximately seven inches (7 in), measured from inside edge of one indication to inside edge of the other indication.
  - c. The outside edges of the RRFB indications, including any housings, shall not project beyond the outside edges of the W11-2 sign.
  - d. The RRFB shall be located between the bottom of the crossing warning sign and the top of the supplemental downward diagonal arrow plaque rather than 12 inches above or below the sign assembly.
2. Beacon Flashing Requirements:

- a. When activated, the two yellow indications in each RRFB shall flash in a rapidly alternating "wig-wag" flashing sequence (left light on, then right light on).
  - b. Each of the two yellow indications of an RRFB shall have 70 to 80 periods of flashing per minute and shall have alternating but approximately equal periods of rapid pulsing light emissions and dark operation. During each of its 70 to 80 flashing periods per minute, one of the yellow indications shall emit two rapid pulses of light and the other yellow indication shall emit three rapid pulses of light.
3. Beacon Operation:
- a. The RRFB shall be normally dark, shall initiate operation only upon pedestrian actuation, and shall cease operation at a predetermined time after the pedestrian actuation or, with passive detection, after the pedestrian clears the crosswalk.
  - b. All RRFBs associated with a given crosswalk shall, when activated, simultaneously commence operation of their alternating rapid flashing indications and shall cease operation simultaneously.
  - c. A pedestrian instruction sign with the legend PUSH BUTTON TO TURN ON WARNING LIGHTS should be mounted adjacent to or integral with each pedestrian pushbutton.
  - d. A small light directed at and visible to pedestrians in the crosswalk may be installed integral to the RRFB or push button to give confirmation that the RRFB is in operation.

Solar system and batteries:

The Solar Flashing Beacon shall have a peak intensity of 400 candela with a 30 degree horizontal divergence. The unit shall have an operating temperature between -40° F to 165° F (-40° C to 74° C). The Flasher unit shall be MUTCD and ITE compliant. It shall be able to operate 24 hours a day for 40 days without any additional charging. The housing shall be powder coated aluminum. The batteries and solar panel shall be post top mounted. The unit will have a minimum array and load capacity of 6A at a nominal 12VDC. Batteries are UL certified AGM 12V, and are field-replaceable.

Push-Button:

The normal state of the latching LED shall be off. When the push button is pressure activated, the LED shall be lighted and remain on until the beginning of the walk phase. The latching relay shall be mounted in the signal cabinet, controlling two pedestrian phases.

Stations shall be designed to be mounted directly to a post. The station shall be aluminum and shall accept a 3 inch (75mm) round push-button assembly and a regulatory pedestrian instruction sign.

Controller and Wireless Communication System:

The crosswalk flasher units will be linked to each other using a spread spectrum radio link (900-930Mhz operating frequency). The radio will be capable of passing data via RS232. The radio will operate from a nominal 12VDC source and include a status LED lamp to indicate power on.



RRFB controller shall have the ability to modify operation cycles and be programmed via Windows vase software.

Warranty:

All RRFB components, systems, batteries and installation shall be warranted for a minimum of three (3) year after completed and accepted. Replacement of failed equipment and/or parts shall include labor to remove the failed parts, install new one and proper disposal of the failed parts.

Basis of Payment. This work will be paid for at the contract unit price EACH for RECTANGULAR RAPID FLASHING BEACON SYSTEM, COMPLETE which price shall be payment in full for furnishing and installing Rectangular Rapid Flashing Beacon System, complete with necessary connections for proper operation.

Traffic Signal Post will be paid for at the contract unit price per Each for TRAFFIC SIGNAL POST, GALVANIZED STEEL of the length specified which price shall be payment in full for furnishing and installing the traffic signal post, base, nuts and washers, and pipe cap complete.

Concrete foundation will be paid for at the contract unit price per FOOT (METER) for CONCRETE FOUNDATION, TYPE A which price shall be payment in full for all necessary excavating or drilling, back filling, disposal of unsuitable material, form work, ground rods and furnishing all materials within the limits of the foundation.

**SPECIAL PROVISION  
FOR  
RADAR VEHICLE DETECTION SYSTEM**

This work shall consist of furnishing and installing a radar vehicle detection system as specified and/or as shown on the plan. This pay item shall include all necessary work and equipment required to have a fully operational system including but not limited to the detector unit/s, the interface unit and all the necessary hardware, cable and accessories required to complete the installation in accordance with the manufacturer's specifications.

The radar vehicle detection system shall work under all weather conditions, including rain, freezing rain, snow, wind, dust, fog, and changes in temperature and light. It shall work in an ambient temperature range of -34 to 74 degrees Celsius. It shall have a max power output of 75 watts or less.

The radar vehicle detection system shall be compatible with the District's approved traffic controller assemblies utilizing NEMA TS 1 or NEMA TS 2 controllers and cabinet components for full time operation. The radar vehicle detection system shall provide a minimum of one interface unit that has Ethernet connectivity, surge protection and shall be capable of supporting a minimum of 4 detector units.

The far back radar detection shall have a detection range of 400 feet or better.

A representative from the supplier of the radar vehicle detection system shall supervise the installation and testing of the radar vehicle detection system and shall be present at the traffic signal turn-on inspection. Once the radar vehicle detection system is configured, it shall not need reconfiguration to maintain performance, unless the roadway configuration or the application requirements change.

The mounting location/s of the detector unit/s shall be per the manufacturer's recommendations. If an extension mounting assembly is needed, it shall be included in this item. All holes drilled into signal poles, mast arms, or posts shall require rubber grommets to prevent chafing of wires.

The radar vehicle detection system shall be warrantied, free from material and workmanship defects for a period of two years from final inspection.

Basis of Payment. This work shall be paid for at the contract unit price each for RADAR VEHICLE DETECTION SYSTEM, SINGLE APPROACH, STOP BAR; RADAR VEHICLE DETECTION SYSTEM, SINGLE APPROACH, FAR BACK; RADAR VEHICLE DETECTION SYSTEM, SINGLE APPROACH, STOP BAR AND FAR BACK, the price of which shall include the cost for all of the work and material described herein and includes furnishing, installing, delivery, handling, testing, set-up and all appurtenances and mounting hardware necessary for a fully operational radar vehicle detection system.

**SPECIAL PROVISION  
FOR  
FLASHING BEACON INSTALLATION, SOLAR POWERED**

This work shall consist of furnishing and installing a new solar flashing beacon, post mounted as shown on the plans and as described herein. This item shall consist of furnishing and installing a 12 inch (300 mm) L.E.D. single section red or amber flashing LED module on a new or existing wood or traffic signal post as shown on the plans or as directed by the Engineer. The signal head shall be made of polycarbonate. This item shall include furnishing and installing a flasher controller in an aluminum cabinet with discrete solar panels, LED module, battery, electronics, programmable time clock (if required) compact housing and be capable of operating 24 hours, 7 days a week.

The flash pattern shall be MUTCD compliant and have alternate flash patterns available. The battery shall have a life span of a minimum of 5 years and be field replaceable. The battery and electronics may be located inside the solar panel housing or signal head. The sections of the flasher unit shall be secured with stainless steel hardware and unless otherwise noted, the housing shall be black in color.

The controller and all control equipment shall be of a manufacturer that is approved by this Department. The manufacturer shall have a representative and shop located in the six (6) county Chicago areas.

Basis of Payment. This work will be paid for at the contract unit price EACH for FLASHING BEACON INSTALLATION, SOLAR POWERED or FLASHING BEACON INSTALLATION, SOLAR POWERED WITH TIME CLOCK which price shall be payment in full for furnishing and installing flashing beacon solar powered complete with the necessary connections for proper operation.

**SPECIAL PROVISION  
FOR  
FLASHING BEACON INSTALLATION**

This work shall consist of furnishing and installing a new flashing beacon installation as shown on the plans and as described herein. The energy charges for the operation of the flashing beacon installation shall be paid for by others unless otherwise directed by the Engineer.

The installation of the flashing beacon installation shall be according to the applicable portions of Sections 800 and 1000 of the Standard Specifications for Road and Bridge Construction and IDOT District 1 Flashing Beacon Installation Details except as revised herein. LED signal heads shall be as Signal Head, Light Emitting Diode Special Provision.

This item shall consist of furnishing and installing a 12 inch (300 mm) L.E.D. single section red or amber flashing LED module on a new or existing wood or traffic signal post as shown on the plans or as directed by the Engineer. The signal head shall be made of polycarbonate. This item shall include furnishing and installing a flasher controller in an aluminum cabinet that is integrated within the signal head, with discrete solar panels, LED module, battery, electronics, programmable time clock (if required), dimmer (if required) compact housing and be capable of operating 24 hours, 7 days a week.

The controller and all control equipment shall be of a manufacturer that is approved by this Department. The manufacturer shall have a representative and shop located in the six (6) county Chicago areas.

Basis of Payment. This work will be paid for at the contract unit price EACH for FLASHING BEACON INSTALLATION or FLASHING BEACON INSTALLATION WITH TIME CLOCK which price shall be payment in full for furnishing and installing flashing beacon solar powered complete with the necessary connections for proper operation.

**SPECIAL PROVISION  
FOR  
REMOVE EXISTING FLASHING BEACON**

This work consists of removing the existing flashing beacon system at a location as shown on the plans or when directed by the Engineer and shall be according to applicable portions of Section 895 of the Standard Specifications. This work shall include a complete removal of an existing flashing beacon installation, backfilling of the holes created by the removal of the poles and restoration of the surface to match the adjoining area.

Basis of Payment: This work shall be paid for at the contract unit price **EACH** for **REMOVE EXISTING FLASHING BEACON** which price shall include all labor and equipment necessary to remove all equipment associated with the flashing beacon and disposing of it as required and as directed by the Engineer.

**SPECIAL PROVISION  
FOR  
RELOCATE EXISTING FLASHING BEACON INSTALLATION**

This work consists of the removal of all or part of the existing overhead flashing beacon and/or flashing beacon and relocating it at a location as shown on the plans or as directed by the engineer. Any damage to the existing beacon or appurtenances shall be repaired or replaced by the Contractor at his/her expense as directed by the Engineer.

The relocation of the existing overhead flashing beacon and/or flashing beacon installation shall consist of relocating the signal head, flasher controller and service installation (if required) to a new wood pole(s), wood post or traffic signal post. Cable, conduit and foundation shall be paid for separately. This work shall include the complete relocation of the existing flashing beacon installation, the backfilling of the holes created by the removal of the poles or wood post or traffic signal post, restoration of the surface to match the adjoining area.

The flashing beacon shall remain in operation at all times. The relocation of the beacon shall be completed before roadway work starts. Cable slack shall be provided to allow the flashing beacon to be moved to accommodate construction staging of traffic.

If the overhead beacon can not be kept in operation, temporary signs (same as existing) with battery flashers and posts shall be installed until the permanent flasher is operating.

The maintenance of the existing overhead flashing beacon and/or flashing beacon installation shall be included in this pay item.

Basis of Payment: This work shall be paid for at the contract unit price **EACH** for **RELOCATE EXISTING FLASHING BEACON** or **RELOCATE EXISTING OVERHEAD FLASHING BEACON INSTALLATION** which price shall include furnishing and installing a new wood pole(s) or wood post or traffic signal post with all hardware needed, removing existing wood pole(s) or post and all labor and equipment necessary to remove and relocate all equipment associated with the overhead flashing beacon and/or flashing beacon installation as well as furnishing a temporary flashing beacon installation as directed by the engineer.

**SPECIAL PROVISION  
FOR  
TEMPORARY FLASHING BEACON INSTALLATION**

This item shall consist of furnishing, installing, maintaining and removing a temporary flashing beacon installation at an existing locations as shown on the plans and as described herein including but not limited to temporary signal heads, controller, cabinet, service installation and signing. The energy charges for the operation of the flashing beacon installation shall be paid for by others. Otherwise charges shall be paid for under Section 109.05 of the Road Specifications.

The installation of a temporary flashing beacon installation shall meet the requirements of Section 890 and 801.11 of the Standard Specifications and the Standard Drawings, except as follows:

Equipment. The Contractor shall provide the following:

- All control equipment for the temporary flashing beacon shall be furnished by the Contractor unless otherwise stated in the plans.
- All temporary flashing beacon controllers shall meet or exceed the requirements of section 858. The controller settings shall be set in the field as directed by the Engineer.
- All temporary flashing beacon cabinets shall have a closed bottom made of aluminum alloy. The bottom shall be sealed along the entire perimeter of the cabinet base to ensure a water, dust and insect-proof seal. The bottom shall provide a minimum of two (2) 100 mm (4 inch) diameter holes to run the electric cables through. The 100 mm (4 inch) diameter holes shall have a bushing installed to protect the electric cables and shall be sealed after the electric cables are installed.
- Grounding shall be provided for the temporary traffic signal cabinet meeting or exceeding the applicable portions of the National Electrical Code, Section 807 of the Standard Specifications and shall meet the requirements of the District 1 and Cook County Traffic Signal Specifications for "Grounding of Traffic Signal Systems".
- All flashing beacons shall be of the 12" (300 mm) type. Flashing beacon shall be LED with expandable view, unless otherwise approval by the Engineer. The temporary flashing beacon shall be placed as indicated on the temporary flashing beacon plan or as directed by the Engineer. Each temporary flashing beacon shall have its own cable from the controller cabinet to the flashing beacon.

All labor and material required to comply with these requirements shall be included to the bid price of temporary flashing beacon installation.

Maintenance Procedures. The Contractor shall perform the following maintenance procedures for each temporary installation designated to remain in operation during construction.

The Contractor Shall:

- Have on staff electricians with IMSA Level II certification to provide flashing beacon maintenance.

- Patrol and inspect each installation every two (2) weeks for proper alignment of beacons, lamp failures, and general operation of the flashing beacon.
- Check all controllers every two (2) weeks which will include visually inspecting all timing to insure that they are functioning properly. This item includes routine maintenance.
- Provide immediate corrective action to replace burned out lamps or damaged sockets. When lamps are replaced, the reflector and lens shall be cleaned. All replacement lamps shall meet the approval of the Engineer. The Contractor shall repair or replace all defective equipment from any cause whatsoever.
- Maintain in stock at all times a sufficient amount of materials and equipment to provide effective temporary and permanent repairs.
- Provide immediate corrective action when any part or parts of the system fail to function properly.
- Replace defective or damaged equipment. If the proper operation cannot be obtained immediately, a controller which will provide the proper operation shall be installed within twelve (12) hours of removal of the original controller.
- The Contractor shall be required to maintain the existing type of equipment and time of day program during the period of time that the original control equipment is being overhauled
- Provide the Engineer with the names, addresses, and telephone numbers of two (2) persons qualified and assigned to the maintenance of the flashing beacon installation. These people must be made available 24 hours per day, each and every day of the year for emergency calls by the Engineer.
- Respond to all emergency calls from the Department or municipality within one hour after notification and provide immediate corrective action. When equipment has been damaged or becomes faulty beyond repair, the Contractor shall replace it with new and identical equipment. The cost of furnishing and installing the replaced equipment shall be borne by the Contractor at no additional charge to the State or County. The Contractor may institute action to recover damages from a responsible third party. If at any time the Contractor fails to perform all work as specified herein to keep the temporary flashing beacon installation in proper operating condition or if the Engineer cannot contact the Contractor's designated personnel, the Engineer shall have the County's Electrical Maintenance Contractor perform the maintenance work required. The County's Electrical Maintenance Contractor shall bill the Contractor for the total cost of the work. The contractor shall pay this bill within thirty (30) days of the date of receipt of the invoice or the cost of such work will be deducted from the amount due the Contractor.
- Coordinate with school throughout the school year to adjust flashing schedule accordingly.
- Time clock shall be checked.

When temporary flashing beacon are to be installed at locations where existing beacons are presently operating, the Contractor shall be fully responsible for the maintenance of the existing flashing beacon installation as soon as any physical work begins on the contract or any portion thereof until which time the temporary flashing beacons are functioning and the existing flashing beacons are removed. In



addition, seven days prior to assuming maintenance of the existing flashing beacon installation(s) under this contract, the Contractor shall request that the Resident Engineer contact the Design Engineer at (312) 603-1730 for an inspection of the Installation(s). The Design Engineer shall establish a date and time of inspection and at this time shall check the installation to determine if any corrective work should be done by the County's Electrical Maintenance Contractor or the Municipalities Contractor prior to the Contractor taking over maintenance of the installation. The Resident Engineer, Engineer, and the Contractor shall mutually agree on the date of maintenance transfer to the Contractor for this section.

**Basis of Payment:** This work will be paid for at the contract unit price EACH for TEMPORARY FLASHING BEACON INSTALLATION which price shall include all costs for the modifications required for traffic staging, changes in flashing timing program as required in the Contract plans, all material required, and the installation and complete removal of the temporary flashing beacon.

**SPECIAL PROVISION  
FOR  
TRAFFIC SIGNAL PAINTING**

This work shall include surface preparation, powder coated finish application and packaging of new galvanized steel traffic signal mast arm poles and posts assemblies. All work associated with applying the painted finish shall be performed at the vendor's facility for the pole assembly or post or at a painting facility approved by the Engineer. Traffic signal mast arm shrouds and post bases shall also be painted the same color as the pole assemblies and posts.

Surface Preparation.

All weld flux and other contaminants shall be mechanically removed. The traffic mast arms and post assemblies shall be degreased, cleaned, and air dried to assure all moisture is removed.

Painted Finish.

All galvanized exterior surfaces shall be coated with a urethane or triglycidyl isocyanurate (TGIC) polyester powder to a dry film thickness of 2.0 mils. Prior to application, the surface shall be mechanically etched by brush blasting (Ref. SSPC-SP7) and the zinc coated substrate preheated to 450 °F for a minimum one (1) hour. The coating shall be electrostatically applied and cured by elevating the zinc-coated substrate temperature to a minimum of 400 °F.

The finish paint color shall be black and shall be as selected by the local agency responsible for paint costs. The Contractor shall confirm, in writing, the color selection with the local responsible agency and provide a copy of the approval to the Engineer and a copy of the approval shall be included in the material catalog submittal.

Painting of traffic signal heads, pedestrian signal heads and controller cabinets is not included in this pay item.

Any damage to the finish after leaving the vendor's facility shall be repaired to the satisfaction of the Engineer using a method recommended by the vendor and approved by the Engineer. If while at the vendor's facility the finish is damaged, the finish shall be re-applied at no cost to the contract.

Warranty.

The Contractor shall furnish in writing to the Engineer, the paint vendor's standard warranty and certification that the paint system has been properly applied.

Packaging.

Prior to shipping, the poles and posts shall be wrapped in ultraviolet-inhibiting plastic foam or rubberized foam.

Basis of Payment. This work shall be paid for at the contract unit price EACH for PAINT NEW MAST ARM AND POLE, UNDER 40 FEET (12.19 METER), PAINT NEW MAST ARM AND POLE, 40 FEET (12.19 METER) AND OVER, PAINT NEW COMBINATION MAST ARM AND POLE, UNDER 40 FEET (12.19 METER), PAINT NEW COMBINATION MAST ARM AND POLE, 40 FEET (12.19 METER) AND OVER, or PAINT NEW TRAFFIC SIGNAL POST of the length specified, which shall be payment in full for painting

and packaging the traffic signal mast arm poles and posts described above including all shrouds, bases and appurtenances.

**SPECIAL PROVISION  
FOR  
UNINTERRUPTABLE POWER SUPPLY, GROUND MOUNTED**

This item shall consist of furnishing and installing an uninterruptable power supply. This item shall meet the requirements of Section 862 and 1074.04 of the Supplemental Specifications and Recurring Special Provisions, except as follows:

The UPS shall have the power capacity to provide normal operation of a signalized intersection that utilizes all LED type signal head optics, for a minimum of ten hours.

The UPS shall additionally include, but not be limited to, a battery cabinet. The UPS shall provide reliable emergency power to the traffic signals in the event of a power failure or interruption.

Installation.

The UPS shall be mounted on its own Type A square concrete foundation. The concrete foundation shall extend 2 inch past each side of the UPS cabinet and the edges shall have a continuous 1 inch chamfer at a 45 degree angle.

A concrete apron shall be provided with a dimension of 36 inches in front of the UPS cabinet, 5 inches deep, and a width sized appropriately to the width of the concrete foundation. The concrete apron shall follow Articles 424 and 202 of the Standard Specifications.

When a UPS is installed at a new signal cabinet and foundation, it shall be mounted as shown on the plans. At locations where UPS is installed and Emergency Vehicle Priority System is in use, any existing incandescent confirmation beacons shall be replaced with LED lamps in accordance with the Cook County Emergency Vehicle Priority System specification at no additional cost to the contract.

This item shall include any required modifications to an existing traffic signal controller as a result of the addition of the UPS including the addition of alarms.

Bypass switch shall completely disconnect the traffic signal cabinet from the utility provider.

Material:

The UPS shall be line interactive or double conversion and provide voltage regulation and power conditioning when utilizing utility power. The UPS shall be sized appropriately for the intersection's normal traffic signal operating connected load, plus 20 percent (20%). When installed at a railroad-interconnected intersection the UPS must maintain the railroad pre-emption load, plus 20 percent (20%) of the railroad preemption-operating load. The total connected traffic signal load shall not exceed the published ratings for the UPS. The UPS shall provide a minimum of ten (10) hours of normal operation run-time for signalized intersections with LED type signal head optics at 77 °F (25 °C) (minimum 1000W active output capacity, with 86 percent minimum inverter efficiency).

The UPS shall have a minimum of four (4) sets of normally open (NO) and normally closed (NC) single-pole double-throw (SPDT) relay contact closures, available on a panel mounted terminal block or locking circular connectors, rated at a minimum 120 V/1 A, and labeled so as to identify each contact according to the plans.

The UPS shall be compatible with the County's approved traffic controller assemblies utilizing NEMA TS 1 or NEMA TS 2 controllers and cabinet components for full time operation.

When the intersection is in battery backup mode, the UPS shall bypass all internal cabinet lights, ventilation fans, service receptacles, any lighted street name signs, heater, street lights, any automated enforcement equipment and any other devices directed by the Engineer.

Batteries, inverter/charger and power transfer relay shall be housed in a separate NEMA Type 3R cabinet. The cabinet shall be Aluminum alloy, 5052-H32, 0.125-inch thick and have a natural mill finish.

No more than three batteries shall be mounted on individual shelves for a cabinet housing six batteries and no more than four batteries per shelf for a cabinet housing eight batteries.

The battery cabinet housing shall have the following nominal outside dimensions: a width of 25 in. (785 mm), a depth of 16 in. (440 mm), and a height of 41 to 48 in. (1.1 to 1.3 m). Clearance between shelves shall be a minimum of 10 in. (250 mm).

The door shall be equipped with a two position doorstop, one a 90° and one at 120°.

The door shall open to the entire cabinet, have a neoprene gasket, an Aluminum continuous piano hinge with stainless steel pin, and a three point locking system. The cabinet shall be provided with a main door lock which shall operate with a traffic industry conventional No. 2 key. Provisions for padlocking the door shall be provided.

The battery cabinet shall have provisions for an external generator connection.

The UPS shall include a tip or kill switch installed in the battery cabinet, which shall completely disconnect power from the UPS when the switch is manually activated.

The UPS shall include standard RS-232 and internal Ethernet interface.

The UPS shall incorporate a flanged electric generator inlet for charging the batteries and operating the UPS. The generator connector shall be male type, twist-lock, rated as 15A, 125VAC with a NEMA L5-15P configuration and meets UL and CSA testing and has a weatherproof lift cover plate. Access to the generator inlet shall be from a secured weatherproof lift cover plate or behind a locked battery cabinet police panel.

The bypass switch shall include an internal power transfer relay that allows removal of the battery back-up unit, while the traffic signal is connected to utility power, without impacting normal traffic signal operation.

Battery System: All batteries supplied in the UPS shall be either gel cell or AGM type, deep cycle, completely sealed, prismatic lead calcium based, silver alloy, valve regulated lead acid (VRLA) requiring no

maintenance. All batteries in a UPS installation shall be the same type; mixing of gel cell and AGM types within a UPS installation is not permitted.

Batteries shall be certified by the manufacturer to operate over a temperature range of -13 to 160 °F (-25 to + 71 °C) for gel cell batteries and -40 to 140 °F (-40 to + 60 °C) for AGM type batteries.

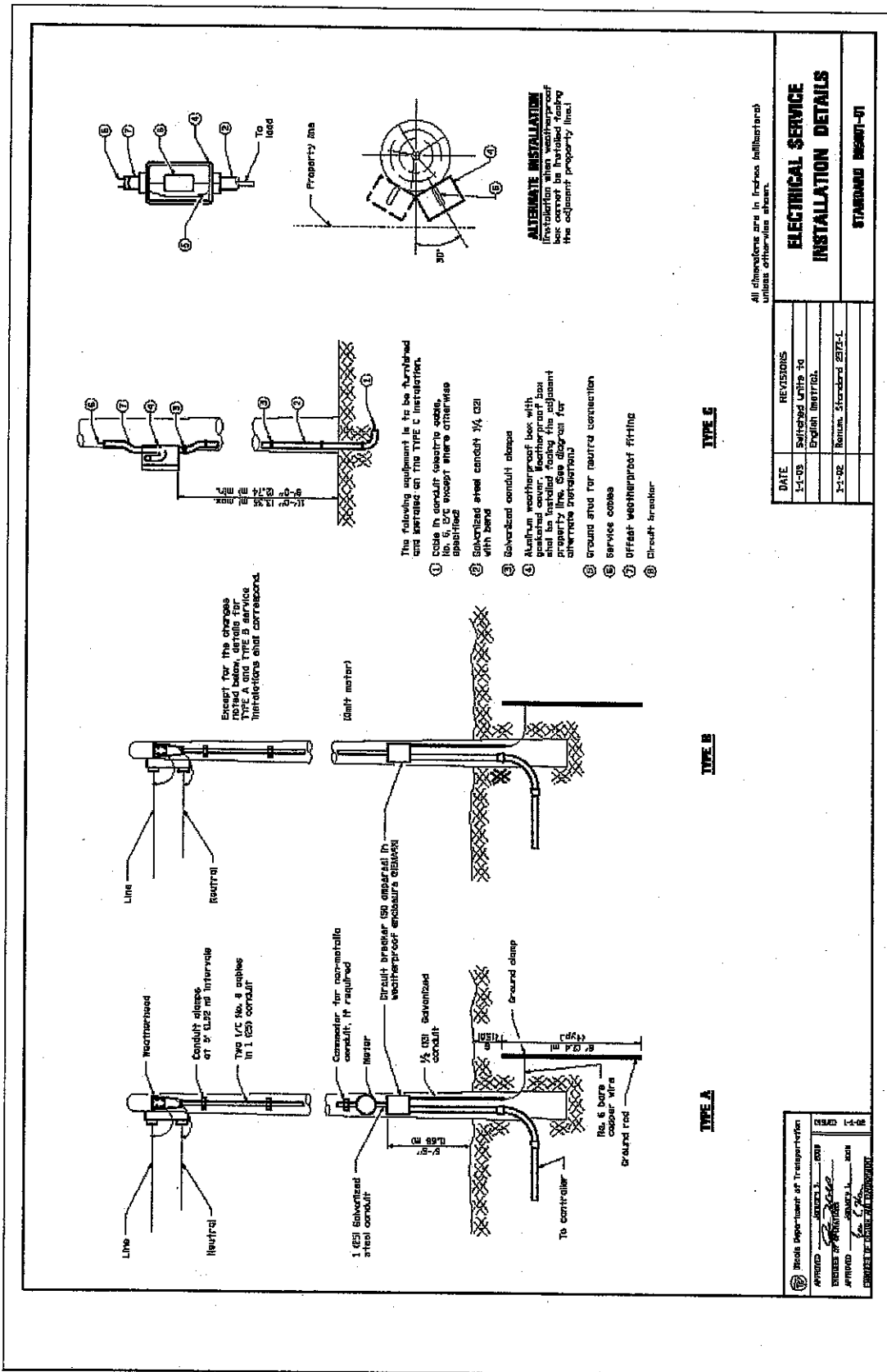
The UPS shall consist of an even number of batteries that are capable of maintaining normal operation of the signalized intersection for a minimum of ten hours. Calculations shall be provided showing the number of batteries of the type supplied that are needed to satisfy this requirement. A minimum of four batteries shall be provided.

Battery Heater mats shall be provided, when gel cell type batteries are supplied.

The warranty for an uninterruptible power supply (UPS) shall cover a minimum of five years from date the equipment is placed in operation; however, the batteries of the UPS shall be warranted for full replacement for a minimum of five years from the date the traffic signal and UPS are placed into service.

The UPS shall be set-up to run the traffic signal continuously, without going to a red flashing condition, when switched to battery power unless otherwise directed by the Engineer. The Contractor shall confirm set-up with the Engineer. The continuous operation mode when switched to battery may require modification to unit connections and these modifications are included in the unit price for this item.

Basis of Payment. This item will be paid for at the contract unit price EACH for UNINTERRUPTABLE POWER SUPPLY, GROUND MOUNTED. Replacement of Emergency Vehicle Priority System confirmation beacons and any required modifications to the traffic signal controller shall be included in the cost of the UNINTERRUPTABLE POWER SUPPLY, GROUND MOUNTED item. The concrete foundation, concrete apron and earth excavation required shall be included in the cost of the UNINTERRUPTABLE POWER SUPPLY, GROUND MOUNTED item. The concrete apron and earth excavation required shall be included in the cost of this pay item.



All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-03	Swedish Units to English Metric.
1-1-02	Revised Standard 2072-1.

**ELECTRICAL SERVICE  
INSTALLATION DETAILS**

STANDARD DESIGN-01

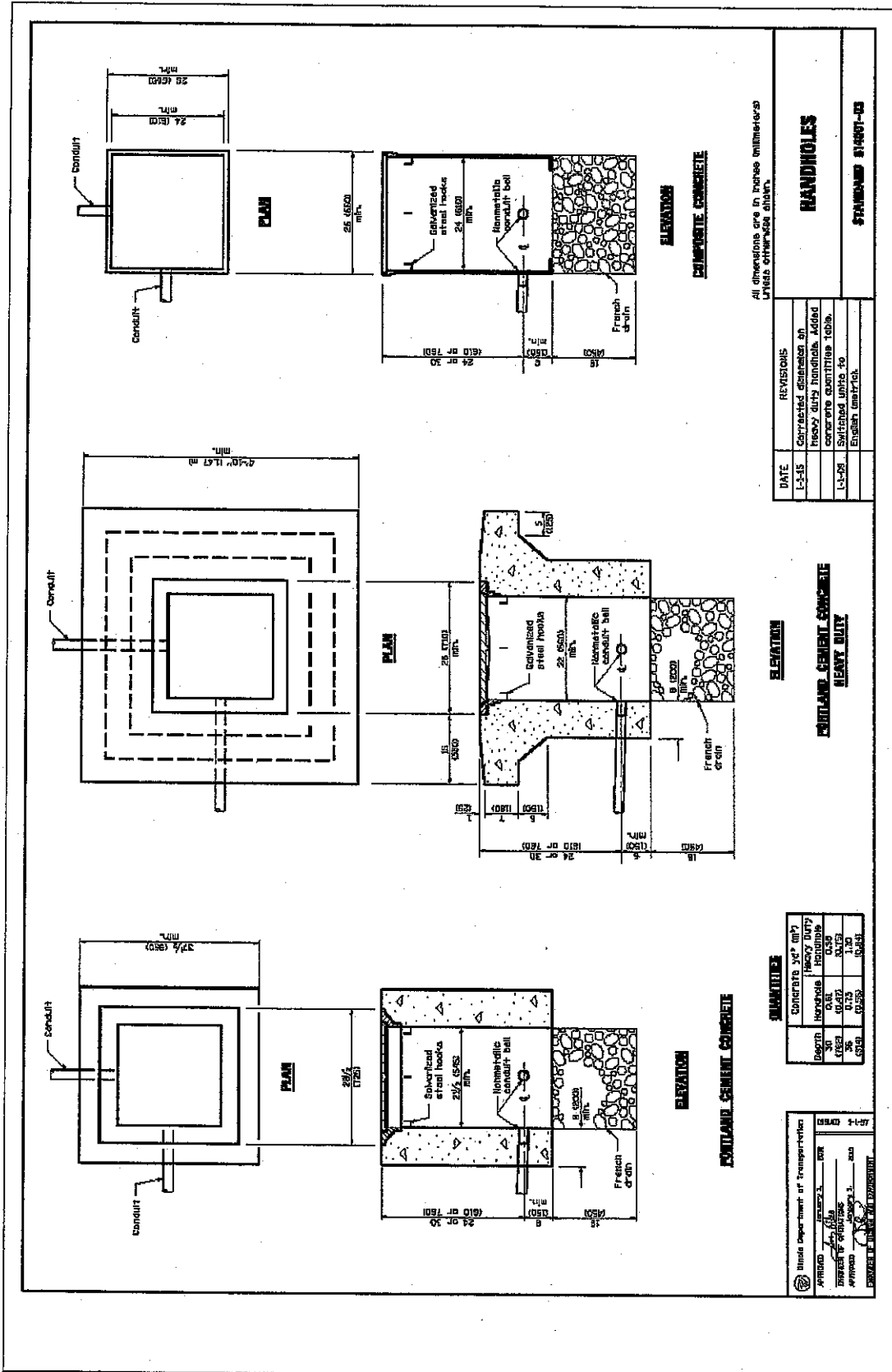
TYPE S

TYPE B

TYPE A

APPROVED	DESIGNED BY	DATE
		1-1-03
		1-1-02

Inside Department of Transportation  
 FEDERAL HIGHWAY ADMINISTRATION  
 WASHINGTON, D.C. 20591



All dimensions are in inches (millimeters) unless otherwise shown.

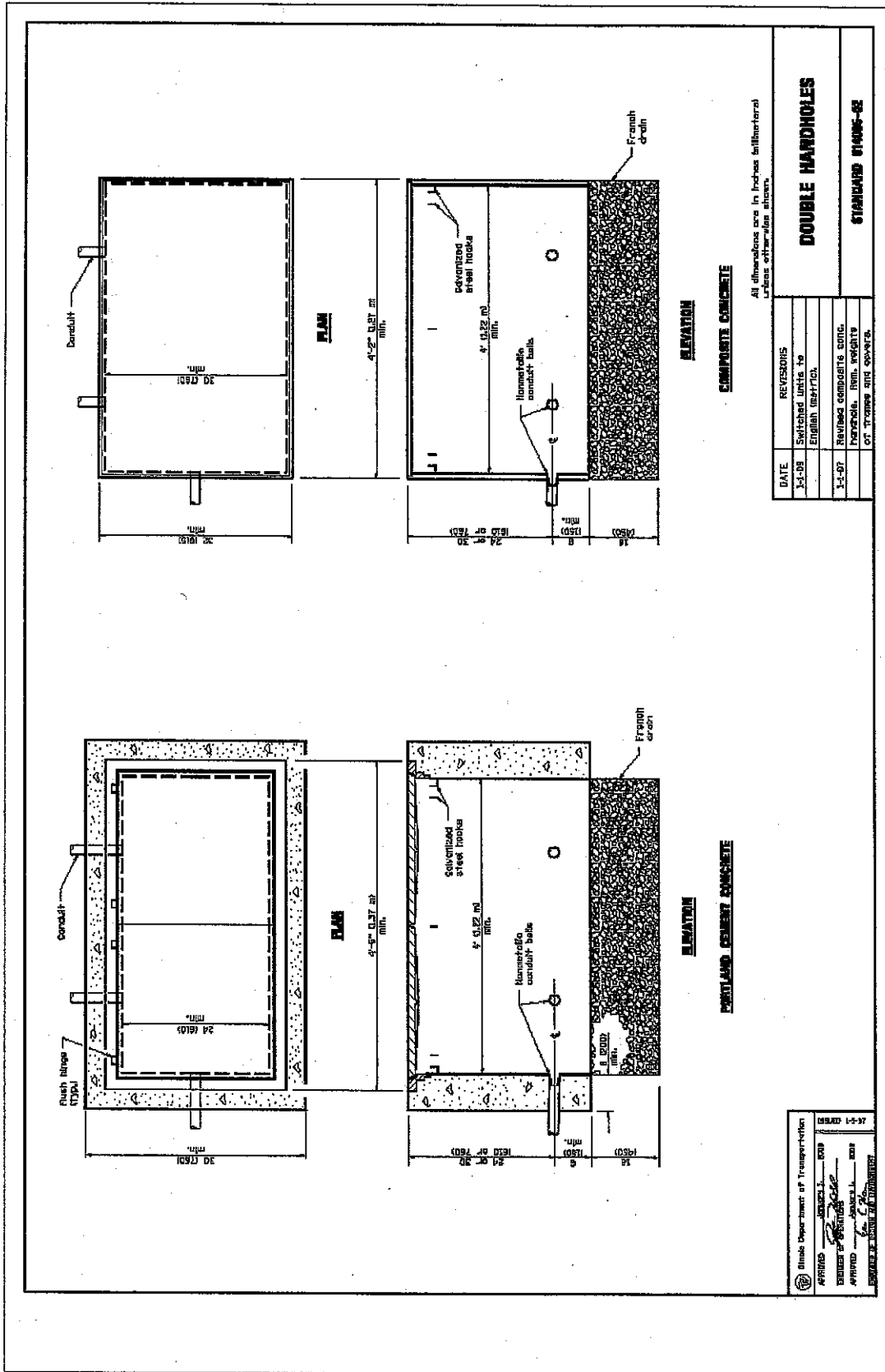
DATE	REVISIONS
L-3-15	Contracted dimension on heavy duty handhole. Added concrete quantities table.
L-3-28	Switched units to English unit/ft.

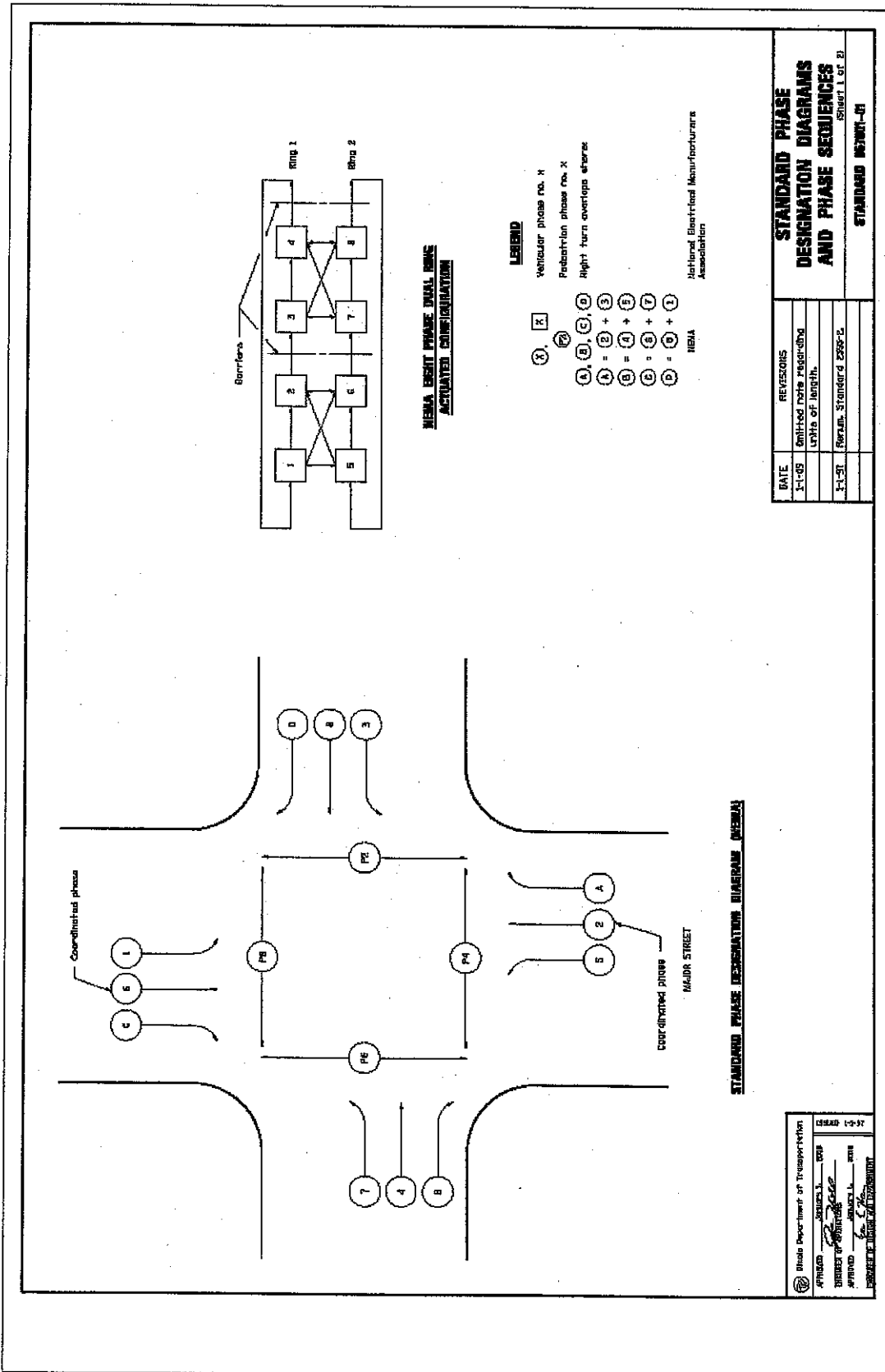
QUANTITIES	Concrete yd <sup>3</sup> (m <sup>3</sup> )
Depth	0.00
Handhole	0.00
Reinforcing	0.00
1.00	0.73
2.00	1.20
3.00	0.95

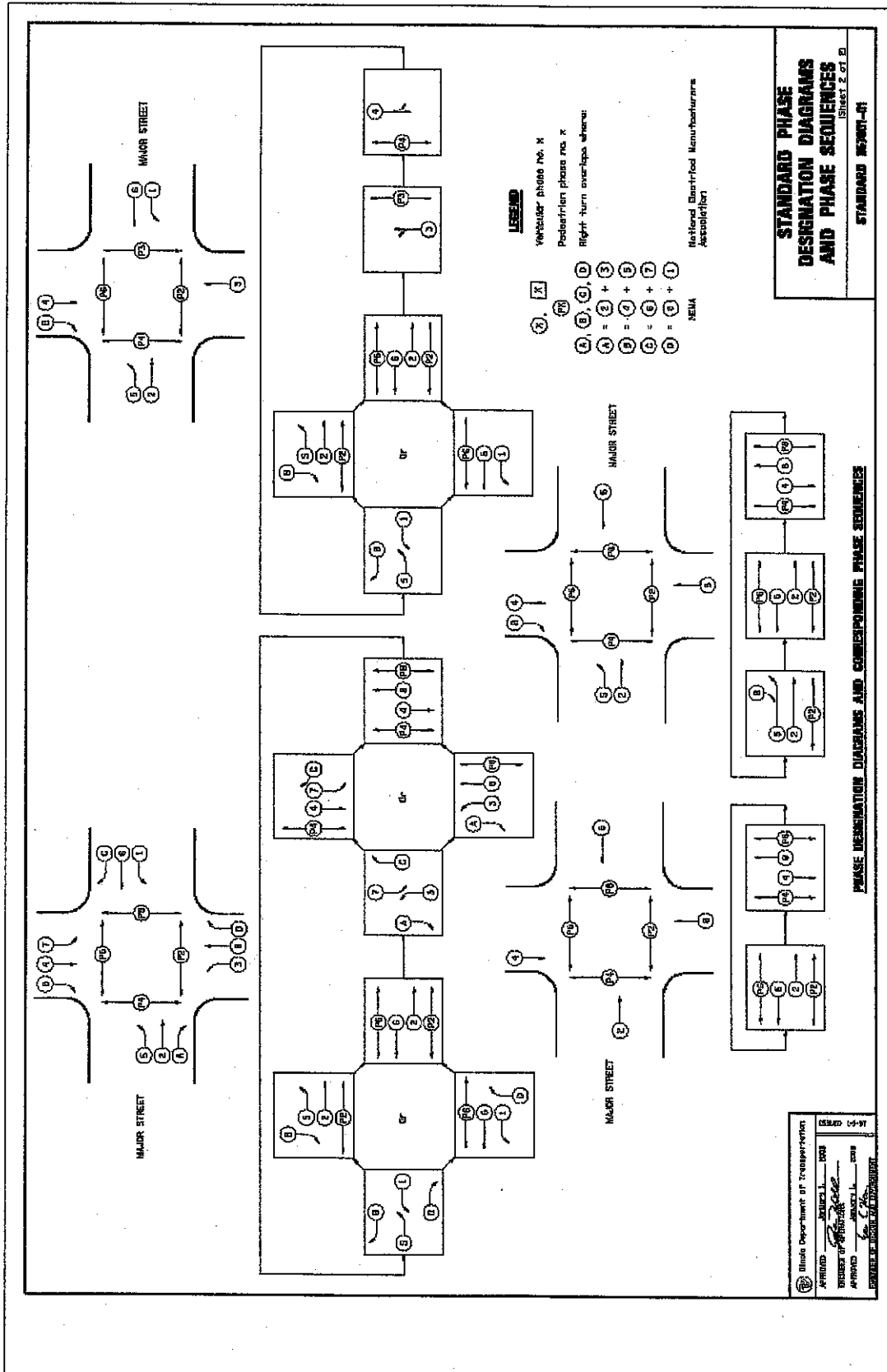
APPROVED	FOR
_____ APPROVED	FOR
_____ APPROVED	FOR
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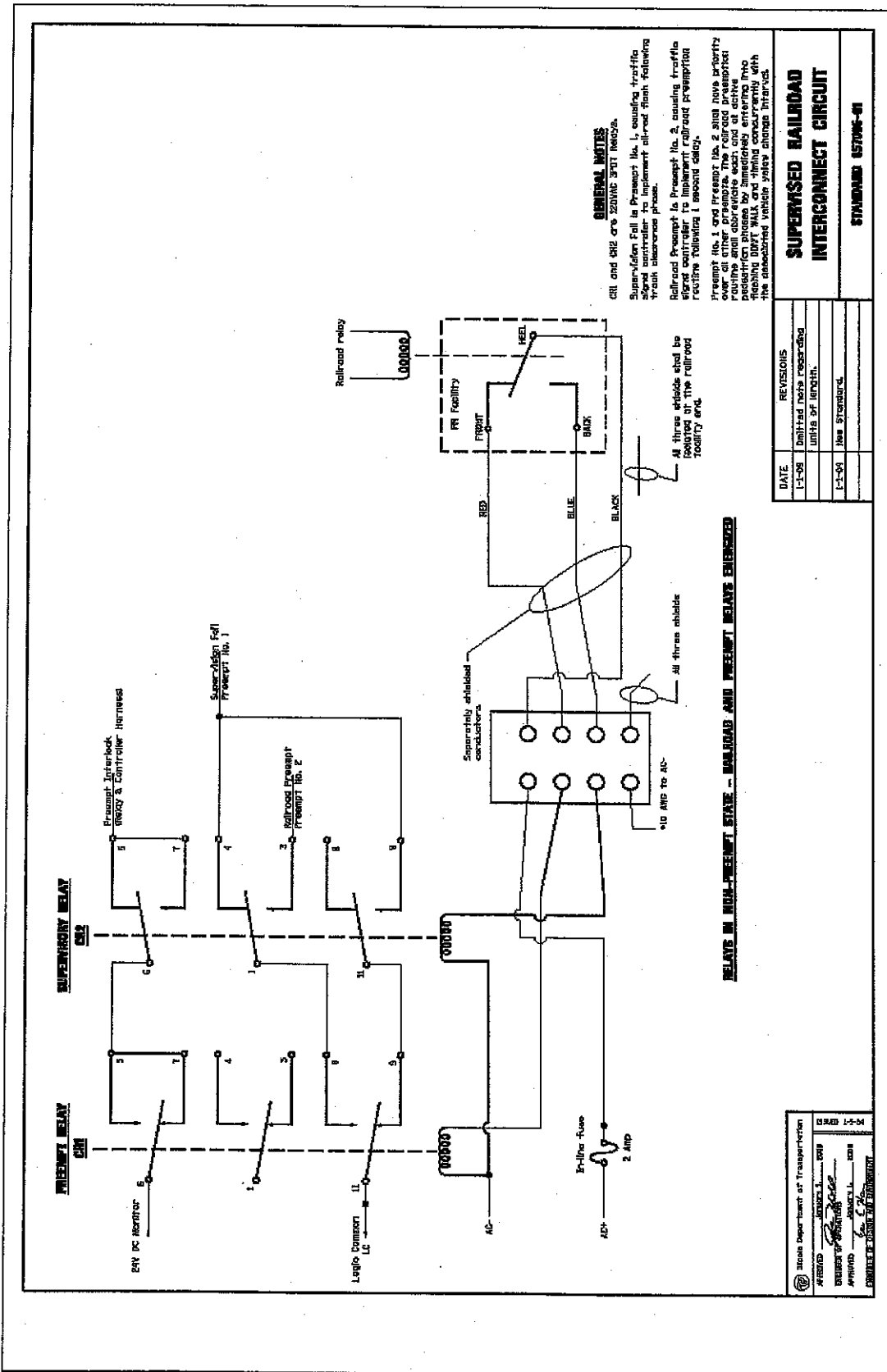
United Department of Transportation  
 PROJECT NO. 1628-15554  
 SHEET NO. 1628-15554-05











**GENERAL NOTES**

CR1 and CR2 are 220VAC 3RT Relays.  
 Supervision Fail is Project No. 1, excluding traffic signal controller to implement all-road flash following track clearance phase.  
 Railroad Preempt is Project No. 2, excluding traffic signal controller to implement railroad preemption routine following 1 second delay.  
 Project No. 1 and Project No. 2 shall have priority over all other projects. The railroad preemption routine shall abort each and at active pedestrian phases by immediately entering into the preemption state. The railroad shall be energized with the associated vehicle unless change intervals.

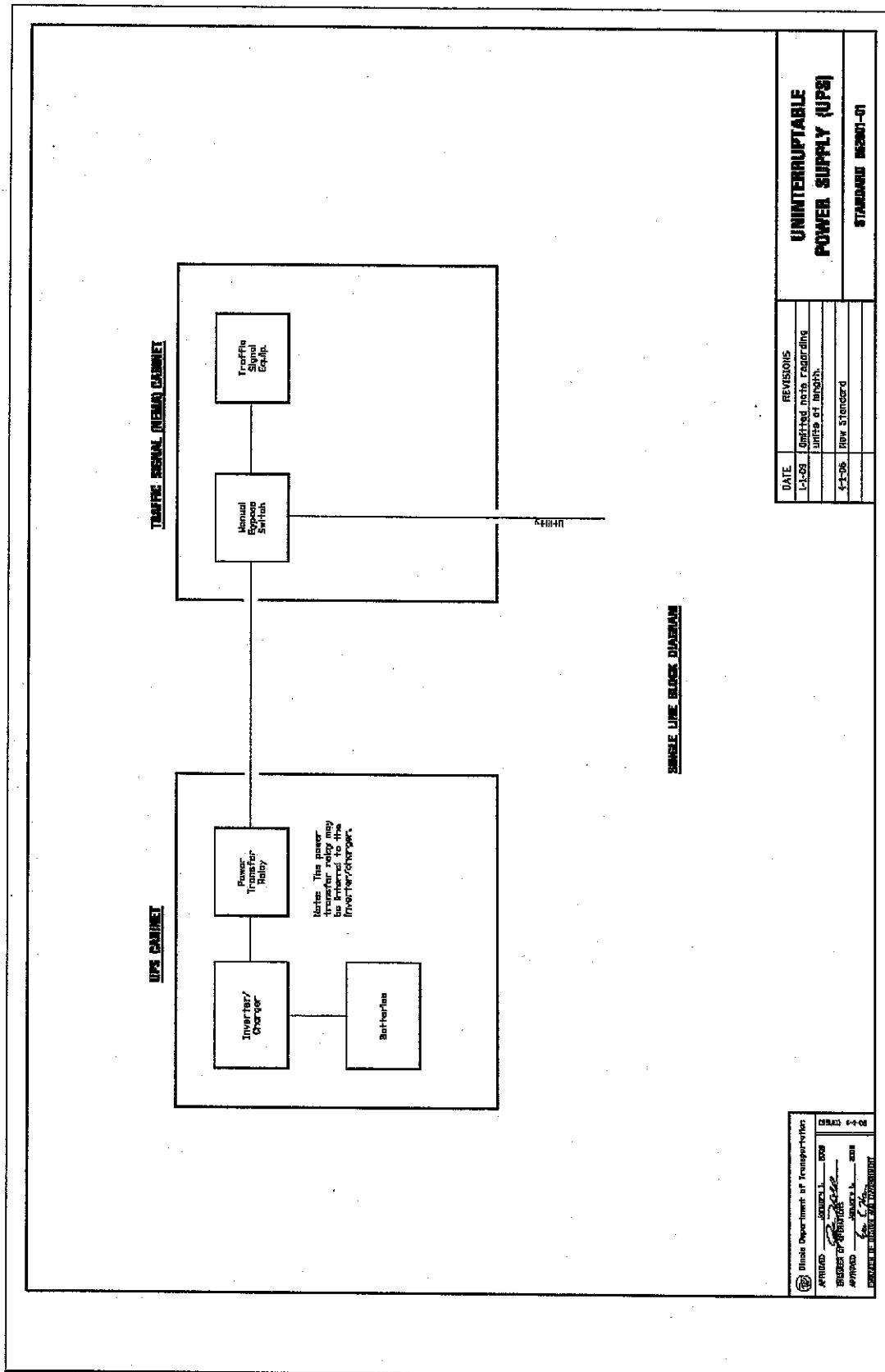
SUPERSEDED RAILROAD INTERCONNECT CIRCUIT	
STANDARD 65704F-01	

DATE	REVISIONS
1-1-08	Initial data recording units of length.
1-1-08	New Standard.

**RELAYS IN HIGH-PREEMPT STATE -- RAILROAD AND PREEMPT RELAYS ENERGIZED**

APPROVED	DESIGNED	DATE
APPROVED	DESIGNED	DATE
APPROVED	DESIGNED	DATE

Illinois Department of Transportation  
 PROJECT NO. 1628-15554  
 DRAWING NO. 1628-15554-01



DATE	REVISIONS
1-1-89	Original Draft, Engineering
	DRAFTS BY: WJH/SLH
1-1-98	REV STANDARD

**UNINTERRUPTIBLE POWER SUPPLY (UPS)**

STANDARD NUMBER: 01

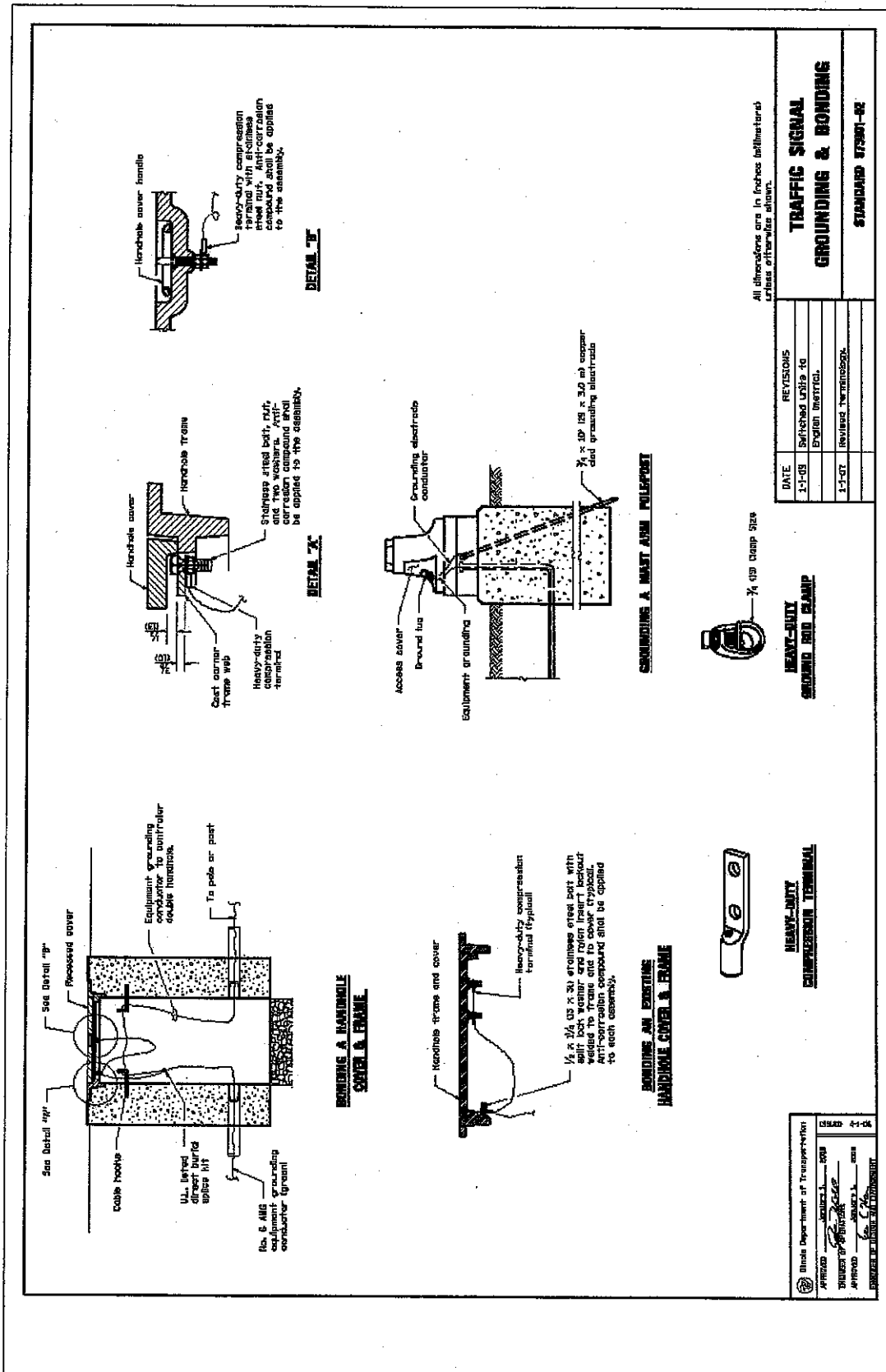
Illinois Department of Transportation

APPROVED: [Signature] DATE: [Date]

DESIGNED BY: [Signature] DATE: [Date]

DRAWN BY: [Signature] DATE: [Date]

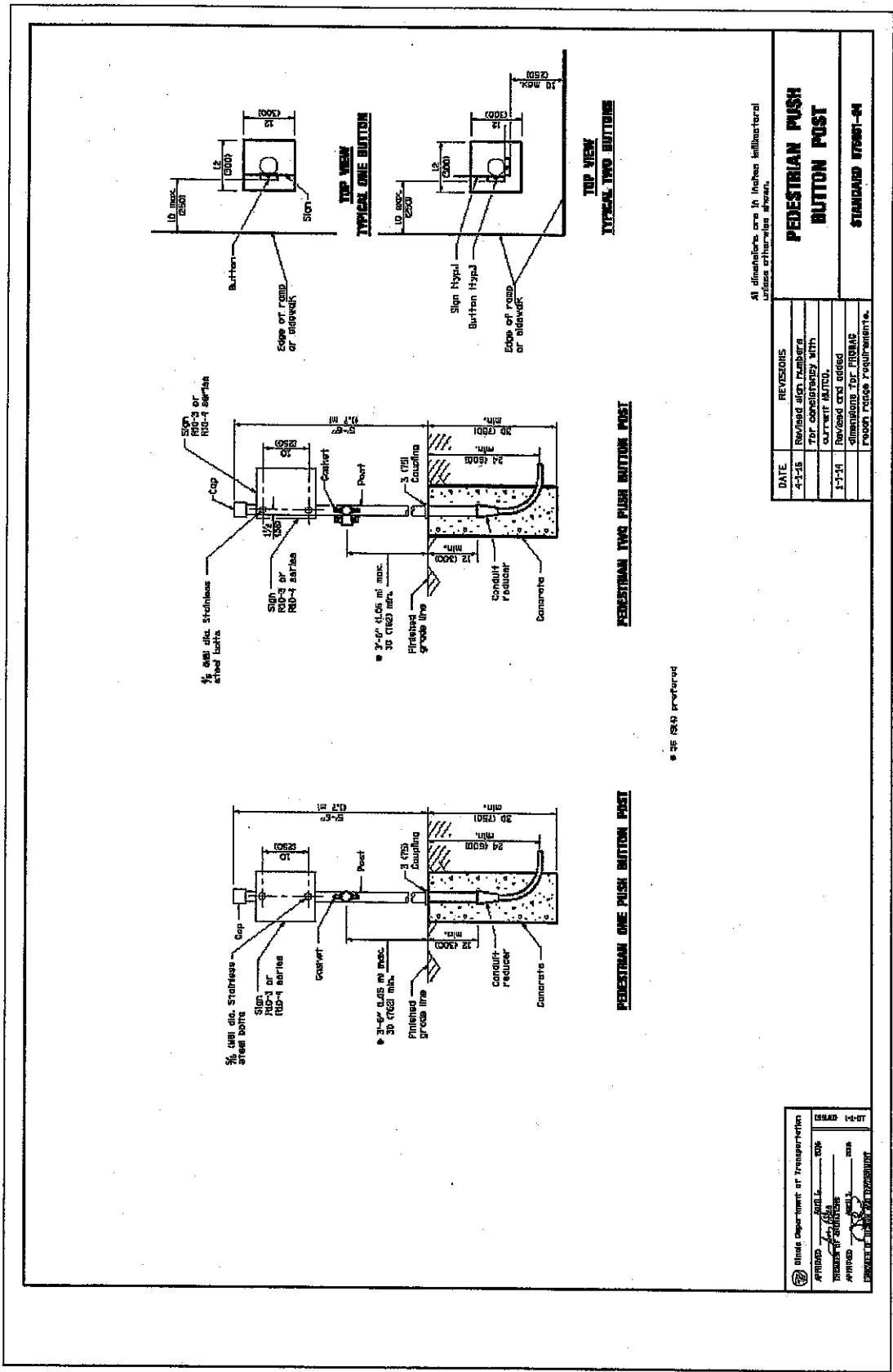
CHECKED BY: [Signature] DATE: [Date]



All dimensions are in inches unless otherwise stated.

TRAFFIC SIGNAL GROUNDING & BONDING	
DATE	REVISIONS
1-1-03	Switched Lines to English Metric.
1-1-07	Revised Terminology.
STANDARD 875001-02	

Illinois Department of Transportation  
 APPROVED: [Signature] 089  
 DESIGNER: [Signature] 089  
 CHECKED: [Signature] 089  
 DRAWN BY: [Signature] 089  
 IN CHARGE OF DESIGN: [Signature] 089



All dimensions are in inches unless otherwise shown.

DATE	REVISIONS
4-1-16	Revised sign numbers for consistency with current MUTCD
7-7-14	Revised CTS loaded
	Submitted for ITBMS
	Final issue requirements

**PEDESTRIAN PUSH BUTTON POST**

STANDARD ITEM-01

PEDESTRIAN TWO PUSH BUTTON POST

PEDESTRIAN ONE PUSH BUTTON POST

© 2010 Kiewit

State Department of Transportation

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

DESIGNED BY: \_\_\_\_\_

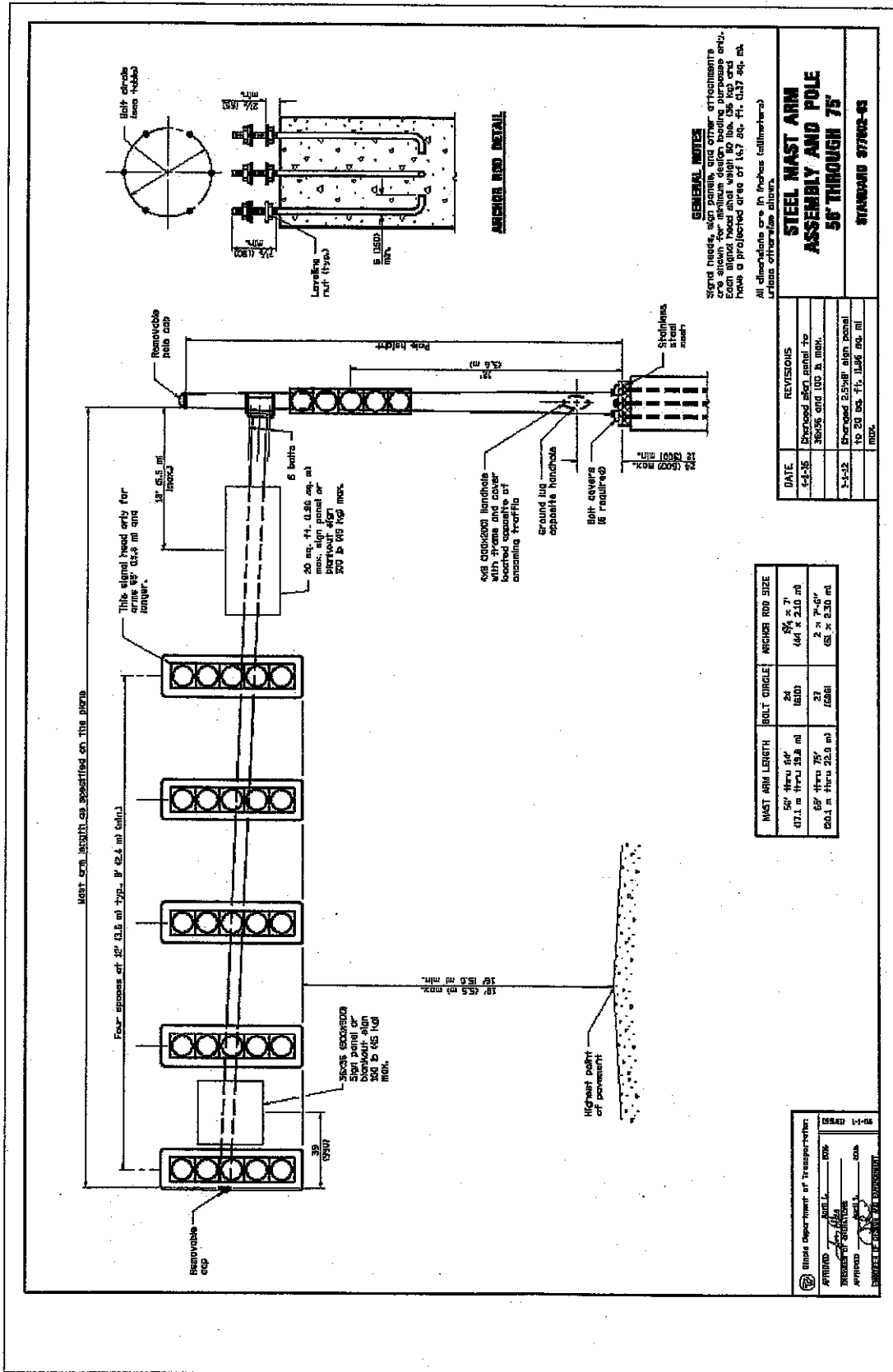
PROJECT NO.: \_\_\_\_\_

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

PROJECT NO.: \_\_\_\_\_







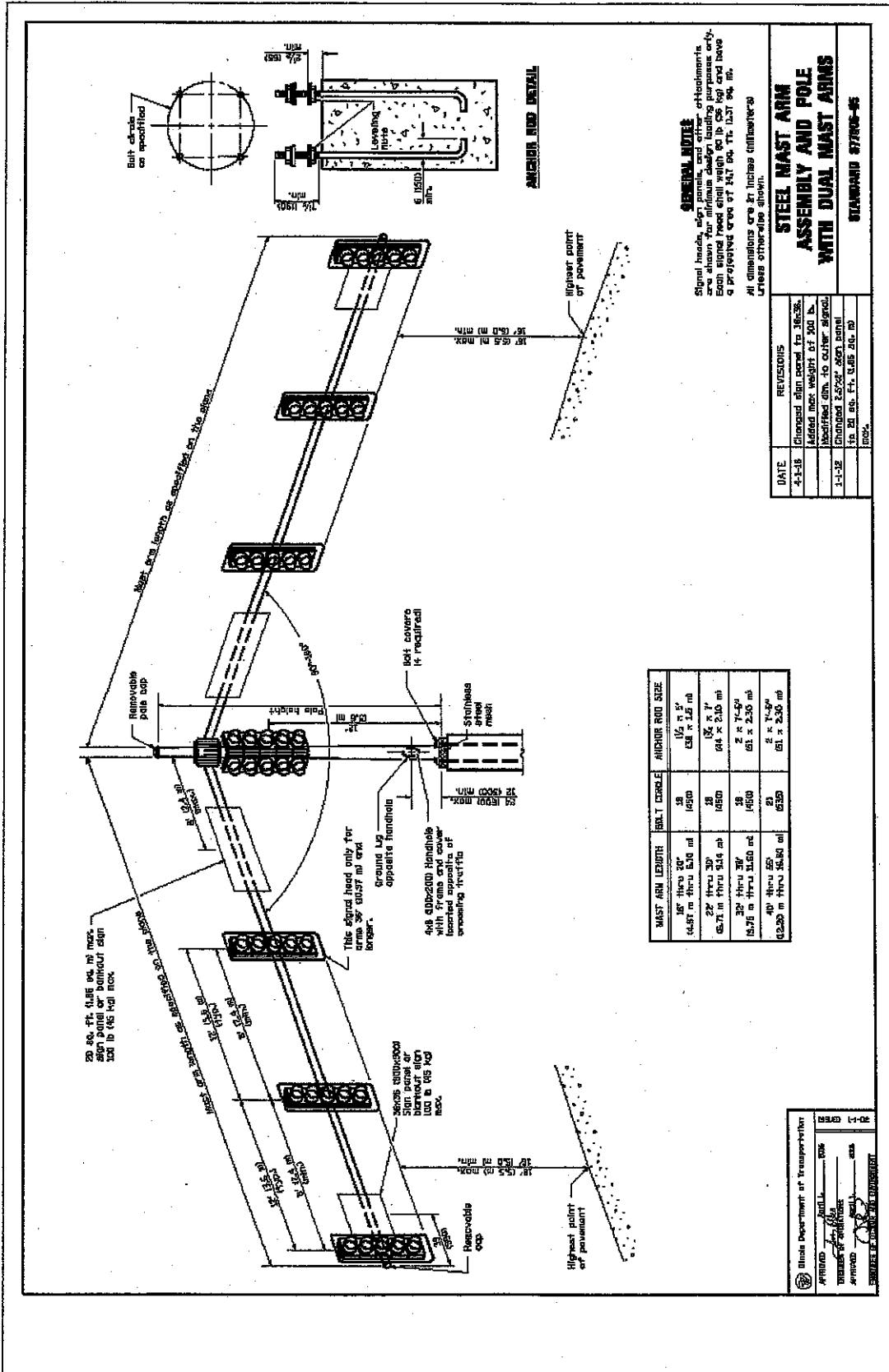
**GENERAL NOTES**  
 Signal heads, sign panels, and other attachments are shown for minimum design loading purposes only. Each signal head shall weigh 25 lbs. per sq. ft. and have a projected area of 167 sq. ft. (157 sq. ft. unless otherwise shown).  
 All dimensions are in inches (millimeters).

**STEEL MAST ARM ASSEMBLY AND POLE 56' THROUGH 75'**  
**STANDARD 977002-03**

DATE	REVISIONS
11-1-88	Standard also apply to 30395 and 100 to 1000.
1-2-92	Standard 25000 also apply 100 to 1000.

MAST ARM LENGTH	BOLT CIRCLE	INCHES	ROD SIZE
56' thru 64' 47.1 m thru 59.8 m	24	600	5/8" x 7"
68' thru 75' 60.1 m thru 72.9 m	27	630	2" x 7'-0"

Missouri Department of Transportation  
 DIVISION OF HIGHWAYS  
 PROJECT NO. 1628-15554  
 SHEET NO. 1-1-10  
 DRAWN BY: [Signature]  
 CHECKED BY: [Signature]  
 APPROVED BY: [Signature]



**GENERAL NOTE**  
Signal heads, lens panels, and other attachments shall be furnished by the contractor. Each signal head shall weigh 60 lb. CS 100 and have a projecting area of 34.7 sq. ft. 1.27 sq. ft.  
All dimensions are in inches unless otherwise shown.

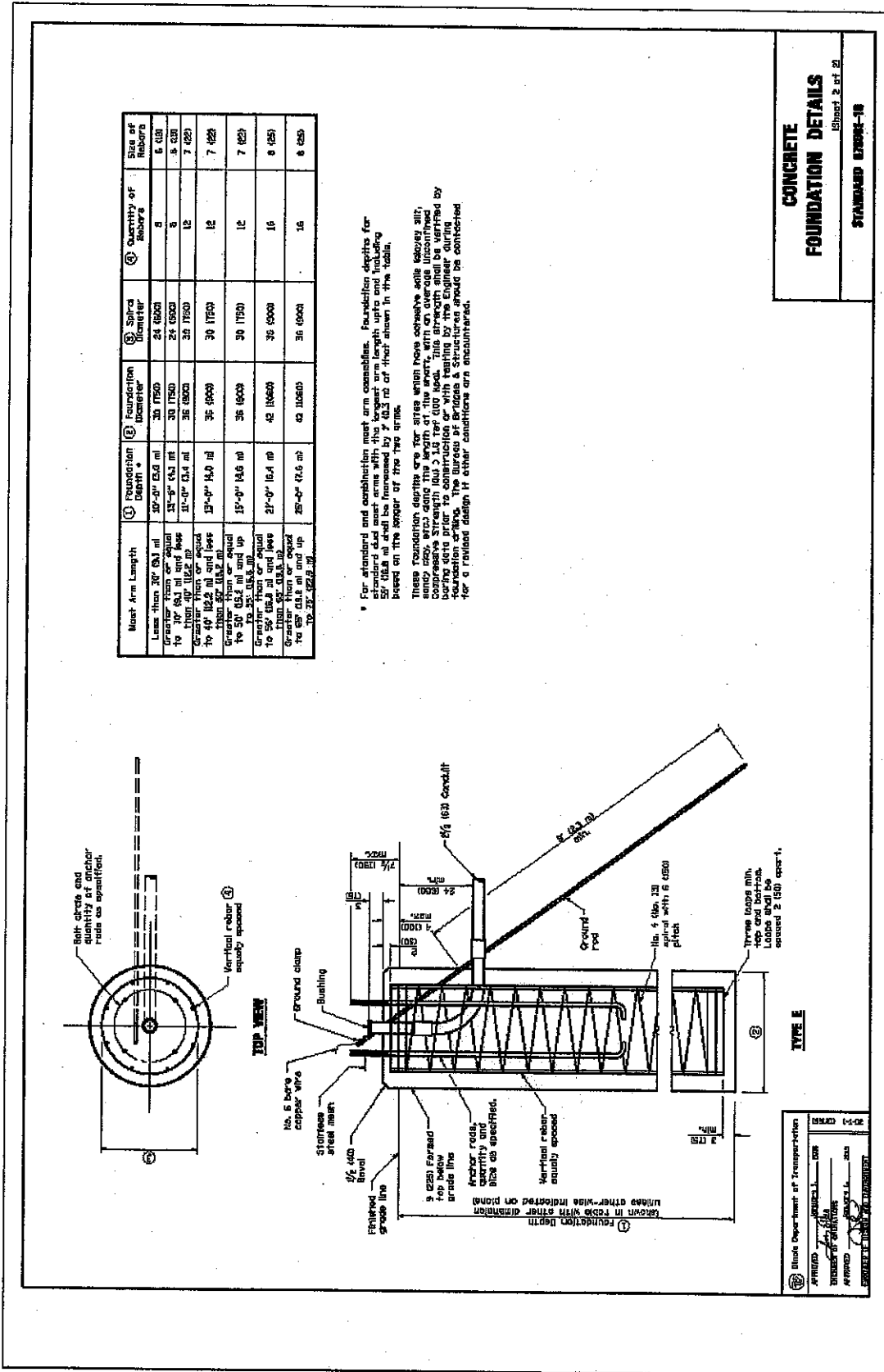
DATE	REVISIONS
4-1-18	Changed sign code to 1628.
	Added max weight of 200 lb.
	Modified 100. to other signal.
1-1-12	Changed 2.5227 to 2.5200.
	1 to 20 lbs. F-1. 1.15 216. 10.
	100.

MAST ARM LENGTH	MAST DIAMETER	ANCHOR ROD SIZE
18' thru 30'	4.875 m thru 5.70 m	1/2" x 5"
32' thru 37'	8.13 m thru 8.54 m	3/4" x 5"
39' thru 39.5'	9.14 m thru 9.27 m	1" x 5"
41' thru 41.5'	10.41 m thru 10.67 m	1 1/4" x 5"
43.25' thru 43.50'	12.57 m thru 12.80 m	1 1/2" x 5"

Illinois Department of Transportation  
 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 IN CHARGE OF DISTRICT: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_  
 PROJECT NO. 1628-15554





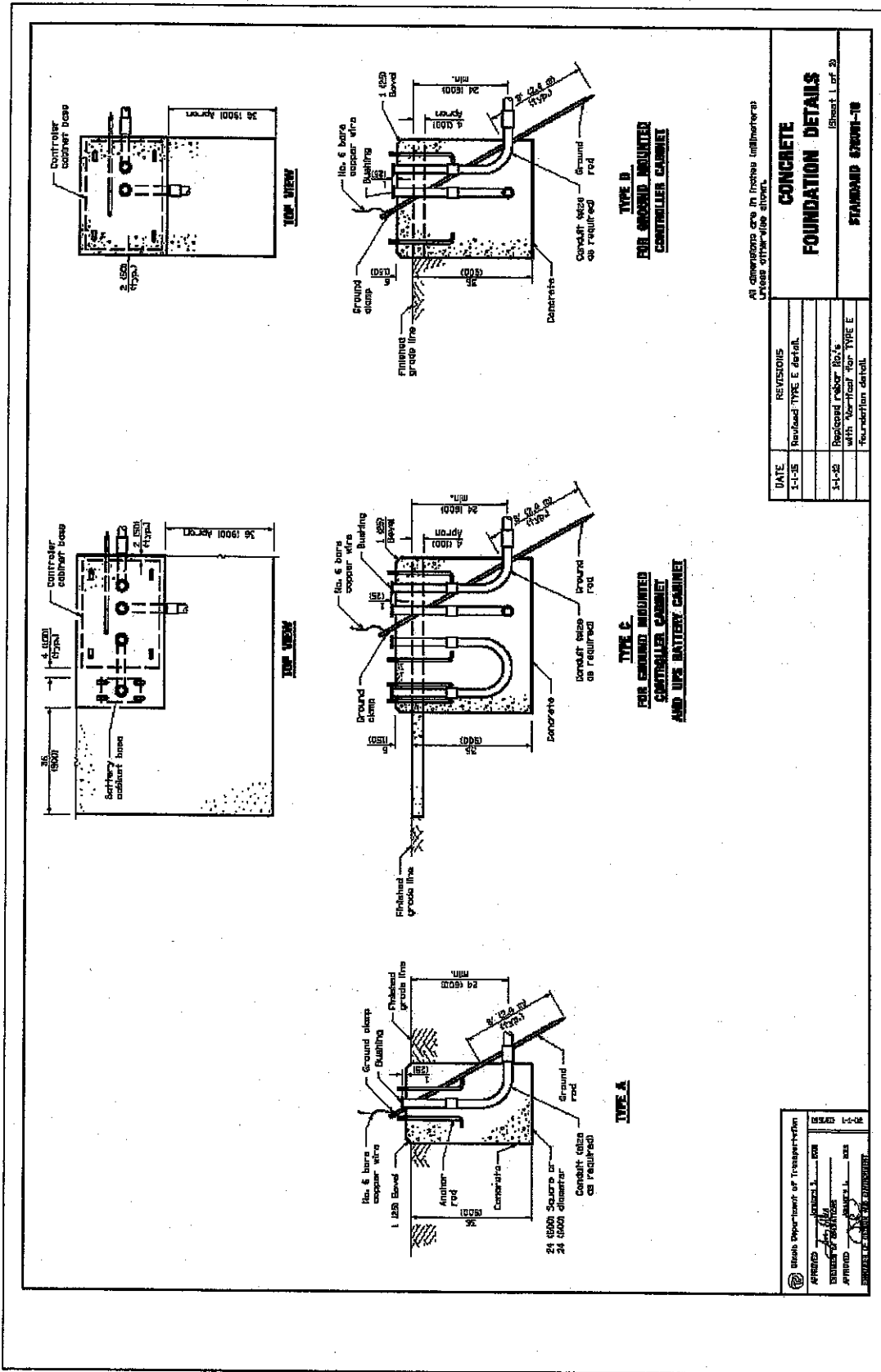


Max. Arm Length	Foundation Diameter	Foundation Diameter	Spiral Diameter	Quantity of Rebars	Size of Rebars
Less than 30' (9.1 m)	30'-0" (9.1 m)	30 (1750)	24 (620)	6	6 (18)
Greater than or equal to 30' (9.1 m) and less than 40' (12.2 m)	35'-0" (10.7 m)	30 (1750)	24 (620)	6	6 (18)
Greater than or equal to 40' (12.2 m) and less than 50' (15.2 m)	40'-0" (12.2 m)	36 (2000)	30 (760)	12	7 (20)
Greater than or equal to 50' (15.2 m) and up to 65' (19.8 m)	45'-0" (13.7 m)	36 (2000)	30 (760)	12	7 (20)
Greater than or equal to 65' (19.8 m) and less than 85' (25.9 m)	50'-0" (15.2 m)	42 (2400)	36 (900)	18	8 (25)
Greater than or equal to 85' (25.9 m)	55'-0" (16.8 m)	42 (2400)	36 (900)	18	8 (25)

\* For standard and combination mast arm assemblies, foundation depths for standard mast arms with the largest arm length up to and including 55' (16.8 m) shall be increased by 7' (2.1 m) of that shown in the table, based on the length of the two arms.

These foundation depths are for sites with non-cohesive soils (sandy silt, sand, etc.) with the length of the mast arm on average unconfined by water. For sites with cohesive soils (clay, silt, etc.) the foundation depths shall be increased by 10% of the length of the mast arm. The Bureau of Bridges & Structures should be contacted for a revised design if other conditions are encountered.

**CONCRETE FOUNDATION DETAILS**  
Sheet 2 of 2  
**STANDARD ENGINE-19**



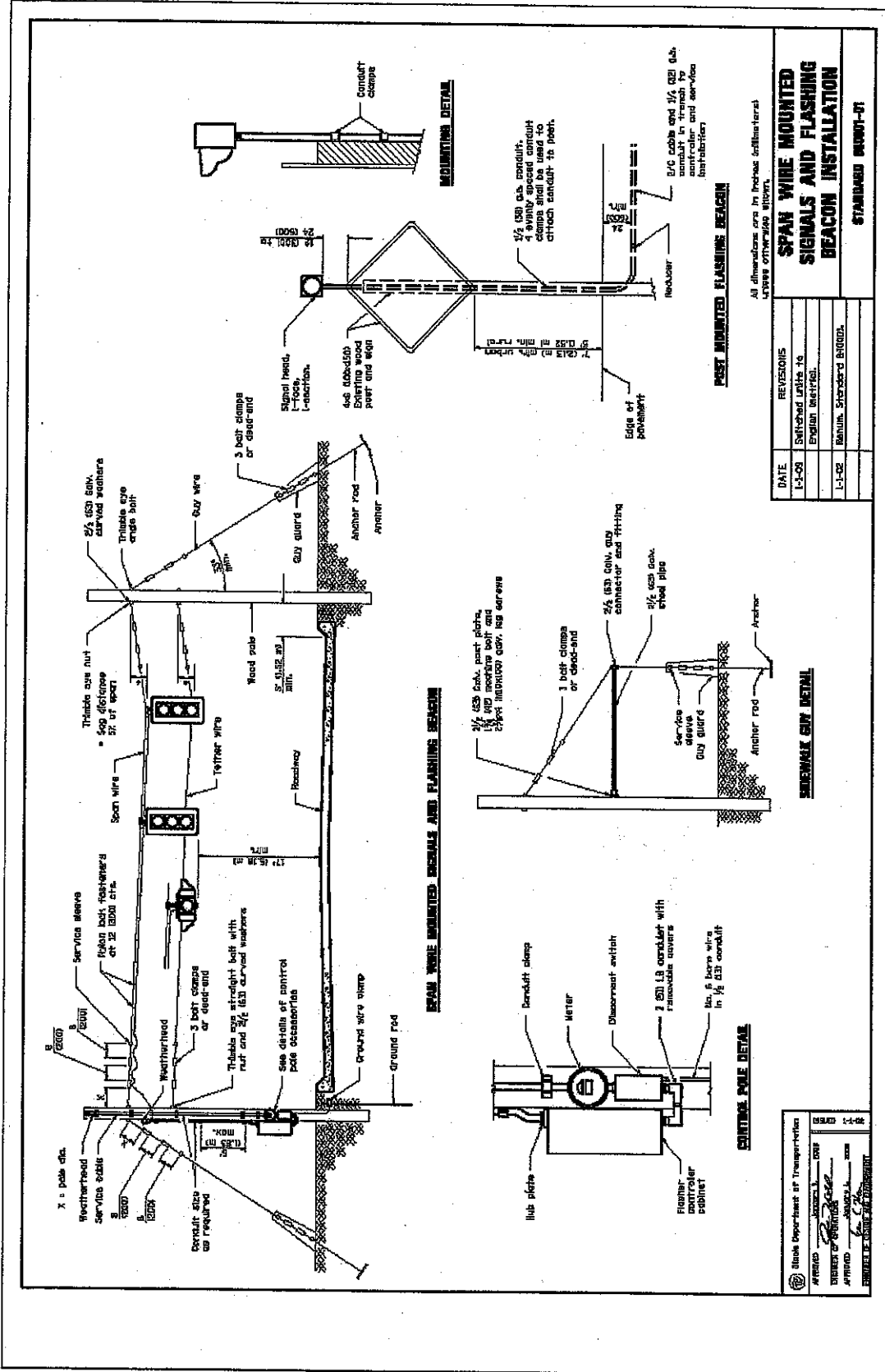
All dimensions are in inches (millimeters) unless otherwise shown.

REVISIONS	
DATE	REVISIONS
1-1-55	Revised TYPE E detail.
1-1-55	Revised cabinet No. 1 with No. 6 bars for TYPE E foundation detail.

APPROVED	DESIGNED	DRAWN
APPROVED	DESIGNED	DRAWN
STANDARD SPECIFICATION		

**CONCRETE FOUNDATION DETAILS**

Sheet 1 of 2  
**STANDARD SPECIFICATION**



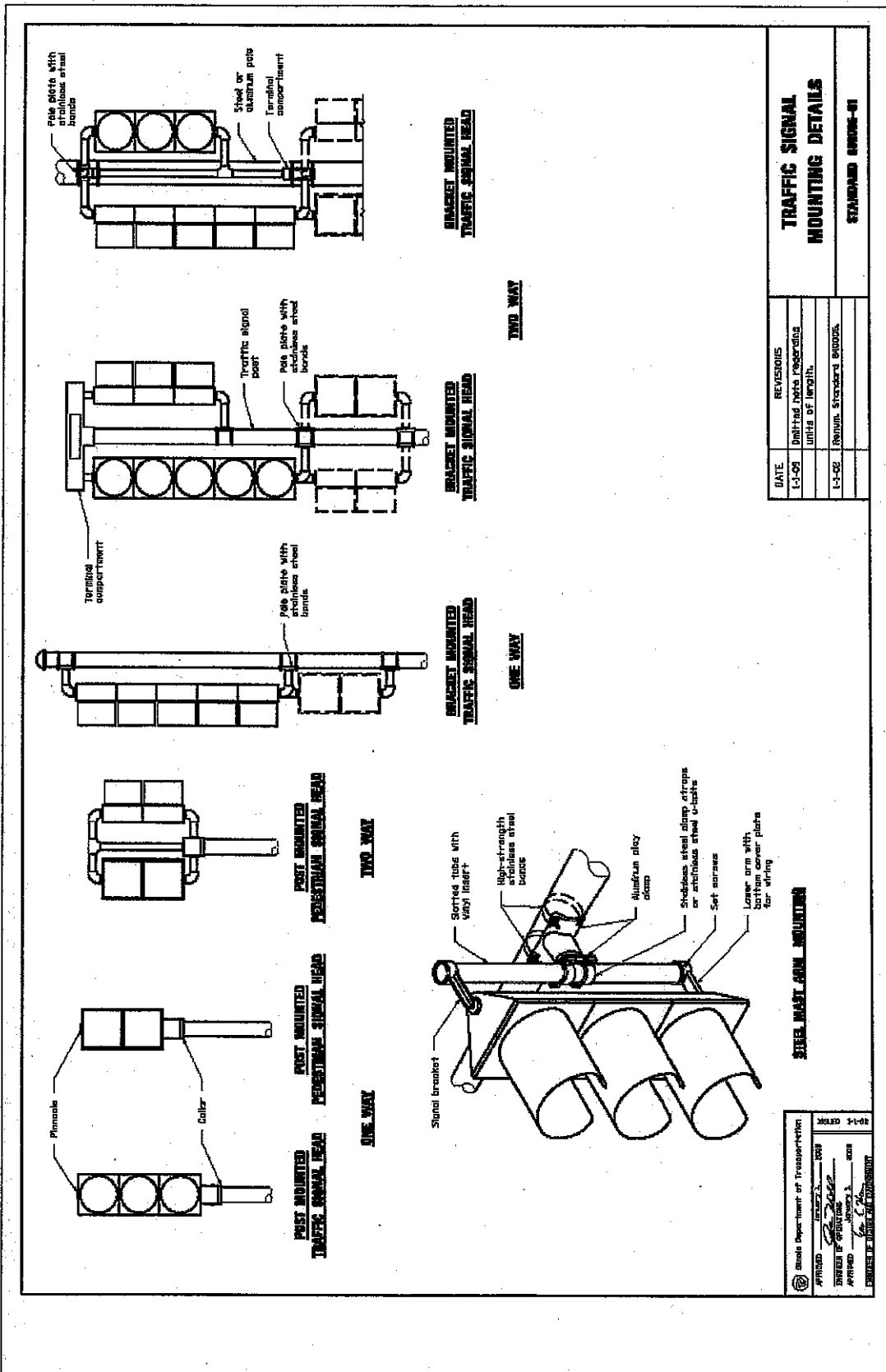
**SPAN WIRE MOUNTED SIGNALS AND FLASHING BEACON INSTALLATION**

STANDARD DRAWING-01

DATE	REVISIONS
1-1-08	Switched Leads to English Metric.
1-1-02	Revised Standard Drawing.

All dimensions are in inches (millimeters) unless otherwise stated.

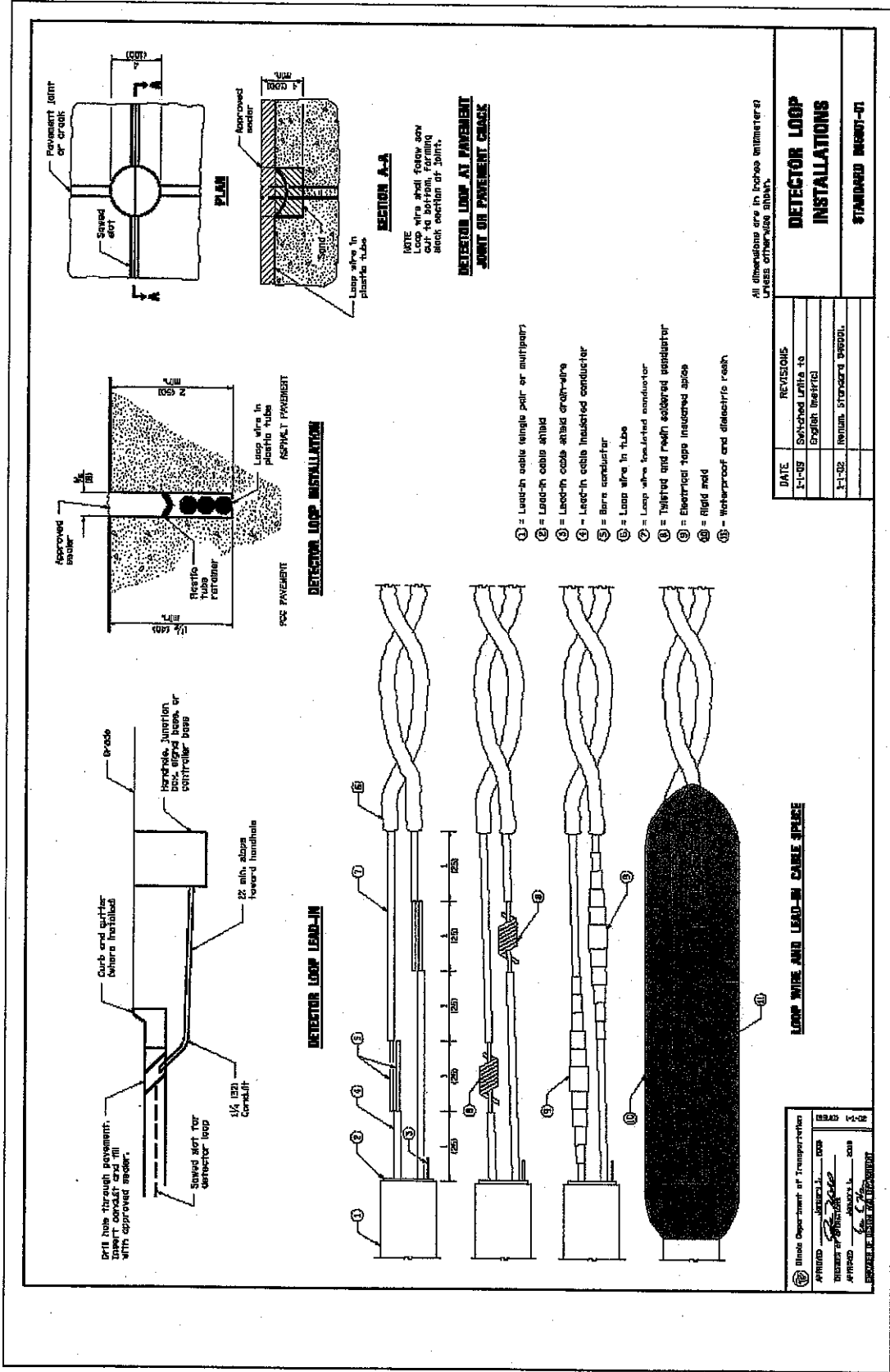
Illinois Department of Transportation  
 APPROVED: [Signature] DATE: [Blank]  
 UNIVERSITY OF ILLINOIS  
 APPROVED: [Signature] DATE: [Blank]  
 ENGINEER-IN-CHARGE

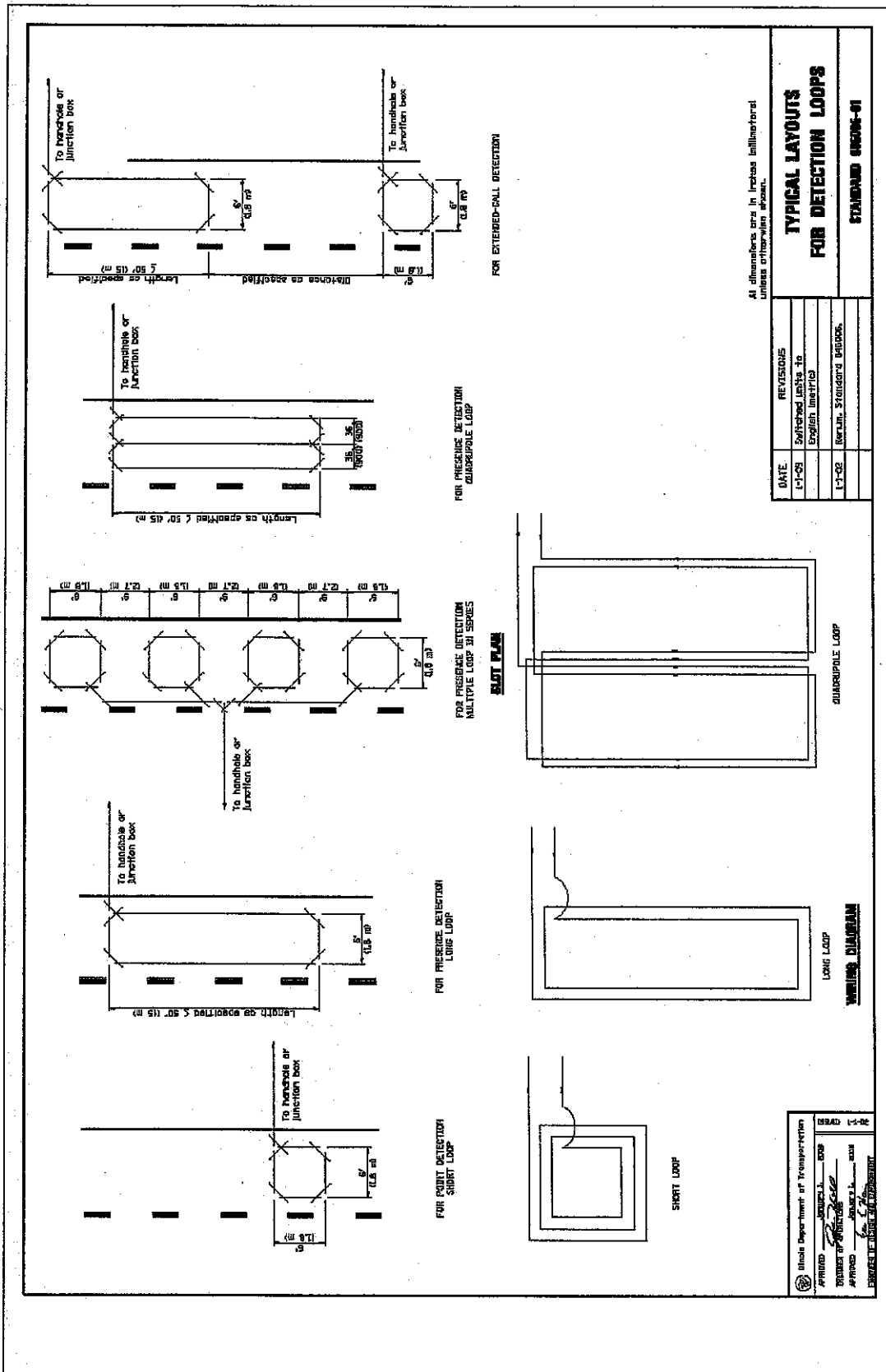


TRAFFIC SIGNAL MOUNTING DETAILS	
STANDARD CROSS-01	
DATE	REVISIONS
1-1-58	Initial tests performed
	units of length.
1-1-58	Initial standard issued.

State Department of Transportation		ROAD 3-1-58
APPROVED	DESIGNED	
BY: [Signature]	BY: [Signature]	
DATE: [Date]	DATE: [Date]	
PREPARED BY: [Signature]		









**STANDARD ALPHABETS SPACING CHART**  
1 1/2" UPPER CASE AND 1 1/4" LOWER CASE

CHARACTER	FINAL SERIES "P"		FINAL SERIES "M"		FINAL SERIES "M"	
	LEFT SPACING (INCH)	RIGHT SPACING (INCH)	LEFT SPACING (INCH)	RIGHT SPACING (INCH)	LEFT SPACING (INCH)	RIGHT SPACING (INCH)
A	0.100	0.100	0.100	0.100	0.100	0.100
B	0.100	0.100	0.100	0.100	0.100	0.100
C	0.100	0.100	0.100	0.100	0.100	0.100
D	0.100	0.100	0.100	0.100	0.100	0.100
E	0.100	0.100	0.100	0.100	0.100	0.100
F	0.100	0.100	0.100	0.100	0.100	0.100
G	0.100	0.100	0.100	0.100	0.100	0.100
H	0.100	0.100	0.100	0.100	0.100	0.100
I	0.100	0.100	0.100	0.100	0.100	0.100
J	0.100	0.100	0.100	0.100	0.100	0.100
K	0.100	0.100	0.100	0.100	0.100	0.100
L	0.100	0.100	0.100	0.100	0.100	0.100
M	0.100	0.100	0.100	0.100	0.100	0.100
N	0.100	0.100	0.100	0.100	0.100	0.100
O	0.100	0.100	0.100	0.100	0.100	0.100
P	0.100	0.100	0.100	0.100	0.100	0.100
Q	0.100	0.100	0.100	0.100	0.100	0.100
R	0.100	0.100	0.100	0.100	0.100	0.100
S	0.100	0.100	0.100	0.100	0.100	0.100
T	0.100	0.100	0.100	0.100	0.100	0.100
U	0.100	0.100	0.100	0.100	0.100	0.100
V	0.100	0.100	0.100	0.100	0.100	0.100
W	0.100	0.100	0.100	0.100	0.100	0.100
X	0.100	0.100	0.100	0.100	0.100	0.100
Y	0.100	0.100	0.100	0.100	0.100	0.100
Z	0.100	0.100	0.100	0.100	0.100	0.100
[	0.100	0.100	0.100	0.100	0.100	0.100
\	0.100	0.100	0.100	0.100	0.100	0.100
]	0.100	0.100	0.100	0.100	0.100	0.100
^	0.100	0.100	0.100	0.100	0.100	0.100
_	0.100	0.100	0.100	0.100	0.100	0.100
`	0.100	0.100	0.100	0.100	0.100	0.100
{	0.100	0.100	0.100	0.100	0.100	0.100
	0.100	0.100	0.100	0.100	0.100	0.100
}	0.100	0.100	0.100	0.100	0.100	0.100
~	0.100	0.100	0.100	0.100	0.100	0.100
	0.100	0.100	0.100	0.100	0.100	0.100

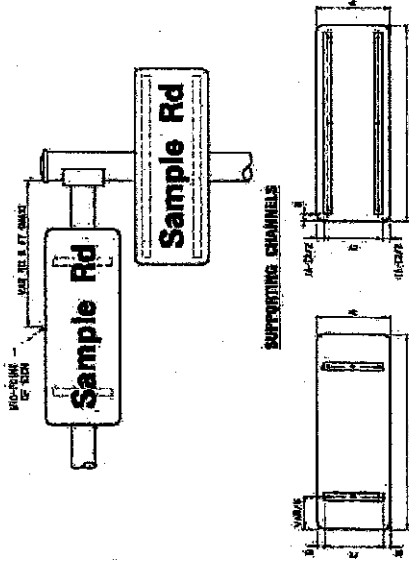
**GENERAL NOTES**

1. THESE MARK SIGN MOUNTED STREET NAME SIGNS ARE DESIGNED TO BE USED IN CONJUNCTION WITH THE MARK SIGN MOUNTED STOP SIGNS. THESE MARK SIGN MOUNTED STOP SIGNS ARE DESIGNED TO BE USED IN CONJUNCTION WITH THE MARK SIGN MOUNTED STREET NAME SIGNS. THESE MARK SIGN MOUNTED STOP SIGNS ARE DESIGNED TO BE USED IN CONJUNCTION WITH THE MARK SIGN MOUNTED STREET NAME SIGNS. THESE MARK SIGN MOUNTED STOP SIGNS ARE DESIGNED TO BE USED IN CONJUNCTION WITH THE MARK SIGN MOUNTED STREET NAME SIGNS.
2. ALL SIGNS SHALL CONSIST OF A WHITE BACKGROUND AND NUMBER TYPE 22 SETTING ON A GREEN BACKGROUND TYPE 22 SETTING.
3. THE SIGN LETTERS SHALL BE IN 8-POINT HEIGHTS. THE SIGN LETTERS SHALL BE IN 8-POINT HEIGHTS. THE SIGN LETTERS SHALL BE IN 8-POINT HEIGHTS. THE SIGN LETTERS SHALL BE IN 8-POINT HEIGHTS. THE SIGN LETTERS SHALL BE IN 8-POINT HEIGHTS.
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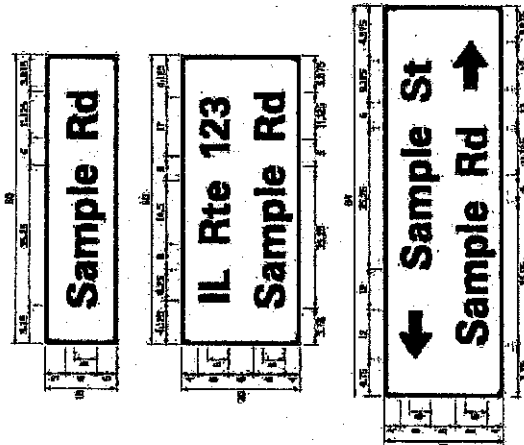
- MANUFACTURERS**
- JACOBI AND LEONARD COMPANY, INC.
  - JACOBI AND LEONARD COMPANY, INC.
  - JACOBI AND LEONARD COMPANY, INC.
  - JACOBI AND LEONARD COMPANY, INC.
  - JACOBI AND LEONARD COMPANY, INC.
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  - JACOBI AND LEONARD COMPANY, INC.
  - JACOBI AND LEONARD COMPANY, INC.
  - JACOBI AND LEONARD COMPANY, INC.
  - JACOBI AND LEONARD COMPANY, INC.

**MARKETING LOCATION**

AND OR FILE NUMBER



**SIDE PANEL - TYPE 1 OR TYPE 2**



STATE	AREA	TYPE	STREET	CITY
IL	CHICAGO	1	STATE ST	CHICAGO
IL	CHICAGO	2	STATE ST	CHICAGO
IL	CHICAGO	3	STATE ST	CHICAGO
IL	CHICAGO	4	STATE ST	CHICAGO
IL	CHICAGO	5	STATE ST	CHICAGO

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

**COMMON STREET NAME ABBREVIATIONS AND NOTICES**

STATE	ABBREVIATION	NOTICE
IL	STATE ST	STATE ST
IL	STATE ST	STATE ST
IL	STATE ST	STATE ST
IL	STATE ST	STATE ST
IL	STATE ST	STATE ST

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO. \_\_\_\_\_

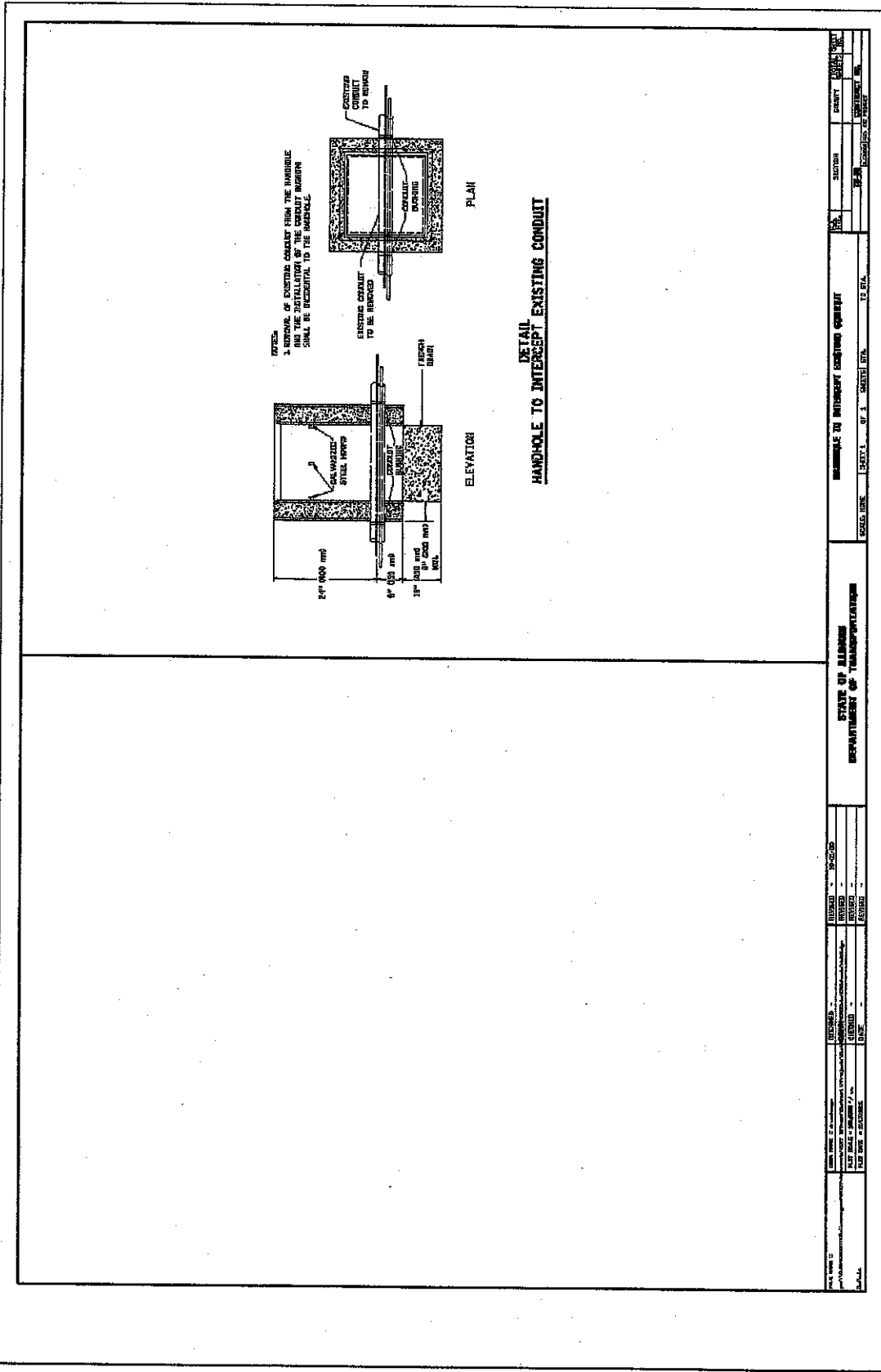
SECTION NO. \_\_\_\_\_

DATE \_\_\_\_\_

DRAWN BY \_\_\_\_\_

CHECKED BY \_\_\_\_\_

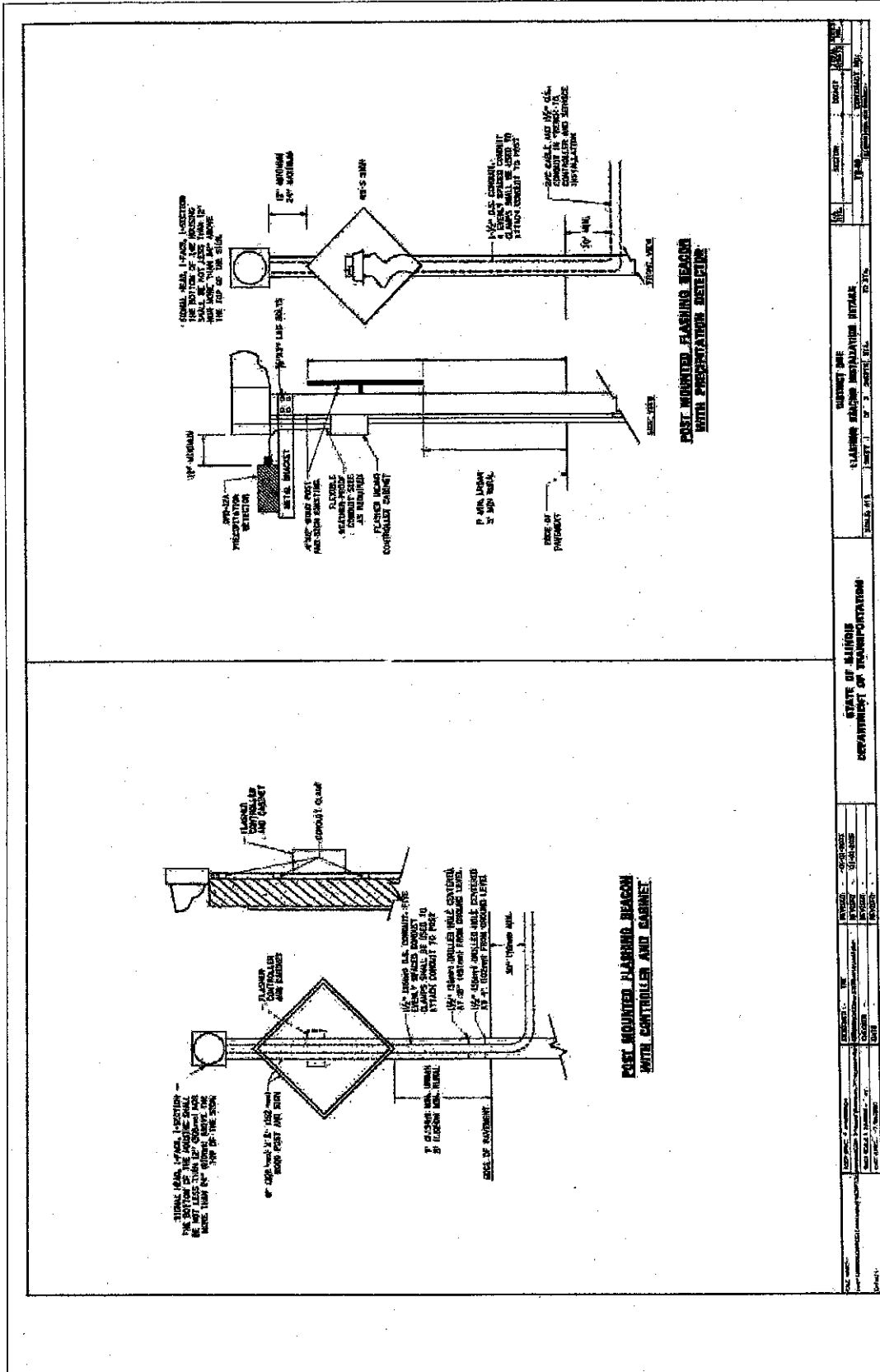
APPROVED BY \_\_\_\_\_



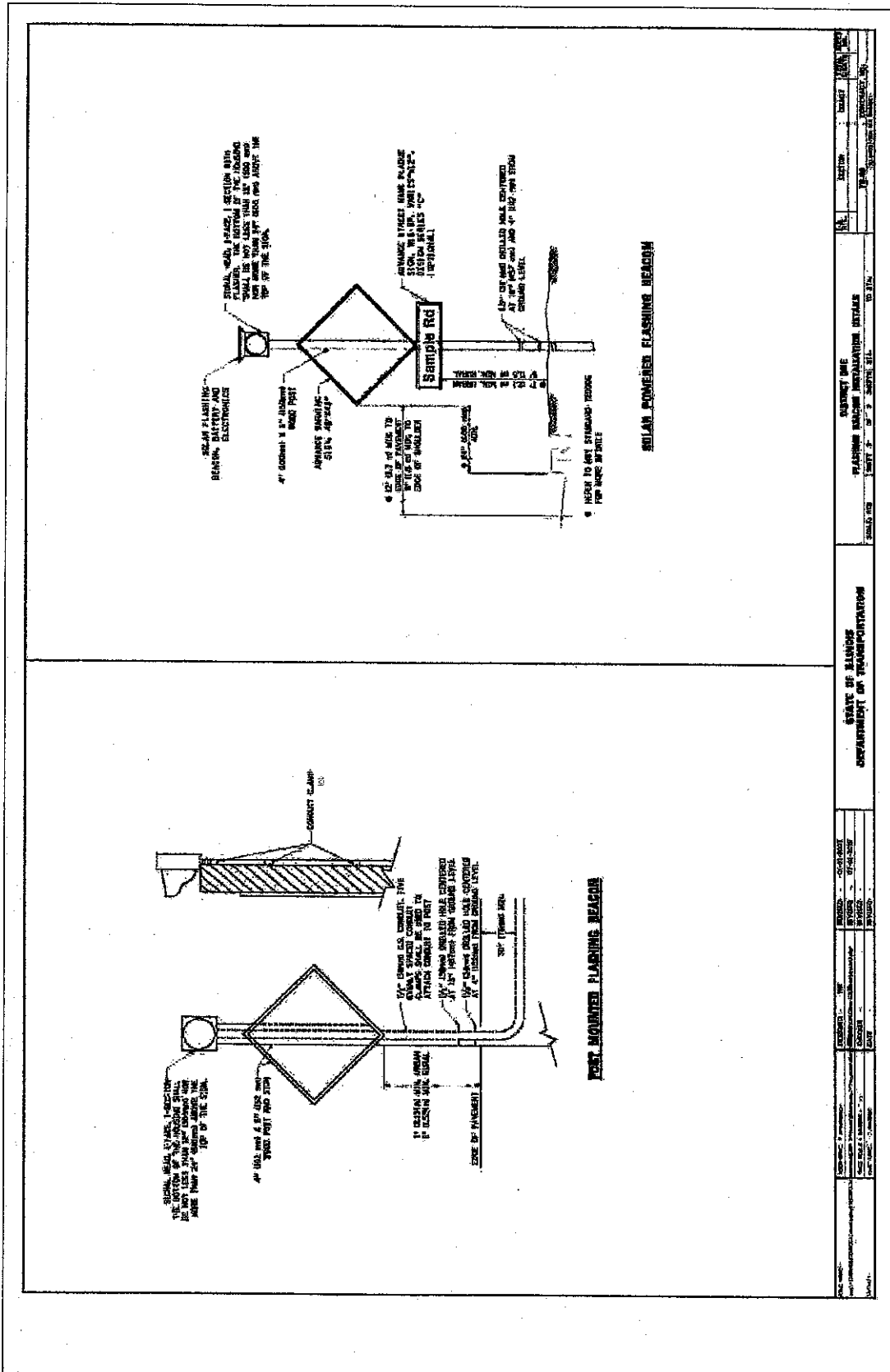
NOTES:  
 1. REMOVAL OF EXISTING CONDUIT FROM THE HANDHOLE AND THE INSTALLATION OF THE CONDUIT INSERTER SHALL BE DEPENDANT ON THE HANDHOLE.

**DETAIL  
 HANDHOLE TO INTERSECT EXISTING CONDUIT**

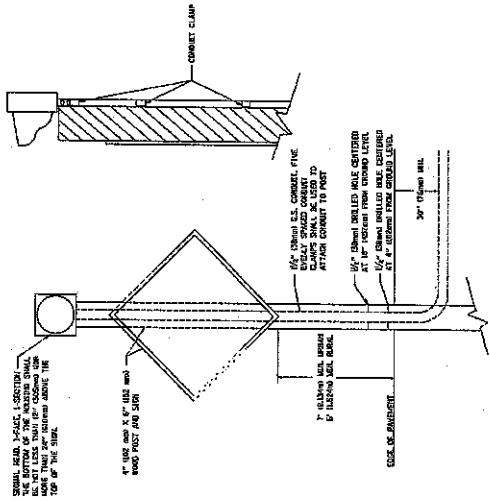
PROJECT NO. 1628-15554 SHEET NO. 1 OF 3 DATE: 10/1/88	STATE OF ALABAMA DEPARTMENT OF TRANSPORTATION	CONTRACT NO. 1628-15554 SHEET NO. 1 OF 3 DATE: 10/1/88	DRAWN BY: [blank] CHECKED BY: [blank] DESIGNED BY: [blank] IN CHARGE: [blank]	TITLE: <b>DETAIL HANDHOLE TO INTERSECT EXISTING CONDUIT</b>	SCALE: [blank]	PROJECT NO. 1628-15554 SHEET NO. 1 OF 3 DATE: 10/1/88
-------------------------------------------------------------	--------------------------------------------------	--------------------------------------------------------------	----------------------------------------------------------------------------------------	-------------------------------------------------------------	----------------	-------------------------------------------------------------



STATE OF ALABAMA DEPARTMENT OF TRANSPORTATION		PROJECT ONE FLASHING BEACON INSTALLATION RETAIN		DATE 11-18-58	SCALE AS SHOWN
NO.	SECTION	DATE	BY	CHECKED BY	APPROVED BY
101	101	11-18-58	J. H. HARRIS	J. H. HARRIS	J. H. HARRIS
SHEET 1 OF 3 SHEETS TOTAL		SHEET NO.		TOTAL SHEETS	
SHEET 1 OF 3 SHEETS TOTAL		SHEET NO.		TOTAL SHEETS	



PROJECT NO. _____ SHEET NO. _____ OF _____ DATE _____		COUNTY ONE PLANNING DIVISION PROJECT NO. _____		COUNTY TWO PLANNING DIVISION PROJECT NO. _____	
STATE OF MISSISSIPPI DEPARTMENT OF TRANSPORTATION		DESIGNER: _____ CHECKED: _____ DRAWN: _____ DATE: _____			



POST MOUNTED FLASHING BEACON

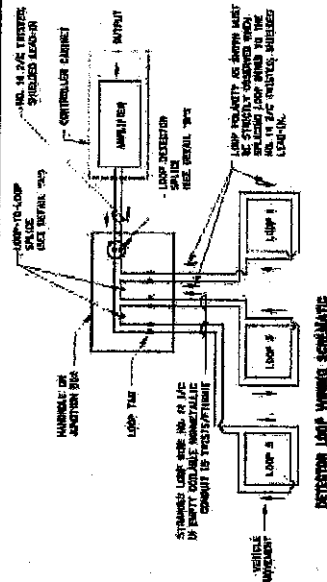
THE STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SCALE: 1/4" = 1'-0"	SHEET NO. 3 OF 3 SHEETS	STA. TO STA.	SECTION	CHART	PROJECT NO.
				POST MOUNTED FLASHING BEACON		
DESIGNED BY	DATE	APPROVED BY	DATE	DESIGNED BY	DATE	APPROVED BY
REVISIONS		REVISIONS		REVISIONS		REVISIONS





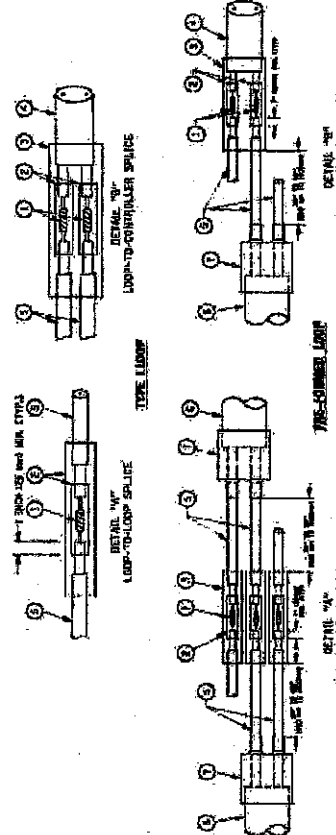
**LOOP DETECTION NOTES**

2. EACH PAIR OF LOOP WIRES SHALL BE PLACED IN A SEPARATE EMPTY COULABLE METALLIC CONDUIT FROM THE CORE OF PARALLEL TO THE MACHOLE, SPACING BETWEEN THE HOLES DRILLED IN THE MACHOLE SHALL NOT BE LESS THAN 1/8" (SEE FIG. 3). EMPTY COULABLE METALLIC CONDUIT SHALL BE INCLUDED IN THE CORE OF THE LOOP WIRE.
2. ALL ADJACENT SIDES OF THE LOOPS SHALL BE INSTALLED IN SUCH A WAY THAT THE CURRENT FLOW IS IN THE SAME DIRECTION TO REINFORCE ITS MAGNETIC FIELDS FOR SMALL VEHICLE DETECTION.
3. EACH LOOP LEGS SHALL BE IDENTIFIED AND PERMANENTLY TAGGED IN THE MACHOLE. IDENTIFY THE LEGS WITH A 1/8" DIA. HARDENED STEEL TAGS. THE TAGS SHALL BE IDENTIFIED BY NUMBER AND LOCATION IN CABINET, AND NUMBER OF TURNS IN THE DETECTOR LOOPS IN WATER PROOF INK AS INDICATED ON THE DIRECT 1 STANDARD TRAFFIC SIGNAL DESIGN DETAIL. THE CONTRACTOR SHALL MARK LOOP LOCATIONS ON RECORD DRAWINGS AND PRESENT TO THE ENGINEER AFTER FINAL INSPECTION. LOOPS SHALL BE MARKED BY LANE AND LOOP NUMBER. SEE DETAIL 201-03.
4. ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE MADE TO THE CURB/SIDE ROWS.
5. IN GENERAL PAVEMENT LOOPS SHOULD BE PLACED IN THE CENTER AND SHOULD BE MARKED AS E.P.A., JUST CENTER. DETECTOR LOOPS SHALL NOT BE INSTALLED IN HOT SPOTS, POLES, OR OTHER OBSTRUCTIONS. DETECTOR LOOPS SHALL NOT BE INSTALLED IN HOT SPOTS AND THE SPACING MUST BE FREE OF DEBRIS AND RESIDUE SUCH AS DIRT AND WATER WHICH IS TO BE ACHIEVED BY THE USE OF COMPRESSED AIR WASHING AND HEAT DRYING ACCORDING TO SELECT MANUFACTURER REQUIREMENTS. THE DETECTOR WIRE SHALL BE HELD IN PLACE BY THE USE OF TURN BUCKLES. BUCKLES SHALL BE SPACED NO MORE THAN 18" FROM EACH OTHER.
6. LOOP SPICES SHALL BE SOLDERED USING A SOLDERING IRON. BLIND SPICES ON OTHER DEVICES WHICH EXPOSE COPPER SHALL NOT BE ALLOWED FOR SOLDERING OPERATIONS. SEE DETAIL 201-01.
7. PREWIRING DETECTOR LOOPS SHALL BE USED AS SHOWN ON THE PLANS, WHERE NEW CONCRETE PAVEMENT IS USED. THE DETECTOR CABLE SHALL BE TO ACCORDANCE WITH THE CURRENT T SPECIFICATIONS AS INDICATED BY THE DRAWINGS.



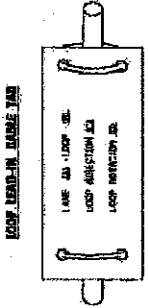
**RESTRICTION LOOP WIRING SCHEMATIC**

1. LOOPS SHALL BE SPACED IN FEET.
2. SPICES SHALL BE 3" MINIMUM WIDTH OF GRIP IS WIRE.
3. SPACING BETWEEN SHALL BE 3" OR MORE. IF IN CONTACT, THE SPACING SHALL BE TO THE TOP OF THE REINFORCEMENT.
4. LOOP CONDUCTORS SHALL BE SPACED WITH A 1/2" DIA. OR SMALLER WIRE.



**LOOP DETECTION SPICE**

1. RESTRICTION LOOP SPICES SOLDERED WITH HEAT SHIELD. ALL SOLDER SURFACES OF THE SPICE SHALL BE SMOOTH. THE DETECTOR LOOP SPICES SHALL BE TYPED.
2. WIRE SHALL BE TIGHTLY TIGHT, WITHOUT LENGTHENING, UNDER TENSION.
3. RESTRICTION WIRE SHALL HAVE APPROXIMATELY 1/16" DIA. AND BE OF APPROXIMATELY 1/8" DIA. OF THE TYPICAL SHEATH DIA.



- A. LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE HIGHWAY.
- B. LOOP 14 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.
- C. LABEL LOOP CABLE TYPE ON LOOP CABLE TAGS.
- D. LABEL LOOP CABLE CHANGES ON LOOP CABLE COMPARTMENTS.

DATE	NO.	BY	CHKD.	APP'D.	REVISION
DESIGNED BY			CHECKED BY		
DRAWN BY			APPROVED BY		
SCALE			DATE		
DIVISION OF TRANSPORTATION STATE OF CALIFORNIA CONTRACT NO. 1628-15554					

**PEDESTRIAN SIGNAL MAST AND SIGNAL POST**  
**PEDESTRIAN SIGNAL MAST AND SIGNAL POST**  
**TRAFFIC SIGNAL MAST AND SIGNAL POST**

NOTE: THE SIGNAL MAST SHOULD BE LOCATED IN THE LINE OF TRAFFIC SIGNAL EQUIPMENT CENTERLINE.

NOTE: THE SIGNAL MAST SHOULD BE LOCATED IN THE LINE OF TRAFFIC SIGNAL EQUIPMENT CENTERLINE.

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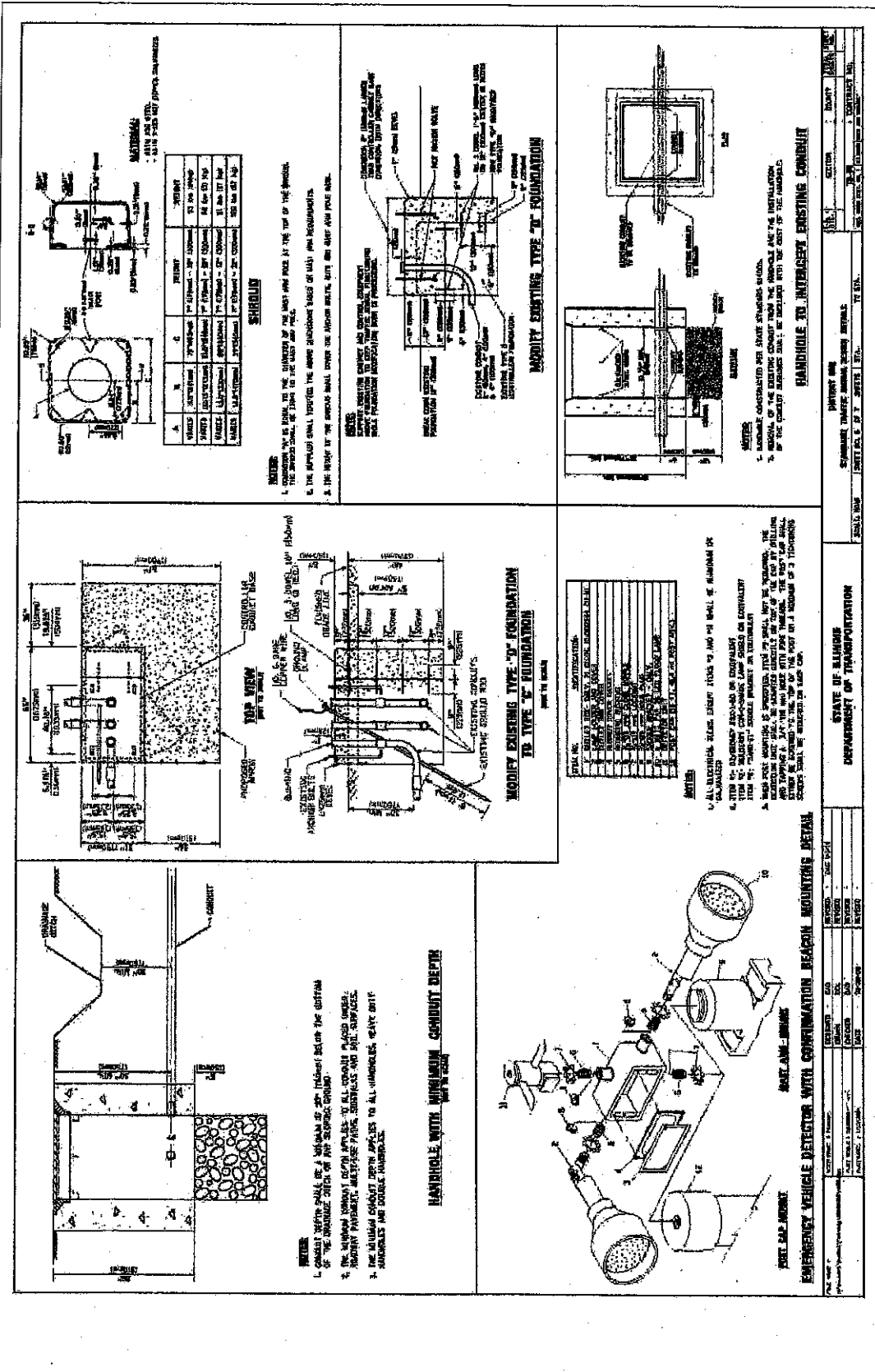
TRAFFIC SIGNAL EQUIPMENT	CONCRETE CURB AND CUTTING MINIMUM DISTANCE FROM FACE OF CURB TO CENTERLINE OF FOUNDATION	MINIMUM DISTANCE FROM FACE OF CURB TO CENTERLINE OF FOUNDATION
TRAFFIC SIGNAL MAST AND SIGNAL POST	8 FT MIN	8 FT MIN
TRAFFIC SIGNAL POST	4 FT MIN	4 FT MIN
TRAFFIC SIGNAL MAST AND SIGNAL POST	8 FT MIN	8 FT MIN
TRAFFIC SIGNAL MAST AND SIGNAL POST	8 FT MIN	8 FT MIN
TRAFFIC SIGNAL MAST AND SIGNAL POST	8 FT MIN	8 FT MIN
TRAFFIC SIGNAL MAST AND SIGNAL POST	8 FT MIN	8 FT MIN

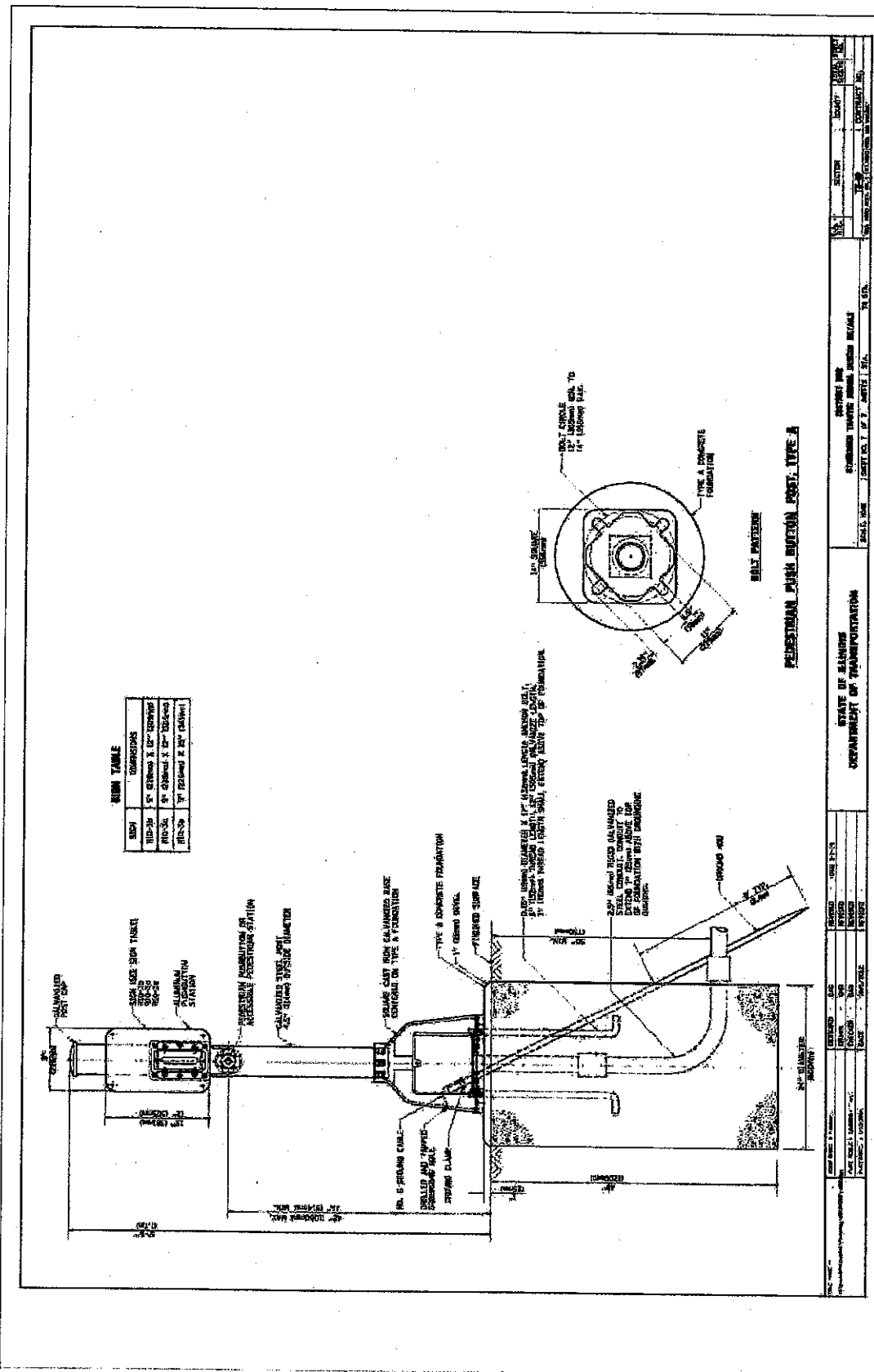
**NOTES:**

- TRAFFIC SIGNAL MAST AND SIGNAL POST SHALL BE LOCATED IN THE LINE OF TRAFFIC SIGNAL EQUIPMENT CENTERLINE.
- TRAFFIC SIGNAL MAST AND SIGNAL POST SHALL BE LOCATED IN THE LINE OF TRAFFIC SIGNAL EQUIPMENT CENTERLINE.
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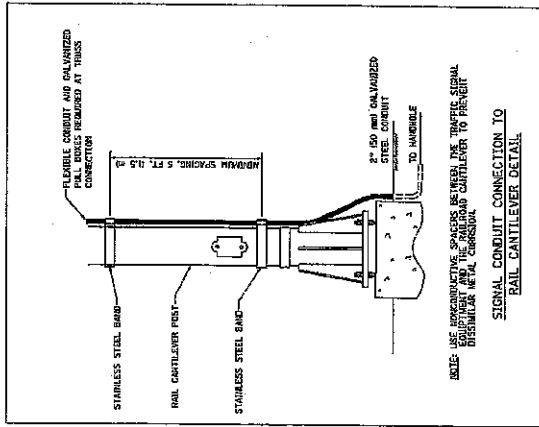
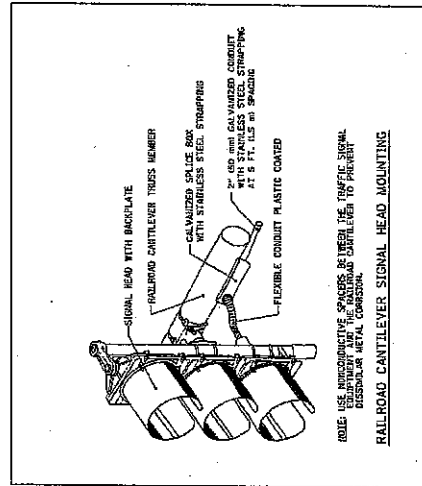
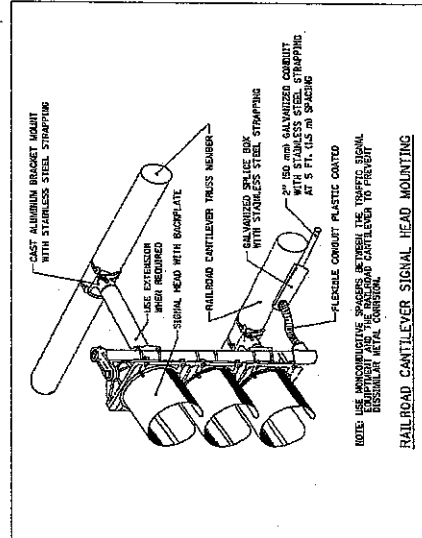
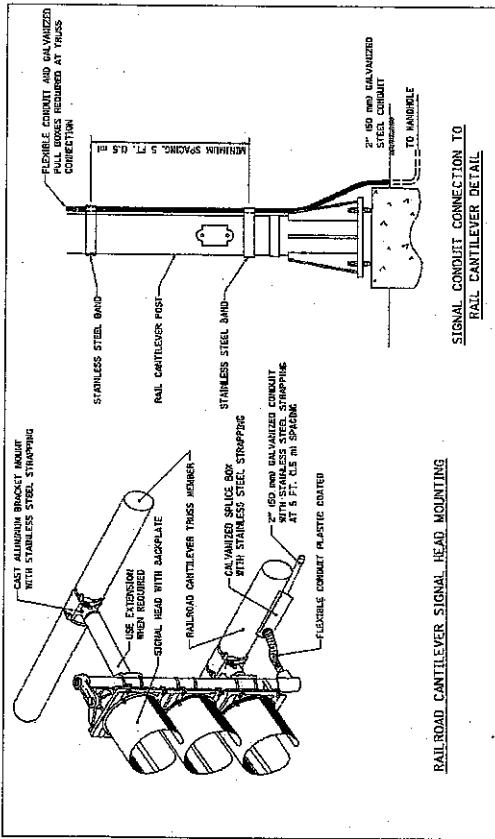




**KEY TABLE**

SYMBOL	DESCRIPTION
110-30	1" diameter x 12" length
110-31	1" diameter x 12" length
110-32	1" diameter x 12" length
110-33	1" diameter x 12" length

DATE	1958-12-15	BY	W. J. HARRIS
DESIGNED BY	W. J. HARRIS	CHECKED BY	W. J. HARRIS
PROJECT NO.	1628-15554	SHEET NO.	1 OF 1
STATE OF ALABAMA DEPARTMENT OF TRANSPORTATION			
PROJECT NAME		CONTRACT NO.	
DRAWING NO.		SHEET NO.	
SCALE		DATE	
BY		CHECKED	
DATE		DATE	



DATE: 11/11/11	SCALE: AS SHOWN	PROJECT NO. 1628-15554	CONTRACT NO. 1628-15554
DESIGNED BY: J. J. WILSON	CHECKED BY: J. J. WILSON	DATE: 11/11/11	SCALE: AS SHOWN
PROJECT: STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PROJECT: STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PROJECT: STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PROJECT: STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
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**NOTES**

- VEHICLES LOOP DETECTORS
- ALL LEAD IN CABLE SHALL BE TWO CONDUCTOR NO. 14 TWISTED, SHIELDED.
- EACH DETECTOR LOOP SHALL HAVE ITS OWN SAW CUT FROM THE LOOP TO THE EDGE OF PAVEMENT OR TO A HANDBOLE IN THE PAVEMENT.
- EACH DETECTOR LOOP SHALL HAVE ITS OWN ONE INCH (25 mm) LIMIT DUCT BETWEEN THE EDGE OF PAVEMENT AND THE FIRST DETECTOR LOOP. THIS DUCT SHALL BE 1/2" (12.5 mm) DIA. AS SHOWN ON THE PLANS BY THE DESIGNER, BUT SHALL NOT BE PAID FOR SEPARATELY. THIS ITEM IS INCIDENTAL TO THE PAY ITEM FOR DETECTOR LOOPS.
- ONE DIMENSION OF ALL DETECTOR LOOPS SHALL BE SIX FEET (1.83 m).
- EACH LANE OF NON-LOCKING, PRESENCE DETECTION AND EACH LANE OF A DOUBLE LEFT TURN LANE REQUIRES A SEPARATE INDUCTIVE LOOP DETECTOR AND LEAD IN CABLE.
- WHEN NON-LOCKING, PRESENCE DETECTION IS USED, MORE THAN ONE LOOP PER LANE IS REQUIRED BEHIND THE STOP BAR (i.e. 1-1/2, 1-3/4, 2).
- WHEN SYSTEM LOOPS ARE REQUIRED ON AN APPROACH OF AN INTERSECTION, THE DETECTOR LOOPS SHALL BE USED AS SYSTEM DETECTORS. EACH ONE OF THESE TYPE OF LOOPS REQUIRES A SEPARATE TWO CONDUCTOR NO. 14 TWISTED, SHIELDED CABLE AND A SEPARATE INDUCTIVE LOOP DETECTOR WHEN NEW TYPES OF LOOPS AS "INTERSECTION AND SIGNALING SYSTEM DETECTORS" ON THE SIGNAL LAYOUT AND SIGNALING SYSTEM AND THE SYSTEM CABLE PLAN, WHEN AN EXISTING CONTROL PLAN IS USED, THE DETECTOR LOOPS SHALL BE USED AS "INDUCTIVE LOOP DETECTOR WITH SYSTEM OUTPUT" SHOULD BE USED.

**PLACEMENT OF DETECTORS**

THE FOLLOWING FIGURES REPRESENT THE MOST COMMON DETECTOR LOOP LOCATIONS AND SIZES. ADJUSTMENTS WILL BE NECESSARY FOR SPECIFIC GEOMETRIC CONSIDERATIONS.

LOCATIONS AND DIMENSIONS OF DETECTOR LOOPS ARE REQUIRED ON ALL SIGNAL LAYOUT PLAN SHEETS.

"FAR OUT" DETECTOR REFERS TO LOCKING, PRESENCE TYPE DETECTION LOCATED IN TURN LANES, RIGHT TURN LANES, AND RIGHT TURN LANE TAPER AREAS (IF APPLICABLE, USUALLY 250' (76.2 m) IN ADVANCE OF STOP BARS. "TIGHT" DETECTOR REFERS TO LOCKING, PRESENCE TYPE DETECTION LOCATED IN ALL LANES AND 100'-300' (30.5-91.4 m) BEHIND THE CROSSING STREET'S EDGE OF PAVEMENT EXTENDED.

**NOTE:**  
ALL DETAILS AND NOTES SHOWN ARE FROM THE I.D.O.T. DISTRICT 1 TRAFFIC SIGNAL DESIGN GUIDELINES DATED JANUARY 1995

THIS DRAWING HAS BEEN PREPARED TO ASSIST THE RESIDENT ENGINEER FOR ALL ROADWAY RESURFACING OR S.A.A.R.T. PROJECTS WHERE THE DIMENSIONS ARE NOT SHOWN ON THE PLANS AND THE FINAL LOCATIONS FOR CROSSINGS OR STOP BARS ARE NOT DETERMINED.

**LEFT TURN LANES WITH MEDIANS**  
VOLUME DENSITY ("FAR OUT" DETECTION)  
(PROTECTED / PERMITTED LEFT TURN PHASING)

NOTE: ONE LEFT TURN PER PHASING LOOP REQUIREMENT

**LEFT TURN LANES WITHOUT MEDIANS**  
VOLUME DENSITY ("FAR OUT" DETECTION)  
(PROTECTED / PERMITTED LEFT TURN PHASING)

NOTE: ONE LEFT TURN PER PHASING LOOP REQUIREMENT

**ARTERIAL-VOLUME DENSITY ("FAR OUT" DETECTION)  
CROSS STREET-VOLUME DENSITY ("TIGHT" DETECTION)**

**ARTERIAL-VOLUME DENSITY ("FAR OUT" DETECTION)  
CROSS STREET-VOLUME DENSITY ("TIGHT" DETECTION)**

**ARTERIAL-VOLUME DENSITY ("FAR OUT" DETECTION)  
CROSS STREET-VOLUME DENSITY ("TIGHT" DETECTION)**

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**ARTERIAL-VOLUME DENSITY ("FAR OUT" DETECTION)  
CROSS STREET-VOLUME DENSITY ("TIGHT" DETECTION)**

**ARTERIAL-VOLUME DENSITY ("FAR OUT" DETECTION)  
CROSS STREET-VOLUME DENSITY ("TIGHT" DETECTION)**

FILE NAME	PROJECT NO.	SHEET NO.	SHEET TOTAL	CONTRACT NO.
<b>STATE OF ILLINOIS</b>				
<b>DEPARTMENT OF TRANSPORTATION</b>				
DETAIL 1 - DETECTOR LOOP INSTALLATION				
SHEET NO. 1 OF 1 SHEETS (1 OF 1)				

**EMERGENCY VEHICLE RECEIPTS**

STATE OF ALABAMA  
DEPARTMENT OF TRANSPORTATION

DATE	TIME	LOCATION	TYPE OF VEHICLE	DRIVER	OFFICER	REASON FOR STOP	ISSUED TO	ISSUED BY	REMARKS	DATE	TIME	LOCATION	TYPE OF VEHICLE	DRIVER	OFFICER	REASON FOR STOP	ISSUED TO	ISSUED BY	REMARKS	
12/15/54	10:30 AM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	10:30 AM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	11:00 AM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	11:00 AM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	11:30 AM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	11:30 AM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	12:00 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	12:00 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	12:30 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	12:30 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	1:00 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	1:00 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	1:30 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	1:30 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	2:00 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	2:00 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	2:30 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	2:30 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	3:00 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	3:00 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	3:30 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	3:30 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	4:00 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	4:00 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	4:30 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	4:30 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	5:00 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	5:00 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	5:30 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	5:30 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	6:00 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	6:00 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	6:30 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	6:30 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	7:00 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	7:00 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	7:30 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	7:30 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	8:00 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	8:00 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	8:30 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	8:30 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	9:00 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	9:00 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	9:30 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	9:30 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	10:00 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	10:00 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	10:30 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	10:30 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	11:00 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	11:00 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	11:30 PM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	11:30 PM	MOBILE	POLICE	...	...	...	...	...	...	...
12/15/54	12:00 AM	MOBILE	POLICE	...	...	...	...	...	...	12/15/54	12:00 AM	MOBILE	POLICE	...	...	...	...	...	...	...

Emergency Vehicle Receipts are issued to the driver of the vehicle at the time of the stop. The receipt is valid for a period of 30 days from the date of issuance. Receipts are not valid if the driver is not the driver of the vehicle at the time of the stop.

STATE OF ALABAMA  
DEPARTMENT OF TRANSPORTATION

EMERGENCY VEHICLE RECEIPTS  
SOURCE OF INFORMATION - ROAD OFFICER AND DRIVER

DATE: 12/15/54  
TIME: 10:30 AM  
LOCATION: MOBILE

DRIVER: ...  
OFFICER: ...

REASON FOR STOP: ...

ISSUED TO: ...  
ISSUED BY: ...

REMARKS: ...

STATE OF ALABAMA  
DEPARTMENT OF TRANSPORTATION



**ITEM B STREET AND ROADWAY LIGHTING SYSTEM ROUTINE MAINTENANCE**

In addition to the requirements listed above under ROUTINE MAINTENANCE, the following shall be part of this item:

1. Report in writing to the Engineer, lamp and circuit outages and damaged, broken or defective components within two working days after each two week inspection.
2. Repair or replace any part or parts of the system damaged from any cause whatsoever, except as provided for under Item BU.
3. Clean all types of luminaries ONCE EVERY TWELVE (12) MONTHS in accordance with MAINTENANCE SCHEDULES.
4. Maintain in Contractor's stock at all times sufficient assorted new Light Standards, Transformer Bases, Couplings, Mast Arms, Luminaires, Lamps, Breakers, Fuses, Switches, Timers, Relays, Splicing, Materials, Cable, Cable-In-Duct, Conduits and Fittings, and other parts in order that all malfunctions from any cause whatsoever, can be temporarily or permanently corrected, and all defective or damaged components, except Light Standard Foundations, can be replaced.
5. Replace all burned out lamps, faulty ballasts and broken glassware not later than seven (7) working days following discovery or notification. Determine the cause of the malfunction unless it was caused by a burned out lamp, without energizing the light from the normal source
6. Provide immediate corrective action to restore service involving an outage of (1) 3 or more lights on a circuit, (2) 3 or more successive lights in a row, (3) 3 or more successive lights on a roadway, or (4) lights at critical locations. Response time is 1 Hour for all calls and service restoration time is 4 hours, except for cable problems which is 24 hours. Permanent repairs to be in 7 calendar days except for cable repairs which have 21 calendar days. Only for notifications of cable failure after December 1, when frozen ground conditions restrict permanent repair work, will temporary repairs will be acceptable. In all cases where temporary repairs were made during the winter months, permanent repairs shall be completed by May 30. The Contractor shall document on Tickets all cases where temporary aerial cable was installed (temporary ground laid cable or attachment to the metal structures is not allowed).
7. After responding to a trouble call, the patrolman must record the purpose of call and action taken for temporary service restoration. The purpose of recording into the log sheet is to reduce repetitive calls caused by the same component. If there is a more than one service call due to the same component within a month, the Contractor shall replace that component with new one instead of making temporary repairs.
8. Standard (non-davit) round-tapered, unpainted conventional aluminum light poles of different manufacture than the originally installed pole may be used, but shall otherwise be in conformance with approved submittal requirements. Standard light pole mast arms shall be replaced with the same length, diameter, and shape as the original installation or as modified by plan. All resets of light poles from knockdowns or new installs shall use a transformer base (T-base) not a breakaway coupling. The replacement pole shall meet UL standard.

9. Light Pole Foundation: It is the Contractor's responsibility to be knowledgeable of safety requirements for light pole foundation construction and current approved height limitations for base extensions above the adjacent grade. Minor repairs to concrete foundations shall be completed within seven (7) calendar days from the date of discovery and issuance of a ticket, or within twenty-one (21) days if the rebuilding or complete replacement of a concrete foundation is required.
10. Uniduct Exposure: Uniduct must be visible inside the pole. Below the foundation grade or flush is not acceptable. Where uniduct is below grade or flush, a split 12" uniduct extension shall be installed in place (excluding existing direct buried cable).
11. When ground conditions restrict the making of permanent repairs, the repairs shall be performed in accordance with a MAINTENANCE SCHEDULE.
12. The Contractor shall maintain in "like new" condition identification decals, of a size and type as specified by the Engineer. The Contractor shall supply and install decals found to be missing, worn, or damaged from any cause whatsoever. Light pole replacements due to Motorist Caused Highway Damage shall have decals replaced under routine maintenance.
13. Repair or replace damaged luminaires when the damage is confined to the luminaire or parts thereof and other parts of the light standard have not been damaged to the extent of requiring replacement.
14. Certain requirements apply when lighting units are replaced or repaired in place under routine maintenance. Unless otherwise authorized by the Engineer, luminaire ballasts shall match the system voltage and be of the same type characteristic as the original design and installation being replaced. In addition, except as otherwise indicated or authorized by the Engineer, the luminaries installed as replacements at an installation location, installed within six (6) years of the current year, shall be of the same manufacturer, and have the same photometric performance specification as the originally installed luminaire. When a replacement luminaire is installed, it shall be equipped with a new lamp. The Contractor shall submit proposed variant replacements to the Engineer for approval.
15. Any ineffective, missing or damaged luminaries or parts thereof shall be repaired or replaced with the same kind or better.
16. Repair or replace all cable or integral cable-in-duct combination damaged from any cause whatsoever, as follows:
  - a. Where such damaged cable is in duct, steel or plastic conduit, the faulty wiring shall be removed and replaced with an approved new cable and the duct or conduit shall be repaired.
  - b. Where damaged cable is buried in earth, the faulty section shall be removed and replaced plus a minimum of three (3) feet on each side of the undamaged adjacent cables. If the fault is six (6) feet or less from a pole, splicing handhole, or a control cabinet, the six (6) foot section shall be removed and replaced. The Engineer shall approve the cable to be used and the type of splices.
  - c. Permanent repairs shall follow as soon as possible and shall be completed within 21 calendar days. Only for notifications of cable failure after December 1, when frozen ground conditions

restrict permanent repair work, will the temporary repairs be acceptable for a longer period of time. When temporary cable is installed, all splices shall be as good as splices for permanent repairs.

- d. If an aerial cable is used for temporary response, it shall be installed so that its lowest point is at least twenty-five (25) feet above ground level.
17. Inspection of roadway lighting outages must be done at night and system shall not be energized during daytime hours. The Engineer may authorize the turn on of lights in special cases.
  18. The Contractor shall conduct Control Cabinet Clock Inspection at every lighting system location, including facility lighting locations, twice per year. All lighting system locations must be inspected in May. The second control cabinet clock inspections must be performed in November. Repairs must be completed in the same month as the inspection. At this inspection the Contractor shall clean the cabinet, install decals or replace as necessary, and check the following:
    - Time clock, including escapement (reserve power) and back up battery
    - Background timer
    - Springs (reset as required)
    - Lighting contactors and surge suppressor
    - Tighten all the contacts with proper torque
    - Clean inside with vacuum cleaner
    - Tickets shall be created for any problems found.
  19. All damaged or defective equipment in a lighting cabinet shall be replaced with new (not rebuilt) equipment unless authorized by the Engineer.
  20. The contractor shall carry a digital camera to record the control cabinet pictures, one to show inside of the cabinet and other to view outside of cabinet, for each location. All the pictures shall be transferred into a file on disc to submit to the County after May inspection.
  21. The Contractor shall replace the back-up battery for clocks (chargeable or regular) at all lighting locations once per year in May. This service may be performed at the same time as the clock inspection above. The Contractor is also required to put a sticker on the clock indicating the date for new battery.
  22. The Contractor shall conduct a safety inspection of all lighting locations once per year. The purpose of this inspection is to insure that all lighting unit components are maintained in a safe and effective operating condition as originally designed or as subsequently modified by the Department. All lighting system locations must be inspected in February. Repairs must be completed in the same month as the inspection. Ticket numbers shall be submitted to the Engineer in the monthly routine work documentation.

Required repair work includes replacement of damaged mast arms, luminaires, shields, leaning poles, underpass fixtures, junction boxes, conduit, conduit hangers, or missing appurtenances such as decals, decal mounting brackets, shrouds, skirts, leaves, and handhole doors. All equipment and materials required for repairs and replacements shall be furnished as part of Routine Maintenance.

The Contractor shall use the same mast arm of the type, color, length, direction and rise, replaced after a knockdown by a motorist, or fall down due to high wind or age. The davit arm shall be horizontal to the X-axis and 90 degrees to the shaft plus/minus a tolerance allowed by the manufacturer.

23. The Contractor shall identify:

- Existing light pole bases which are too high and do not conform to the current approved height limitations for base extensions above the adjacent grade.
- Loose and/or worn nuts and washers by lifting the shroud or removing the skirt.
- Any other abnormality (cracks, loose nuts and joints) due to the wind load condition.
- Leaning (more than 10 degrees) poles
- Pole that is susceptible to hit by motorist.
- Mast arms fastened with riv-nuts.
- Lighting locations with temporary aerial cable.
- Underpass fixtures damaged and/or missing components
- Underpass Lighting Conduit, JB, light fixtures and Decals deteriorated or torn

The Contractor may be entitled to material repair re-imbusement per Contractor Advisory Inspections.

24. The Contractor shall list inspections and repair work on the Daily Agenda. No allowances will be made for delays due to poor weather or personnel shortages. If work is not completed on time routine maintenance withholding of up to \$5,000 per location and/or Liquidated damages shall be assessed until all work is completed.
25. The Contractor shall conduct any safety inspection of light poles or underpass fixtures when recommended by the manufacturer, upon request by the Engineer, which is in addition to the regular inspection as specified herein.
26. An inventory, noting quantity, sizes, types and manufacturer of the lighting units and control cabinet components shall be submitted to the Engineer. In addition the Contractor shall submit verification that all lighting units are operating and that each unit is properly labeled and wired to the circuit as labeled in accordance with the record drawings.
27. A Ticket shall be created for all displaced defective, damaged or missing items as found. Completed monthly submittals shall be made to the Engineer by the last working day of the month.

#### **Item BU REPLACE LIGHTING EQUIPMENT**

Under this item, as listed in the Schedule of Prices, lighting equipment damaged by traffic shall be repaired by the Contractor. The labor under this item shall be paid for either as listed in the Schedule of Prices or as Regular work under Article II Item 10 of this Contract when authorized by the Engineer.

Bid prices shall reflect the inclusion of the finishing, delivering, installing, removal, disposal of damaged parts, the removal of debris, the furnishing of miscellaneous material and/or the labor necessary to make a complete installation.

Bid prices shall reflect the inclusion of any labor or material not specifically provided for in the bid prices but necessary to make a complete replacement installation.

Damage by traffic to items not specifically provided for in the bid prices shall be repaired or replaced as part of routine maintenance.

Since repair or replacement of luminaires is part of routine maintenance as provided in Item B above, the bid price in the Schedule of Prices for Items of BU 4 alone are only for the purpose of clarifying the bid prices of Items BU-5.

Where existing poles are damaged or defective, they shall be replaced with aluminum poles or equal frangible poles as approved by the Engineer in accordance with Specifications relating to Light Pole Knockdowns as described below. If adapter plates or other appurtenances are necessary, these items shall be at the expense of the Contractor.

At high knockdown incident areas as determined by the Engineer, light pole knockdowns shall be relocated as directed by the Engineer. The Contractor shall furnish and install replacement parts for all of the damaged items. The Contractor shall also furnish and install the following items which may not have been part of the original installation: fuse holder, foundation reinforcing, foundation, adapter plates, #10 wires, and hardware necessary to replace or relocate the pole knockdowns. The materials and workmanship shall be as specified herein.

A. LIGHTING UNIT:

The pole mounting height, mast arm length, lamp, luminaire type and wattage shall be equal to the original specifications, unless otherwise directed by the Engineer.

The lighting unit mounted on an existing bridge structure shall be as herein described except the handhole shall be on the street side of the pole. The mounting height shall be as indicated by the Engineer. Any mounting brackets, plates, or bolts shall be included.

The lighting units shall be furnished with aluminum poles and mast arms as described under ALUMINUM POLE AND MAST ARM. The Foundation shall be as described under POLE FOUNDATION.

The luminaires and lamps shall be identical to existing installations, i.e. mercury vapor, metal halide, high pressure sodium vapor, etc. For the 400 watt luminaires, the light distribution shall be type III, medium, and semi-cutoff. The fuse shall be 6 ampere or rated for the existing load. For other wattage luminaires, the Contractor shall submit photometric data for the luminaire selected, using a clear lamp, showing each type II, III, and IV pattern available and the Engineer will select the most advantageous light distribution. The fuse shall be of amperage designated by the Engineer. The luminaires and lamps shall be as described under LUMINAIRES.



All materials, work and tests necessary to replace or relocate a pole knockdown, including luminaries, cable-in-duct, grounding, splices, trench and backfill, and restoration of damages to the original condition, shall be as described in Specifications below and as approved by the Engineer.

The wire from the pole handhole to the luminaire shall be no. 10 AWG as described under Electric Cable 600 Volt. The fuse shall be 13/32 inch diameter, 1 1/2 inch long, 600 volt, current limiting, high interrupting capacity, ceramic tube fuse.

Construction Methods: The foundations shall be allowed to cure for 14 days before the light standards are erected. The depth of the foundation shall be adequate for the soil conditions. The light standards shall be set plumb on the foundations without the use of shims, grout, or other leveling devices. The mast arm shall be set at right angles to the centerline of the pavement. The leveling area of the luminaire shall be set in a plane parallel to the roadway taking into consideration the up grade or down grade and the superelevation of the roadway. Each luminaire shall be individually leveled after erection, and this leveling shall be witnessed by the Engineer. The no. 10 wire shall be continuous from the luminaire to the pole handhole.

**B. ALUMINUM POLE AND MAST ARM:**

The aluminum pole with mast arm consists of a pole, mast arm, pole base, bolt covers, pole cap, handhole with cover, and such nuts, bolts, washers, and incidentals necessary to complete the assembly.

Sections 830 and 838 of the Standard Specifications for Road and Bridge Construction, current version, shall be applied.

Materials shall be in accordance with Section 1069 of the Standard Specifications with the following exception:

Revise the third sentence of the first paragraph of Article 1069.02 of the Standard Specifications to read: Aluminum tubing shall be according to ASTM B 210M (B 210), Alloys 3003 or 6061.

All breakaway devices shall be Transformer Base.

The light pole style, mounting height and its diameter shall be as specified on the plan submitted by the Engineer and they are included in this item.

**C. LUMINAIRES:**

Add the following to Article 1067.01 (c) of the Standard Specifications:

The reflector, the refractor or lens, and the entire optical assembly shall not develop any discoloration over the normal life span of the luminaire. An extended warranty over and above the normal warranty shall be furnished by the manufacturer pertaining to the above said discoloration. The extended warranty shall be furnished in writing guaranteeing replacement, including cost of labor and shipment, free of charge to this Contract and to the County, of any optical assembly, or any component parts thereof, which, as determined by the Engineer, would develop the aforesaid discoloration. The extended warranty shall accompany submittal information.

Add the following to Article 1067.01(e) (1) of the Standard Specifications:

The ballast shall be a high power factor, low loss, auto regulator type ballast.

Delete Article 1067.01(e) (1) High Pressure Sodium Reactor ballast of the Standard Specifications.

Revise Article 1067.01(e) (1) of the Standard Specifications to read:

High Pressure Sodium Regulator: That ballast shall be a high power factor, constant wattage auto-regulator, lead type (CWA). The ballast shall be designed to furnish proper electrical characteristics for starting and operating a high pressure sodium vapor lamp of the specified rating at ambient temperatures of -29 degrees to +40 degrees C. The ballast windings shall be adequately impregnated and treated for protection against the entrance of moisture, insulated with Class H insulation, and able to withstand the NEMA standard dielectric test. The ballast shall include an electronic starting assembly.

The starting assembly shall be comprised of solid state devices capable of withstanding ambient temperatures of 85 degrees C. The starter shall provide timed pulsing with sufficient follow-through current to completely ionize and start all lamps. Minimum amplitude of the pulse shall be 2,500 volts, with a width of one (1) microsecond at 2,250 volts, and shall be applied within 20 electrical degrees of the peak of the open circuit voltage wave with a repetition rate as required by the lamp in accordance with ANSI for the 60 cycle wave. The lamp peak pulse current shall be a minimum of 0.2 amperes. Proper ignition shall be provided over a range of input voltage from 216 to 264 volts. The starter component shall be field replaceable and completely interchangeable with no adjustment necessary for proper operation. The starter component shall have push-on type electrical terminations to provide good electrical and mechanical integrity and ease of replacement. Terminal configuration shall preclude improper insertion of plug-in components. The starter circuit board shall be treated in an approved manner to provide a water and contaminant resistant coating.

The ballast shall have an overall power factor of at least 0.9 when operated under rated lamp load. The ballast shall withstand a 2,500 volt dielectric test between the core and windings without damage to the insulation. The ballast shall not subject the lamp to a crest factor exceeding 1.8 and shall operate the lamp without affecting adversely the lamp life and performance. The ballast shall be designed to ANSI Standards and shall be designed and rated for operation on a nominal 240 volt System. The ballast shall provide positive lamp ignition at the input voltage of 216 volts. It shall operate the lamp over a range of input voltages from 216 to 264 volts without damage to the ballast. It shall provide lamp operation within ANSI lamp specifications for rated lamp life at input design voltage range. All measurements shall be taken using a seasoned reference lamp conforming to

ANSI test procedures. The reference lamp wattage shall not vary more than +/-2% from the nominal wattage rating of the reference lamp.

Operating characteristics shall produce output regulation not exceeding the following values:

Nominal Ballast Wattage	Maximum Ballast Regulation
750	25%
400	25%
310	26%
250	22%
150	22%

For this measure, regulation shall be defined as the following:

$$\text{Percentage Ballast Regulation} = \frac{W_{\text{lamp}H} - W_{\text{lamp}L}}{W_{\text{lamp}N}} \times 100$$

$W_{\text{lamp}N}$

where:  $W_{\text{lamp}H}$  = lamp watts at +10% line voltage (264v)

$W_{\text{lamp}L}$  = lamp watts at - 10% line voltage (216v)

$W_{\text{lamp}N}$  = lamp watts at line voltage (240v)

**Ballast losses, based on cold bench tests, shall not exceed the following values:**

Nominal Ballast Wattage	Maximum Ballast Losses
750	16.0%
400	16.0%
310	19.0%
250	17.5%
150	26.0%

**Ballast losses shall be calculated based on input watts and lamp watts at nominal system voltage as indicated in the following equation:**

$$\text{Percentage Ballast Losses} = \frac{W_{\text{line}} - W_{\text{lamp}}}{W_{\text{lamp}}} \times 100$$

$W_{\text{lamp}}$

where:  $W_{\text{line}}$  = line watts at 240v

$W_{\text{lamp}}$  = lamp watts at 240v

approved by the Engineer. There shall be a provision for thermal breathing. A charcoal filter may be used, subject to approval by the Engineer.

A decal complying with the ANSI standard shall be factory attached permanently to the luminaire. The information contained in the decal shall enable a viewer, from the ground level, to identify the lamp wattage and type of luminaire distribution.

**Roof mount luminaires shall be mounted on the roof as indicated by the configuration on the plans, or as directed by the Engineer. All mounting hardware shall be corrosion resistant and shall be stainless steel unless otherwise indicated.**

**C.5 LUMINAIRE, FLUORESCENT, BUILDING CEILING MOUNTED:**

The housing shall be one piece and refractor made out of durable polycarbonate to reduce vandalism. The luminaire shall be designed and constructed in accordance with the requirements of UL. The mounting accessories, hardware and brackets shall be made out of steel for environmental conditions.

The cover-reflector and socket-reflector junctions shall be sealed against the entry of moisture dirt and insects with a thick, high density Dacron felt gasket, securely attached by mechanical means, such as a retaining lip, or by a wide-temperature permanent adhesive in a manner acceptable to the Engineer.

A decal complying with the ANSI standard shall be factory attached permanently to the luminaire. The information contained in the decal shall enable a viewer, from the ground level, to identify the lamp wattage and type of luminaire distribution.

**D. POLE FOUNDATION:**

This work shall consist of the construction of a reinforced concrete foundation with dimensions required by the type of soil as shown on the drawings.

**DESCRIPTION:** This item shall consist of the construction of a steel reinforced concrete light pole foundation complete with raceways, as specified herein. The foundation depth shall be as indicated in the Foundation Depth Table on the plans (where applicable) or as directed by the Engineer.

The foundation shall include excavation, reinforcement, concrete, anchor bolts, nuts, washers and raceways as well as clean-up and restoration of the location when such work is not provided under other paid items.

The Engineer shall identify the soil and determine the depth for the foundation.

Sections 836, 1070 and 1020, and also Articles 1006.10, 1088.01, of the Standard Specifications for Road and Bridge Construction, Current version, shall apply to this pay item with the following:

Anchor bolts for light poles are heat treated. Therefore, an exothermic ground wire connection shall not be made to the anchor bolt. A mechanical connection of the ground wire should be made to the

anchor bolt. However, the cable connection to the ground rod and the rebar cage should be exothermic.

Add the following to Article 836.03 (b) of the Standard Specifications:

An alternate steel screw type foundation may be used at the discretion of the Engineer.

**E. GROUND FIELD:**

This item shall consist of furnishing materials and labor for the installation of a ground field, which shall consist of 3 (three) ground rod access wells in a 10 ft. triangle connected via bare copper wire as specified herein, at locations indicated by the Engineer.

Articles 806, 825.04, and 1087.01 of the Standard Specifications shall apply to this pay item.

Each of the 3 (three) ground rod access wells shall consist of a 5/8 in. X 10' copper clad ground rod in a 12 in. minimum diameter PVC enclosure with cast metal removable flush covers.

The 3 (three) ground rod access wells shall be installed in a typical 10 foot triangle connected via 2/0 bare copper wire by exothermic welds. No ground well shall be placed in the concrete pad in front of the lighting controller.

The removable flush cover shall be attached to the PVC enclosure via stainless steel hexhead screws.

The ground rods shall be buried 12 in. below grade and the access well shall be filled with crushed stone to point 36 in. below grade.

The 2/0 bare copper wire leaving the ground rod access well closest to the lighting controller cabinet, shall be exothermically welded and enter the lighting controller cabinet foundation via a 1 in. diameter rigid steel conduit.

**Item BW-1 PAINT HIGH MAST LIGHT POLE INCLUDING BLAST CLEANING**

Under this item, at the contract unit price **EACH** to PAINT HIGH MAST LIGHT POLE INCLUDING BLAST CLEANING as shown in the Schedule of Prices and when directed by the Engineer, the Contractor shall paint an existing high mast light pole which requires blast cleaning before painting. All operations are to be conducted in such a manner as to prevent any spills and materials to fall on pedestrians and vehicles. Painting of the high mast pole shall include all parts of the pole previously painted such as the pole, luminaire ring, mast arm(s), hardware, and base plate.

The surface shall be prepared using a SSPC (Steel Structures Painting Council)-SP-6 Commercial Blast Cleaning and/or Power Tool Cleaned to SSPC SP-3, depending on condition, to remove the paint and loose primer. The surface shall then be sand blasted followed immediately by a primer coat of Keeler & Long, Inc. No. 6500 Galvanode Primer or equivalents approved in writing by the Engineer 4.0 to 6.0 mils thick. The finish coat shall not be applied prior to a minimum time of 48 hours of drying time for the prime

coat. Painting shall not be done during rain or inclement weather with the temperature between 50 and 100 degrees F and the relative humidity of 85% or less or the temperature at least 5 degrees F above the dew point.

The finish paint shall be silicone-alkyd resin type paint Keeler and Long P-series polysilicone enamel, or approved equal. The finish paint shall be applied in one coat to a 2 to 3 mil dry film thickness following the manufacturer's method of application. The finish paint shall be applied to outside surfaces only. Paint finish shall match existing paint.

**Item BW-2 DESIGN AND IMPLEMENT A DECAL BASED NUMBERING SYSTEM FOR ALL HIGHWAY LIGHTING SYSTEMS**

This item shall consist of designing, furnishing and installing, a lighting unit identification decal based numbering system for all pole, underpass, building mounted, and light tower poles and luminaires for all CCDOTH Systems being maintained under this contract. This work shall also include the removal of all existing decals as necessary to complete the installation in a neat and aesthetically pleasing manner.

Materials: Article 1069.06 of the Standard Specifications shall apply to this pay item. The adhesive to be used shall be recommended by the manufacturer of the decals and shall not be injurious to the surfaces.

Installation: Prior to furnishing and installing the numbering system the Contractor shall submit the preliminary design to the Engineer for approval.

Underpass identification brackets shall not be attached and/or drilled into precast, prestressed concrete beams. Brackets shall be furnished where needed to identify lights in the maintenance yards and at any other location deemed necessary by the Engineer.

Prior to installation the surface where the decals are to be placed shall be cleaned to the satisfaction of the Engineer. The corners of the location to which the decals are to be affixed shall be marked using yellow vinyl electrical tape. Adhesive shall be applied to the back of the sheeting which shall then be mounted on the surface. Any excess adhesive shall be cleaned away using solvent or cleaner approved for that purpose and the electrical tape shall be removed.

This item shall be paid at the contract unit price **EACH** to DESIGN AND IMPLEMENT A DECAL BASED NUMBERING SYSTEM FOR ALL HIGHWAY LIGHTING SYSTEMS which shall include designing, furnishing and installing a decal based lighting numbering system complete.

**Item BX-1 GROUP REPLACEMENT OF MERCURY VAPOR LAMPS**

**Item BX-2 GROUP REPLACEMENT OF HIGH PRESSURE SODIUM LAMPS**

**Item BX-3 GROUP REPLACEMENT OF LOW PRESSURE SODIUM LAMPS**

**Item BX-4 GROUP REPLACEMENT OF METAL HALIDE LAMPS**

Under these items, at the contract unit price **EACH** for GROUP REPLACEMENT OF MERCURY VAPOR LAMPS, GROUP REPLACEMENT OF HIGH PRESSURE SODIUM LAMPS, GROUP REPLACEMENT OF LOW PRESSURE SODIUM LAMPS, GROUP REPLACEMENT OF METAL HALIDE LAMPS as shown in the Schedule of Prices, and when directed by the Engineer in writing, the Contractor shall group replace lamps in the Street and Highway Lighting System at an interval approximating the rated life of the lamp. The actual dates of the group replacement shall be in accordance with Maintenance Schedules. All lamps used for group replacement shall be subject to approval by the Engineer. At the time of group replacements, the Contractor shall clean the reflectors and glassware, and re-align and level luminaires according to specifications approved by the Engineer for the particular luminaires involved. All glassware shall be washed, rinsed and wiped dry inside and out. Clean any dirt and debris from on or around underpass, wall, and/or roof mounted fixtures or navigation lighting fixtures. Each fixture opened for washing shall be securely re-locked. If any decals are torn or missing, including the mounting bracket, they shall be replaced. They shall be part of this item.

All used lamps must be taken to a certified processing facility meeting Environmental Protection Agency (EPA) Standards. A receipt shall be furnished to the County showing that the lamps have been disposed of properly. The lamps shall be taken to Fluorecycle, Inc. (815-363-4411) or to another EPA and the County approved lamp recycling center.

#### **Item BY-1 REPLACE FAULTY CABLE FOR STREET AND ROADWAY LIGHTING SYSTEM**

Under this item, for a unit price **FOOT** to REPLACE FAULTY CABLE FOR STREET AND ROADWAY LIGHTING SYSTEM as shown in the Schedule of Prices, and when directed by the Engineer in writing, the Contractor shall replace spans of Street and Roadway Lighting System cable with cable-in-duct, or approved equal. This item of work shall not be confused or construed to be in conflict with any part of Routine Maintenance, which requires the replacement of spans of damaged cable by the Contractor at his expense. The Engineer shall determine the need to replace cable, based upon a history of cable failure, data from tests made on the cable, visual inspection, and other pertinent data supporting the need for cable replacement. Nothing under this item shall be construed as obligating the Department to authorize any cable replacement.

##### **A. CABLE-IN-DUCT:**

This work shall consist of removing, furnishing, splicing, installing, and testing the entire length of electric cable and duct, of the type and size specified and furnishing and installing insulated bushings on the ends of existing conduits.

The assembly of conductors, cables, and ducts shall be made at the factory in continuous lengths that will permit installation of the longest spans without splicing either cable or duct. Splices of cable or duct will be permitted only in handholes, light standard bases, or junction boxes, and none will be permitted in the trench. Each length of cable and duct shall consist of four individually insulated conductors, surface color coated, one red, one black, one green and one white, laid parallel in a flexible plastic duct. All four conductors shall be of the same AWG size. The cable-in-duct assembly shall be factory coiled and delivered on reels with underwriters tags and labels which shall be removed from the reels by the Engineer for the Departments records.

**A.1 MATERIAL:** The flexible electrical plastic duct shall be manufactured to comply with the American Society for Testing and Materials Standards (latest edition) cited by the ASTM Designation Number.

The duct shall be manufactured from black polyethylene complying with ASTM D1248, Type III, Grade 3, Class C with the following exceptions and additions:

- i. The Elongation when tested by the procedure in ASTM D638 shall be a minimum of 300%.
- ii. The Brittle Temperature when tested by Procedure A in ASTM D746 shall be -70 degrees C or below.
- iii. The Environmental Stress Crack Resistance when tested in accordance with ASTM D1693 shall produce not more than 2 failures per 10 specimens after 48 hours.

**A.2 CONSTRUCTION:** The duct shall be manufactured as polyethylene plastic pipe complying with ASTM D2104 with the following exceptions and additions:

- i. The outside diameter, minimum wall thickness, and bending radius shall be as follows:

Nominal Size	Outside Diameter	Minimum Wall Thickness	Minimum Bending Radius
Inches	Inches	Inches	Inches
3/4	1.050	0.080	13
1	1.315	0.100	13
1-1/4	1.660	0.106	18
1-1/2	1.900	0.122	21
2	2.375	0.158	26

The duct may be manufactured to the dimensions in this table, for Schedule 40. The duct must be capable of being bent in the minimum bending radius listed above.

- ii. The duct shall pass the following tests:

**Freeze-up Test:** A ten foot length of the duct bent into an upright "U" shape shall be filled with water and then placed in a low temperature cabinet and maintained at -20 degrees C for 24 hours. The duct shall not crack or burst during the test.

**Compression Test:** The test shall be conducted on a six inch sample of the duct, using equipment set at two inches per minute. Samples are placed between six inch plates and compressed at the rate of one-half inch per minute until the distance between the plates is reduced by 50%, recording the load required to compress the duct. The samples are then removed and allowed to stand for exactly 5 minutes. The load required to compress the sample shall be equal to or greater than that listed below and the duct shall have returned to not less than 85% of its original diameter at the end of the 5 minutes.



Nominal Size Inches	Load Lbs
3/4	122
1	167
1-1/4	243
1-1/2	297
2	387

- A.3 Tests: All of the tests referred to above and the applicable tests in the cited ASTM Standards shall be performed on the duct at the manufacturer's plant and certified copies of the reports of the results of these tests shall be submitted to the Engineer prior to the installation of the duct.
- A.4 Construction Methods: The electric cable shall be continuous without splices between cabinets, service connections and light standards. The duct shall be continuous between light standards, and the first light standard and the control cabinet, and through all conduits. The duct shall extend one foot into the light standard and the cable shall be long enough for the splices to be withdrawn one (1) foot six (6) inches out of the light standard handhole. All electric cable and unit duct shall be placed in trench or conduit at a minimum depth of two (2) feet six (6) inches below finished grade.
- A.5 Basis of Measurement: Electric cable unit duct shall be measured in lineal foot in place and taken as the length of the white wire. Measurement shall be made in a straight line between changes in direction and to the centers of light standards and control cabinets. All vertical cable and permissible slack shall be measured for payment.

**B. ELECTRICAL CABLE 600V, PLASTIC INSULATED, MATERIALS:**

The electric cable shall comply with the American Society for Testing and Materials Standards (latest edition) cited by the ASTM Designation Number and to the Insulated Power Cable Engineers Association Standards cited by the paragraph or table number in I.P.C.E.A. Publication NO. S-61-402 (latest edition).

- B.1 CONDUCTORS: Conductors of No. 8 AWG size and smaller shall be solid annealed copper wire complying with ASTM Designation B-3.
- Conductors of No. 7 AWG size and larger shall be stranded annealed copper wire complying with ASTM Designation B-8, Class B. More flexible wire may be substituted for that specified.
- B.2 INSULATION: The conductors will be insulated with plastic insulation which shall be Polyvinyl Chloride 75C complying with Paragraph 3.8 of I.P.C.E.A. Publication No. S-61-402. The thickness of the insulation shall comply with Paragraph 3.2 of the above Publication and shall be as stated in Table II.
- B.3 ALTERNATE INSULATION: The conductors will be insulated with plastic insulation which shall be Cross-Linked Thermosetting Polyethylene complying with Interim Standard #2 to

I.P.C.E.A. Publication No. S-66-524. The thickness of the insulation shall be as stated in Table I.

- B.4 TESTS: All applicable tests in Part 6 of I.P.C.E.A. Publication No. S-61-402 shall be performed on the cable at the manufacturer's plant and certified copies of the reports of the results of these tests shall be submitted to the Engineer prior to the installation of the cable.
- B.5 SPLICING OF 600 VOLT CABLE AND WIRE shall meet the requirements of article 1066 of the Standard Specifications.
- B.6 ALL AREAS AND PLANT MATERIAL DAMAGED shall be replaced as follows:
- i. Grass Areas: Replace top soil to a depth of four (4) inches (100 mm), regrade shoulders, ditch slopes, and open areas back to former existing grades, fertilize, seed and mulch all damaged areas.
  - ii. Sodded Areas (areas adjacent to residential, commercial and industrial properties and any other areas as directed by the Engineer): Fertilize and re-sod damaged areas.
  - iii. Plant Materials: Remove and replace damaged trees, shrubs and vines with the same varieties that existed prior to the damage.
  - iv. Shoulders other than stabilized and backslope: Replace shoulder to original condition and restore edge of backslope to original lines and grades. Medians, sidewalks and pavement shall be replaced in kind.

All damaged landscape shall be replaced in accordance with Section 250 through 254 of the Standard Specifications.

Any damage, due to the installation of equipment; or necessary removal at handholes, jacking pits, and inspection openings, of sidewalks, curbs, gutters, median and island paving, and/or pavement, shall be repaired or replaced by the Contractor. Repair or replacement shall be made with a like material of like thickness to the existing surface.

This work will not be paid for directly but shall be considered as included in the contract.

B.7 CONTROL OF MATERIALS

The contractor shall comply with the requirements of Section 106 of the Standard Specifications and in addition shall comply with the following:

Within thirty (30) days after the Engineer's authorization and before any work is performed the Contractor shall submit for approval to the Engineer complete manufacturer's specifications and descriptive bulletins, drawings, etc. of wire, cable, splicing connectors, tapes and adhesives, conduit, duct, raceways and equipment to be installed.

Before any electrical equipment is delivered to the job site the Contractor shall obtain and forward to the Engineer:

- i. A written, certified, notarized statement from the manufacturer, stating the catalog numbers of equipment and guaranteeing that the equipment complies in all respect with the requirements of these Special Provisions.
- ii. The Contractor shall prepare the equipment in his shop so that it can be readily inspected and shall request an inspection of the equipment. The inspector will tag that equipment which is inspected, and it may then be delivered to the job site. No uninspected material is to be delivered to the job site or installed in the work. No material will be inspected unless the certified notarized statement required above is delivered to the Engineer.
- iii. The Contractor shall supply samples of all wire and cable, and shall make up and supply samples of each type of cable splice used in the work.

**B.8 INSPECTION:**

The Contractor shall comply with the provisions of Articles 105.12 and 105.13 of the Standard Specifications and in addition shall comply with the following:

- i. All splices, taps and ground connections shall be inspected by the Engineer before the wires are permanently trained in handholes, junction boxes, conduits, or light standards.
- ii. After the installation has been completed, current, voltage, and insulation resistance readings for each circuit shall be taken and tabulated by the Contractor. Any indication of grounds shall be thoroughly investigated and remedied before final acceptance of the installation. Insulation resistance shall meet with the approval of the Engineer. Lamp terminal voltages shall be taken at the locations designated by the Engineer. Three copies of the tabulation of voltages, current, and insulation resistance readings shall be submitted to the Engineer. A field test, witnessed by the Engineer shall be made to insure that all lighting and control equipment is in proper operating condition.

**Item BZ-1 SPECIAL CLEANING OF LUMINAIRES, STANDARD UNIT OVER 30'**

**Item BZ-2 SPECIAL CLEANING OF LUMINAIRES, HIGH MAST UNIT, OVER 80' WITH LOWERING DEVICE**

**Item BZ-3 SPECIAL CLEANING OF LUMINAIRES, UNDERPASS UNIT UNDER 30'**

Under these items, at the contract unit price EACH for SPECIAL CLEANING OF LUMINAIRES, STANDARD UNIT OVER 30', SPECIAL CLEANING OF LUMINAIRES, HIGH MAST UNIT, OVER 80' WITH LOWERING DEVICE, SPECIAL CLEANING OF LUMINAIRES, UNDERPASS UNIT UNDER 30' as

shown in the Schedule of Prices, and when directed by the Engineer in writing, the Contractor shall clean luminaires, reflectors, and glassware for units of the Street and Roadway Lighting System. All glassware shall be washed, rinsed and wiped dry inside and out. Clean any dirt and debris from on or around underpass, wall, and/or roof mounted fixtures or navigation lighting fixtures. Each fixture opened for washing shall be securely re-locked. If any decals are torn or missing, including the mounting bracket, they shall be replaced. They shall be part of this item.

This work is in addition to the annual cleaning specified under Routine Maintenance, and the cleaning specified under Group Replacement.

**NAVIGATION LIGHTING SYSTEM ROUTINE MAINTENANCE****Item C-1 NAVIGATION LIGHTING SYSTEM**

In addition to the requirements listed above under ROUTINE MAINTENANCE, the following shall be part of this item:

1. Report in writing to the Engineer, lamp and circuit outages and damaged, broken or defective components within two working days after each inspection.
2. Replace all burned out lamps and broken glassware not later than twenty four (24) hours following discovery or notification. Determine the cause of the malfunction unless it was caused by a burned out lamp, without energizing the light from the normal source. Replace all burned out lamps and broken glassware to match the same type characteristic as the original installation.
3. Clean all types of luminaires ONCE EVERY TWELVE (12) MONTHS in accordance with MAINTENANCE SCHEDULES. All glassware shall be washed, rinsed and wiped dry inside and out. Clean any dirt and debris from on or around navigation lighting fixtures. Each fixture opened for washing shall be securely re-locked.
4. Provide immediate corrective action to restore service involving an outage of one (1) or more lights on a circuit.
5. When ground conditions restrict the making of permanent repairs, the repairs shall be performed in accordance with a MAINTENANCE SCHEDULE.
6. Repair or replace all cable damaged from any cause whatsoever, as follows: Where such damaged cable is in duct, steel or plastic conduit, the faulty wiring shall be removed and replaced with an approved new cable and the duct or conduit shall be repaired. Where damaged cable is buried in earth, the faulty section shall be removed and replaced using approved cable and splicing methods. When temporary cable is installed, all splices shall be as good as splices for permanent repairs.
7. Maintain in Contractor's stock at all times sufficient assorted new Navigation Lights, Lenses, Lamps, Breakers, Fuses, Switches, Timers, Relays, Splicing, Materials, Cable, Conduits and Fittings, and other parts in order that all malfunctions from any cause whatsoever, can be temporarily or permanently corrected, and all defective or damaged components, can be replaced.
8. Repair or replace any part or parts of the system damaged from any cause whatsoever, except as provided for under Item CX and CY.

**BRIDGE CATHODIC PROTECTION SYSTEM ROUTINE MAINTENANCE****Item C-2 BRIDGE CATHODIC PROTECTION SYSTEM**

Under this item, the Contractor shall service and maintain the existing bridge cathodic protection systems and any new bridge cathodic protection systems-that may be installed or taken over for maintenance by the Department during the period of this Contract.

1. Patrol and inspect the bridge cathodic protection system for proper operation once every two (2) weeks.
2. Maintain cathodic maintenance log sheet as instructed by the Engineer and perform operations as stated. The log sheet shall not be revised or removed from the rectifier. Copies of all entries to the log sheets are to be emailed to the Department's downtown office by November 15. One log book shall contain current year data as well as information as recorded in previous years.
3. Twice a year, in April and October, with the Engineer present, perform the following tests (tests to be done as specified in the Operating Manual furnished by the Cathodic Protection System Manufacturer):
  - Operating voltage at each rectifier output.
  - Operating current at each rectifier output.
  - "On" and "Off" potentials of the rebars with respect to each embedded reference electrode.
4. Keep power supply, controller cabinet and all its components, and service cable and conduit in proper working condition. The Contractor shall notify the Engineer in writing immediately upon failure of any part(s) of the cathodic protection system. Estimated time of repair shall also be included in this report.
5. Any connection lead to the bridge structure will be replaced and/or spliced (with an approved heat shrink type splice with a meltable sealant) as part of this item with the exception of the thermite brazing connections which will be paid for under Item CZ.
6. Once a year have the Cathodic Protection System settings analyzed by a Cathodic Protection Expert (Expert to be a representative of CorrPro Companies, Inc). Make any changes to settings as recommended by the Cathodic Protection Expert.

**Item CX-1 REPLACE BROKEN LENSES**

Under this item, as listed in the Schedule of Prices, navigation lenses damaged shall be replaced by the Contractor.

The Engineer shall determine the need to replace broken lenses. Nothing under this item shall be construed as obligating the Department to authorize any broken lenses replacement.

Bid prices shall reflect the inclusion of the removal, and disposal of damaged lenses, the removal of debris, the furnishing, delivering, installing of all miscellaneous materials and the labor necessary to make a complete installation.

Damage to items not specifically provided for in the bid prices shall be repaired or replaced as part of routine maintenance.

**Item CY-1 REPLACE NAVIGATION LIGHTING UNIT**

Under this item, as listed in the Schedule of Prices, navigation lighting units damaged shall be replaced by the Contractor.

The Engineer shall determine the need to replace navigation lighting unit, based upon a history of navigation lighting unit failure, visual inspection, and other pertinent data supporting the need for replacement. Nothing under this item shall be construed as obligating the Department to authorize any navigation lighting unit replacement.

**1. NAVIGATION LIGHT FIXTURE:**

This item shall consist of furnishing and installing a navigation light fixture, conduit connection, and all appurtenances mounted on bridges. The existing navigation light fixture shall be properly disposed of off of County Right Of Way.

The existing navigation light fixtures currently installed on the Department structures meet U.S. Coast Guard (U.S.C.G.) Bridge Lighting Regulations. Refer to Section 822 of the Standard Specifications for Road and Bridge Construction, current version. Replacement fixtures or equipment required under this contract shall:

- A. Meet current U.S.C.G. regulations.
- B. Be mounted in the same location and manner as the original units.
- C. Match the Fresnel lens color and degree spread (either 180 degrees or 360 degrees) as the existing units.
- D. Be equipped with a Lens Protector.
- E. Light fixture shall match the same type characteristic as the original installation.

**2. LENS PROTECTOR:**

The shields shall be formed from 3/16" clear Lexan and be ballistically proven to deflect most small caliber bullets from 25 to 75 feet.

The existing Lens Protectors currently installed on the Department fixtures meet U.S. Coast Guard Bridge Lighting Regulations. Replacement Lens Protectors of equipment required under this contract shall:

- A. Meet current U.S.C.G. regulations.
- B. Be mounted in the same location and manner as the original units.
- C. Match the degree spread (either 180 degrees or 360 degrees) as the existing fixtures.
- D. Lens protector shall match the same type characteristic as the original installation.

The Contractor shall provide all equipment, transportation and labor necessary to furnish and install the equipment as specified. New wiring and conduit will be paid under separate contract pay items.

Bid prices shall reflect the inclusion of the removal, and disposal of damaged parts, the removal of debris, the furnishing, delivering, installing of all miscellaneous materials and the labor necessary to make a complete installation.

Damage to items not specifically provided for in the bid prices shall be repaired or replaced as part of routine maintenance.

**Item CZ-1 REBRAZE LEAD WIRE TO STEEL REINFORCEMENT BAR**

Under this item, as listed in the Schedule of Prices, lead wires broken off from the rebar shall be repaired by the Contractor when directed by the Engineer in writing. The existing concrete is to be removed in the area of the rebar taking care not to damage the anode system installed in the deck. The thermite brazing kit shall be Cadweld cathodic protection connections. All thermite brazed connections shall be installed and tested in accordance with the manufacturer's specifications and instructions. All thermite brazing connections shall be coated with a nonconductive epoxy coating. Patch the rebar excavation with concrete equal to the existing or as directed by the Engineer.

Bid prices shall reflect the inclusion of the removal, and disposal of damaged parts, the removal of debris, the furnishing, delivering, installing of all miscellaneous materials and the labor necessary to make a complete installation.

Bid prices shall reflect the inclusion of any labor or material not specifically provided for in the bid prices but necessary to make a complete replacement installation.

Damage to items not specifically provided for in the bid prices shall be repaired or replaced as part of routine maintenance.



**Item CZ-2 REPAIR ANODE MESH**

Under this item, as listed in the Schedule of Prices, the anode mesh shall be repaired by the Contractor when directed by the Engineer in writing. The existing concrete is to be removed by others. If the removal of the delaminated concrete has exposed any steel, the Contractor shall test the steel to ensure good electrical conductivity. If the steel is found to be discontinuous, the Contractor shall make it continuous.

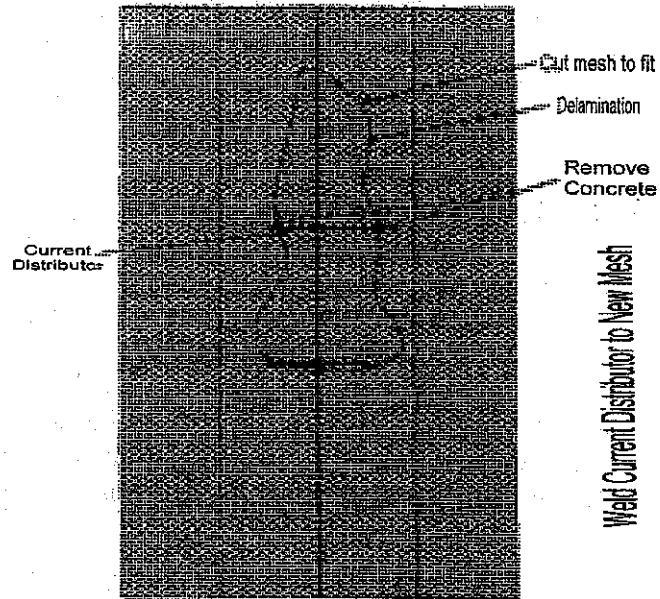
**METHOD OF SPLICING:**

1. With a concrete chisel, carefully expose two (2) diamonds of mesh at each of two (2) locations on opposing sides of the excavation. Measure and cut a length of current distributor to fit across the excavation, ensuring that the current distributor is sufficiently long to overlap the exposed two (2) diamonds on either side. Weld the current distributor to the exposed mesh at the junctions of the diamonds.
2. Cut a piece of ELGARD mesh to fit the size of the excavation. Place the new ELGARD mesh in the excavation. Weld the new mesh to the current distributor at each junction point or every three (3) inches. Fasten the mesh to the concrete using the Xmas tree fasteners provided by ELGARD Corporation.
3. If the elimination extends across the width of the mesh, then additional current distributor must be used to splice the embedded mesh to the mesh used for repair. This step will ensure that the piece of mesh on the far side of the repair from the power feed is electrically continuous with the new mesh.
4. Check for short circuits between the anode (mesh) and steel using a portable DC voltmeter.

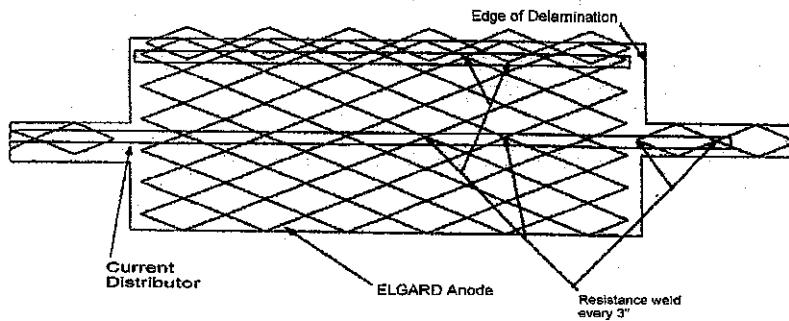
Bid prices shall reflect the inclusion of any labor or material not specifically provided for in the bid prices but necessary to make a complete replacement installation.

Damage to items not specifically provided for in the bid prices shall be repaired or replaced as part of routine maintenance.

PLAN VIEW OF DELAMINATION



WELDING DETAIL



**Item D PUMPING STATION ROUTINE MAINTENANCE**

Under this item, the Contractor shall service and maintain the existing pumping stations and any new pumping stations that may be installed or taken over for maintenance by the Department during the period of this Contract. The pump station is identified by location and pump capacity.

The Pumping Station (PS) System shall consist of all types of pumps, motors, switchgear, control systems, alarm systems, control processors, transformers, purged air systems, recording systems, lubrication systems, trash racks, water systems, lighting systems, power wiring, heating/ventilating systems, flow metering systems, compressed air system, fencing, gates, windows, doors, locks, gas detection system and all auxiliary appurtenances owned by Cook County and under the jurisdiction of the Cook County Department of Transportation and Highways.

Pump Stations shall remain in continuous operation during normal and emergency maintenance activities. It is imperative that the Contractor immediately address alarms, reports of water on pavement, reports of clogged inlet or catch basin, or other serious malfunctions or damage by dispatching trained personnel to check the pump station.

**THE FOLLOWING SHALL BE PART OF THIS ITEM:**

- A. At the beginning of the Contract, the Contractor shall, under routine maintenance:
- Organize log books in each pump stations as described herein.
  - Replace locks of all pump stations and furnish a set of keys to the County.
  - Furnish and deliver replacement compressed air tanks at all pump stations.
- B. Patrol and inspect the pumping station system and check each pumping unit for proper operation once every two (2) weeks. Alternately perform Item R and S monthly inspection.
- C. The Contractor shall submit the names and addresses of a minimum six (6) potential vertical/submersible service repair companies within the Tri-State area of Illinois/Indiana/Wisconsin, for Engineer approval, at the Pre-Construction meeting. The Contractor shall submit the name(s) of lab facilities that are certified and equipped to test oil and other lubricant fluids for Engineer approval, at the Pre-Construction Meeting.

When the Contractor is unable to complete repairs to pump station equipment the Contractor shall provide a County approved Service Company to supplement his forces in order to meet contract requirements. The Contractor shall provide all labor, equipment, and general services necessary to schedule and assist a specialty service company in conducting various comprehensive testing and inspections, including routine and non-routine work.

The Contractor shall coordinate work with the Service Companies and provide qualified Contractor personnel to:

- Allow free and clear access to and from the pump station and all equipment.
- Open and close all enclosures that limit direct line of sight to the electrical equipment being inspected.
- Perform all switching, de-energizing and re-energizing of electrical equipment.
- Provide for safe working conditions in accordance with OSHA requirements.
- Assist in data collection when requested by the Engineer.
- Perform lock out tag out procedures.
- Notify the power utility company to schedule all power outages required to complete the project.

D. Maintenance Response for Pump Stations:

Report to the engineer by the fastest means of communication:

1. any work authorized being performed by others affecting the system,
2. any other work in progress which may come to his attention and which may endanger or damage any installation of the system,
3. Any emergency temporary repairs which may cause the Contractor to make temporary major changes in the system.

Respond to all emergency calls by the Engineer, and all calls by the Engineer to supervise additional installations by others, or to locate underground cables or any other components of the system to prevent damage by any proposed construction.

4. Upon receipt of an AEGIS or other Pump Station alarm the Dispatch Center personnel shall create a Ticket.
5. For all alarms except Entry Alarms the Dispatch Center shall immediately dispatch Contractor trained personnel to the station to check the alarm (arrival shall be within one (1) hour of the receipt of the alarm). For Entry Alarms the Dispatch Center shall first notify the respective police department for the pump station. The Contractor trained personnel shall not enter the premises without having the pump station investigated by the police.
6. Upon arrival at the pump station the Contractor trained personnel shall radio or telephone the Dispatch Center and relay arrival information, including a notation of all alarms flashing on the annunciator panel.
7. All information on the incident shall be recorded in the Log Book.
8. If possible, the Contractor trained personnel shall make all necessary repairs required to return the pump station to its normal operating condition. (If follow-up repairs are needed in an emergency situation, the Contract Manager shall be immediately notified.)
9. The Contractor trained personnel shall notify the Dispatch Center, before departing the

pump station, as to status of problem, whether it was cleared or if follow-up work is necessary. (All response information shall be recorded on the Ticket). The Contractor trained personnel shall make sure all non-tagged pumps are on automatic and that all doors and hatches are locked.

10. In the event of a Power Failure Alarm the Contractor trained personnel shall monitor the power outage status at regular intervals and notify the Contract Manager and the Engineer if a high water level is eminent. (Temporary Pumping Requirements as stated herein shall be applied.)
11. Upon receiving a storm warning, from the Engineer, the Contractor shall dispatch sufficient trained personnel to initiate these actions within one hour:
  - Check the operating status of each pump station.
  - Check the condition of the trash on bar screen(s). Clean if necessary.
  - Check the status of the low point inlet for the pump station, if clogged clean.

E. The Contractor shall maintain each existing alarm system including any new ones added to the pump stations. At the beginning of the Contract, the Contractor shall inspect and operationally check each pumping station's alarms system to determine and verify that the equipment, including the station's telephone is operating satisfactory and is in sound condition. The transmitter is to be checked by introducing real and, if necessary, simulated alarms for each wired function. All wired functions are to be identified. The Contractor shall prepare and submit to the Engineer a written report on the alarm status of each pumping station. This work shall be completed by January 31 of the current year. Check the operation of all alarms on a monthly basis.

1. The Contractor shall have the responsibility for proper operation and maintenance of all AEGIS System equipment. The Contractor shall own and maintain one AEGIS Silent Knight 8526 receiver in the Contractor's Dispatch Center, and all existing alarm transmitter units at each pump station including any new units added during the contract year, and all associated equipment.
2. The Contractor shall assure that all AEGIS units are functioning for call out to the receivers and shall supply and program prom chips as required for each alarm transmitter unit. A 20-second time delay shall be programmed to prevent oscillation of low level alarms due to possible wave action.
3. The AEGIS system shall be configured to execute a 24-hour communication check. This daily check shall be monitored and documented by dispatchers at the Dispatch Center. The weekly report of the communication checks shall be submitted to the Engineer. Any stations having communication problems shall have Tickets created.
4. The Contractor shall be responsible for the cost of the radio alarm connection for Pump Station No. 6 and Pump Station No. 7.

- F. Under heavy rainfall conditions a check shall be made of all pumping stations and their low points on the highways. Whenever the Contractor observes and/or is notified and services a pump station during an event which causes water on pavement condition, the Contractor's representative shall complete and submit to the Engineer, within 24 hours, a Condition Report. The Contractor, upon notification as indicated by the alarm system of any pumping station, shall dispatch trained personnel to the location immediately, and effect emergency repairs or perform such operations that will restore the pumping station to normal operating condition.
- G. After each major rainstorm the Contractor trained personnel shall clean the trash rack bin, bar screen, and the area between the trash rack bar screen and the inlet sewer (to the bare concrete floor). In addition, the float and probe sensor shall be checked for proper operation, and any debris shall be removed. A check shall be made of the inlet/catch basins. If the inlet/catch basins are clogged the Contractor trained personnel shall notify the Engineer.
- H. The Contract Manager shall be notified of any reports of possible hazardous materials in the pump station wet pits, and he shall be responsible to immediately notify an approved Hazardous Materials Waste Contractor. OSHA safety regulations must be followed at all Pump Stations. Any Contractor personnel entering a pump station shall be properly trained and equipped for confined space operations, and shall be equipped with essential equipment such as voltage and clamp-on current meters of various ratios, tape and block, and marking paint or marker (to note water levels). Also remove and properly dispose of oil, gasoline, or other pollutants from the wet pit as they may occur. Removal shall be other than pumping pollutants into the outflow chamber.
- I. All pump stations shall remain in continuous operation while maintenance activities are in progress. Continuous operation may require the Contractor to provide and install temporary portable standby pumps to maintain adequate station outflow capacity. The Contractor shall submit to the Engineer for approval at the Pre-Construction meeting a detailed station operating plan for scheduled maintenance or a work order report for non-scheduled maintenance activities which will directly affect normal inflow and outflow pumping operations. All costs for labor, equipment and materials required by the Contractor to provide continuous pumping operations as described herein shall be paid for as part of Routine Maintenance.

The Temporary Operating Plan submittal shall include a list of suppliers that, on an immediate on-call basis, can provide the Contractor with temporary pumps, or generators, to maintain outflow capacity.

A back-up generator(s) shall be immediately mobilized to each pump station when the Contractor is notified of a high water level or alarm, or water on the pavement due to a power failure. This is considered routine maintenance.

- J. No existing station pumps shall be manually operated by the Contractor, for general maintenance operations, including pump inspection, wet pit cleaning, and all other wet pit work requiring abnormally low water levels, with insufficient wet pit water level depths.
- K. Maintain pumping station log books as instructed by the Engineer and perform operations as stated. The log book shall not be revised or removed from the station. Furnish two separate log books for each pumping station. One log book shall contain current data, and the other log book shall contain information as recorded in previous years.
- L. The Contractor shall provide general site and building maintenance at pump stations.
1. The Contractor shall provide general site maintenance at pump stations, including, snow plowing and removal operations as required to provide safe access to facility, debris disposal, and removal operations as required to provide safe access to facilities, and to maintain the sites in an aesthetically acceptable condition to the public. Debris disposal weed control work shall be performed in the station areas in the County R.O.W. and shall be conducted to a radius of fifty (50) feet surrounding the building, and on or within five (5) feet of the access driveway.
  2. Dispose of any debris found on the grounds. Remove any debris build up in gutters, drains or down spouts.
  3. Keep painted floors mopped and concrete floors broom-cleaned.
  4. Keep outside of motor and shaft housing and equipment cabinets clean. Wash the interior and exterior walls at least once a year or more often as necessary. All stairways, stairs and railings to be pressure washed once each year.
  5. Contractor is to remove graffiti from all pump houses. If a graffiti control barrier has been previously applied it is to be reapplied after removal of the graffiti and is considered part of routine maintenance.
  6. Replace any glass blocks or broken windows.
  7. Replace all defective and missing caulking anywhere it is found either inside, outside or on the roof. The caulking used shall match the color and type as is existing.
  8. The Contractor shall check the building roof during the first six months of the year to assure a clean and sound condition and that the roof drains operate freely. A written report shall be submitted to the Engineer for each pumping station roof by July 15.
  9. The Contractor shall repair minor roof leaks at localized areas such as around hatches as part of routine maintenance.

10. Snow plowing and removal operations shall be conducted as necessary to provide safe and reasonable access to each pump station. All pump stations that require access for patrol shall be attended to immediately following a snowfall of three inches or more.
- M. Replace or repair defective or inoperative fuses, lamps, relays, switches, motor contactors, circuit breakers, pump alternating controls, overload relays and essential parts, alarm system, control processors, and various control panel components. Replace wires, cables, and conduits that become defective or grounded. Motor repairs required resulting from lubricant emulsification of winding insulation or from failure of overload protection devices shall be completed at the expense of the Contractor.
- N. Report to the Engineer in writing as soon as detected, any part of the system which are damaged or inoperative. The Contractor shall determine the cause of the failure, and shall disassemble the unit to the extent necessary and shall repair or replace the damaged part or parts of the systems damaged from any cause whatsoever, all subject to the Engineer's approval. Permanent correction of previously accomplished temporary repairs shall be made promptly. Unless specifically exempted in writing by the Engineer at the Contractor's request, no permanent repair shall take longer than eight (8) weeks to accomplish. In addition to defective component replacement the Contractor shall overhaul any pumping unit having the faulty component to the extent of complete refurbishment or replacement including shafts, bowls, bearings, impellers, propellers, seals, forced lubrication, copper/stainless steel lubrication feed lines and necessary auxiliary equipment all subject to the Engineer's approval. Wet pit cleanings necessary to provide access to damaged pumps for repair purposes shall be at the expense of the Contractor. All work performed under this item with the exception of cleaning the wet pit shall be considered as regular work and shall be in accordance with Article II Regular Work upon the authorization of the Engineer.
- O. Rebuild completely as selected by the Engineer any main pumps during the term of this Contract. The work shall include refurbishment or replacement of shafts, bowl, impellers, propellers, and seals. Also included shall be installation of forced lubrication system, copper/stainless steel lubrication feed lines, and necessary auxiliary equipment. All work associated therewith including scheduling shall meet with the approval of the Engineer. Said pumps shall be selected from the main pumps at any of the pumping stations listed under List of Locations. Wet pit cleanings necessary to provide access to the work shall be at the expense of the Contractor. All work performed under this item with the exception of cleaning the wet pit shall be considered as regular work and shall be in accordance with Article II Regular Work-upon authorization of the Engineer.
- P. Obtain approval from the Engineer before beginning work on permanent repairs to the system or any parts thereof, and recommend to the Engineer any change. Keep records of repairs and services to all serial numbered pieces of equipment and make them available to the Engineer upon request.



- Q. The Contractor shall perform a monthly PS Quick Check at all pump stations. The trained Contractor personnel performing the inspection shall radio the Dispatch Center to create a ticket for all deficiencies or malfunctions found. The Quick Check shall be performed by the trained personnel, other than the PS crew who are responsible for PS emergency response during off-hours as per the approved emergency response plan. Other personnel shall be trained and deployed for the PS emergency response plan. No release is required for these personnel while they are assigned to these Quick-Check duties and emergency response duties in accordance with the emergency response plan.
- R. PS Monthly Quick Check (check the following Pump Station Items):
1. Are inlets clear of debris? (If clogged telephone or radio the dispatch center to create a ticket. The dispatch center must telephone the engineer immediately to request clean up by county maintenance).
  2. Is grass cutting required?
  3. Is fence secure?
  4. Is building roof free of leaks?
  5. Are doors, windows, walls, and hatches secure and free of graffiti?
  6. Dry pit condition ok?
  7. Alarm panel ok? (No alarms holding).
  8. Lighting fixtures outages?
  9. Montor Control Center (MCC) panel indicator lamps ok?
  10. Water level meters at proper levels?
  11. Ground detection indication lamps ok?
  12. Is trash bin free of debris?
  13. Does bar screen need cleaning?
  14. Is wet pit free of hazardous materials?
  15. Pump On/Off operation ok? (Simulate a call). Check following:
    - Pump operation via Hand-Off-Auto selector switch.
    - Float switches for proper operation.
    - Transducer level sensor for proper operation.
  16. Abnormal noise from pumps?
  17. Is piping free of leaks?
  18. Is pump free of abnormal noise or vibration?

19. Is oil level consumption ok?
20. Is grease operation ok?
21. Are grease and oil lines free of leaks?
22. Is thermostat set properly and heater operating properly?
23. Are dampers and exhaust system ok?
24. Verify gas detector calibration.
25. Fire extinguisher ok? (Check expiration date and record inspection date).
26. For pump stations with submersible pumping units visually check (to the limits allowed by the water level within the wet pit) the following:
  - Check power cords for damage or entanglement.
  - Check guide rails for alignment or clinging debris.
  - Check fall prevention system for anything which may compromise its performance.
  - Check that equipment access hatches operate easily.
  - Check valve vault for accumulation of water.
  - Check valve vault sump pump for proper operation.

S. The Contractor trained personnel shall perform a Monthly Inspection:

1. Pump Operation Inspection (Under no circumstances shall the pump station be drawn down to a low level or past the designated stop elevation.):
  - Operate each pump and check alternator or selector switch for proper sequence in accordance with recommended manufacturer's procedures.
  - Set the selector switch on the pump with the lowest number of hours as the lead pump.
  - Record Oil Consumption.
  - Operate each unit once a month noting the current draw and compare with the motor plate and note any deviation and/or any abnormal operating sounds.
  - Take Flow Meter Reading.
  - Record Number of Starts and Hours Run.
2. Keep oil reservoirs filled within the levels recommended by the manufacturer. Use the proper grade oil as specified by the manufacturer.
3. Keep motor bearings properly oiled or greased as specified by the manufacturer for the type of bearing. When motors are lubricated, care shall be taken to insure that no lubricant

gets on the motor windings or electrical wiring. In addition, the air release valves/pipes shall be inspected (replace when required) and cleaned.

4. Packing glands shall be repacked if leakage occurs. Excessive tightening in lieu of repacking is prohibited.
5. All compressed air tanks shall be maintained and kept charged at all times during the course of the Contract. The Contractor shall not remove a tank from the station for recharging without immediately replacing same with a temporary spare. All fire extinguishers shall be maintained and kept charged at all times, and shall be recharged annually in January of each year.
6. Check flow meters.
7. The Contractor trained personnel shall exercise the transfer switch to inspect for proper transfer and time delay to secondary power source and time delay from secondary to primary and shall be recorded in the Log Book.

T. Keep heating, ventilating and air conditioning equipment properly maintained at all times, including air induction equipment. Replace all air induction filters as required and record in the Pump Station Log Book. Check each control panel and transfer switch for proper operation once every two weeks. All oil reservoirs shall be checked and filled within the levels recommended by the manufacturer. All filters and oils shall be changed in accordance with the manufacturer's specifications. The Contractor shall repair or replace any part of the heater and ventilating systems when they become damaged or inoperative from any cause whatsoever and shall be considered part of routine maintenance.

U. The Contractor trained personnel shall perform a semi-annually inspection:

1. The Contractor shall remove, inspect and service all submersible pumps. Service work shall include: visually inspect pump intake and impeller for clogging, changing oil, inspect oil reservoir for contaminants, shall check and clean air release pipes/valves, and shall flush the cooling system from debris. When removing submersible pumps check that pumping unit slides up the guide rail system smoothly. The wet pit submersible pumps shall be washed down with a pressure-hose, checking and adjusting clearance between the impeller and wear ring in accordance with the manufacturer's instructions. Upon reinstallation of submersible pumps check that pumping unit engages its discharge elbow to ensure proper seal between pump discharge flange and base elbow flange. The results of the inspection and service shall be recorded by the Contractor and a copy submitted to the Engineer. Note: Clean potable water shall be used for pressure-hose wash. For those pump stations which do not have hose bibs, Contractor to coordinate with local municipality for use of nearby fire hydrant. Contractor responsible for any fees associated with the use of the fire hydrant.

2. The Contractor shall inspect and service all vertical pump motors. Contractor trained personnel shall check motor heaters and clean the motor inside and out, wiping off dirt, dust, oil and water from external surfaces of the motor. Any dust or debris from the ventilating air inlets shall be removed. The motors shall be cleaned internally by blowing with clean, dry compressed air.
3. Operate all gates and valves completely at least twice each year to prevent sticking. For stations with bypass piping and valves make provisions before operating bypass valves to insure station flooding will not occur. The area between the sewer and the trash rack and the trash rack itself shall be kept free of debris. Any debris that is removed shall be disposed of outside the County Right-Of-Way in accordance with all Federal, State, County and Local regulations. All gates and valves requiring lubrications shall be lubed with environmentally safe grease. The Contractor shall check the actuators' lubrication consistency and level. If required, it shall be filled or replaced. All electrical connections shall be inspected and tightened. The Contractor shall also check for mechanical damage.

- V. The Contractor shall perform vibration analysis on all pumps semiannually. The first set of readings shall be taken concurrently with the annual pump capacity tests and again during the month of October.

The company performing the vibration testing must specialize in vibration analysis and balancing and have a minimum of ten years' experience in providing these services. Technicians collecting vibration data shall perform their own analysis and generate the report of findings including visual observations. Technicians should have a minimum of ten years' experience in vibration analysis and balancing or a Level II Vibration Certification from the Vibration Institute or its equivalent.

1. Equipment used for testing must be a current model Smart Meter Plus Model 1330F or better with compatible and current software. Software must be capable of vibration data trending, and advanced analysis functions. All vibration data for this project is to be stored and maintained by the company providing the service.
2. Testing will also be required on new installation or repaired pumps at start up at no additional cost to the County.
3. Vibration readings will be recorded at or as near to each accessible bearing housing on each pump. At each bearing housing vibration data will be recorded a minimum of two directions with the outboard motor bearing requiring three directions.

Example:

Vertical Pump:

Motor Outboard Bearing	Motor Inboard Bearing
1. Vertical	1. North/South
2. North/South	2. East/West

3. East/West
4. Three vibration readings must be taken and stored in each direction.
  - IPS Velocity spectrum from 120 CPM to a minimum of 10 orders of pump operating RPM or a maximum of 36,000 CPM with a minimum of 400 lines of resolution and two averages.
  - GS Acceleration Spectrum from 120 CPM to 300,000 CPM with a minimum of 400 lines of resolution and two averages.
  - Time waveform stored in conjunction with GS acceleration spectrum.
5. Vibration data must be analyzed and a report generated within five business days from completion of testing. Report must list all equipment tested and state whether vibration levels are acceptable or not. If vibration levels are found to be above acceptable levels then report must state clearly and concisely what corrective action needs to be taken. If unacceptable vibration levels are due to an unbalance condition then an in place balance must be attempted before proceeding with any other corrective action.

The following is the criteria that will be used in determining if vibration levels are acceptable.

- Vertical Centrifugal Pumps greater than 1000 RPM 0.3 IPS peak overall vibration or lower. Where motor speed is below 1000 RPM, the 0.3 IPS velocity "evaluation point" shall be decreased by 10% for each 100 RPM below one-thousand (1,000).
- The above values are based on equipment not mounted on vibration isolators.
- If equipment is mounted on isolators increase the values by 30%.
- Tests must be performed with a flooded suction that does not cause vortexing or cavitation. Every time a test is conducted, it must be made with the same amount of pump submergence as the previous test for that pump. When excessive vibration has been indicated, as described above, the motor shall be uncoupled from the pump and another test shall be made for only the motor. The inspection report shall contain the Manufacturer, Model Number, and serial number of the pump.

**W. The Contractor trained personnel shall perform an annual inspection:**

The Contractor shall conduct an annual comprehensive pumping station inspection. The Engineer, a pump station repair crew member, and the assigned patrol person shall be present at the inspection. The inspection results shall be documented by the Contractor and a copy submitted to the Engineer. A re-inspection will be scheduled by the Engineer following receipt of notice by the Contractor of completion of all deficiencies. Failure to correct noted deficiencies in accordance

with Contract Specifications will result in withholding of Monthly Routine Maintenance Payments for the particular station noted. The Following tests are to be included:

1. AEGIS Alarm System
2. Water Level Monitoring System Inspection: The Contractor trained personnel shall inspect the primary, and where applicable, the secondary water level monitoring Systems in each station. The Engineer shall be present for each inspection. This work shall consist of physically measuring the water level in the wet pit and comparing that value with the bubbler system implemented into the MCC, or other water level monitoring system. Any deviations over 1/2 foot that are found shall have appropriate tickets issued. This inspection shall also include the inspection of the trash rack.
3. Wet Pit Inspection: The Contractor trained personnel shall complete the wet pit inspection of all pump stations. The Contractor shall use his own portable pump to draw down the wet pit to a low level and maintain the existing inflow water in the wet pit. The following inspections are required:
  - Inspect all grease lines to ascertain if any are broken or clogged.
  - Inspect the integrity of all equipment attached to the structure such as the air bell, air line and the floats.
  - Inspect the floats for operational efficiency, and clear them of any debris.
  - Inspect the probes for operational efficiency, and clear them of any debris.
  - Take a photograph of any bowl assemblies which show any wear on the impeller and/or if the suction is clogged with debris. The photos shall be appropriately labeled and placed in a sheet album with the station report.
  - Inspect the silt accumulation.
  - Visually inspect the inlet sewer from inside of the pumping station.
  - Maintain existing wet pit lighting, clean lens and reflectors.
  - For those stations with submersible pumping units inspect the following:
    - Base elbow.
    - Mating flanges of pumping unit and base elbow.
    - Guide rail system.
    - Discharge piping.
    - Power, float, transducer cords.

Each report, including photo album, shall be included with the routine maintenance monthly submittal. Any deficiencies found on this inspection shall have appropriate tickets issued.

4. **Back-up Control System Inspection:** Contractor trained personnel shall inspect the secondary control system within all pump stations. The Engineer shall be present for each inspection. This work shall include inspection of all bubbler, electrode, and float Systems, whichever secondary control system is utilized. The inspection shall consist of all starts, stops and alarm control elevations. Any control elevations which are different than the required elevations shall be noted and corrected. Any deficiencies found on this inspection shall have appropriate Tickets issued.
5. **Electrical and mechanical equipment inspection.**
6. **Pump capacity, motor current, voltage, moisture, and megger tests**—shall be witnessed by the Engineer and recorded by the Contractor. The Contractor shall furnish all necessary instruments. The Contractor shall megger all motor windings and feeder cables. Additional pump capacity, motor current, and voltage tests shall be made after a new or rebuilt pump is installed and the test results entered into the LOG BOOK and a copy made for the Engineer. Any insulation resistance reading found to be below one (1) megohm will require the Contractor to determine the source or cause of the low reading and make prompt repairs as necessary.
7. **Oil Analysis:** The Contractor shall obtain suitable test containers from the lab facility which has been approved by the Engineer. Samples of oil shall be taken from the motor upper and lower bearing compartments, dry pit/wet pit submersible pumps. Samples shall be taken after running the motor or pump within fifteen minutes after pump is turned off. This work shall be done with the capacity and vibration test. The oil shall be drawn from the equipment reservoir. The oil should drain for a few seconds before taking the sample. A minimum of two (2) ounces of oil is needed for analysis. Never use the same tube to draw an oil sample from two different oil compartments in the above listed equipment.

The Contractor shall provide the laboratory with the brand and type of oil, type of equipment from which the oil has been drawn, number of days since the last oil change, and any suspected abnormalities in the equipment. Each sample of oil shall be labeled, so that it describes the distinct location from which it was taken. The Contractor shall ship the oil samples to the lab facility within one (1) month after they are taken. The incurring lab reports shall be submitted to the Engineer on a R/W compact disk with operating software that can utilize existing data for trending. Based upon the lab report the Engineer may call for additional analytical ferrography testing. The Engineer may call for the oil to be changed if pertinent lab results conclude that the oil is contaminated.

All charges for lab work, shipping, and changing of oil etc., shall be covered under routine maintenance. The Contractor shall change the oil after the above testing has been completed and its determined that the oil is contaminated. A wear particle analysis shall be conducted by the lab facility which includes: Wear Metals, Contaminants, Additives elements, Viscosity, Solid Percent Volume, Water Percent Volume, Particle Counting and Direct Reading Ferrography.

Any deficiencies found on this inspection shall have appropriate Tickets issued, and shall be repaired as part of routine maintenance. A copy of the results of the capacity test shall be submitted to the Engineer with the monthly routine submittal book.

8. Test all main circuit breakers, branch circuit breakers, and motor starters. Furnish the test set and operator along with all necessary fittings, cables, and connectors to connect the test set to the breakers. Testing shall consist of visual and electrical tests as required by the Engineer. Overcurrent relays are to be set as directed by the Engineer. Copies of test results shall be submitted to the Engineer. Prior to testing, a general cleanup of the buses and cabinets are required.
9. Flow Meter Inspection: The Contractor trained personnel shall take the meter heads out of the line and check the mechanism, note the condition of then pipe and straighten the vanes. The meter head shall be examined, cleaned, and parts replaced per manufacturer recommendations. Any deficiencies found on this inspection shall have appropriate Tickets issued. The transmitter and receiver shall be tested and calibrated by a factory certified and/or approved representative.
10. Motor Control Center: The Contractor trained personnel shall perform the following inspection:
  - i. Clean enclosure and control equipment by blowing out with low air pressure or vacuuming.
  - ii. Check and clean contacts, relays and timers and visually inspect for damage or out of adjustment parts. Remove all dust off of electrical devices and equipment.
  - iii. Check motor control center indicating lamps and all switches and push buttons.
  - iv. Circuit Breaker Maintenance:
    - Check connections.
    - Exercise breaker.
    - Check trip setting.
  - v. Motor Starter Contact Maintenance:
    - Check contacts and burnish or replace, if necessary.
    - Check coil and clean.
    - Inspect arc chute for cracks or burns.
    - Check contact pressure and measure contact resistance on all 3 phases.
  - vi. Oil Dash Pots:
    - Check oil levels.
    - Inspect settings.
    - Inspect wiring/conductors for overheating and discoloration.



- Checks sizing of motor overload heaters.
- Check tightness of wire terminations and connections.
- Check for proper labeling, provide and install missing labels.
- Check wire tags/labels, provide and install missing tags or labels.
- Check fans for proper operation and clean filters.
- Check fuse disconnects for proper operations, keep fuse clips clean and tight.
- Check fuses for proper size, and overheating.
- Test equipment ground system of the station.

11. The Contractor shall test each gas detection system. This test is to be conducted by a manufacturer approved factory trained sales and service company to test and calibrate a gas detector system as specified herein for a pumping station. The Contractor shall also keep all tanks of gas needed for testing and calibration filled at each pump house. Any time a gas detector fails it shall be replaced as routine maintenance at no additional cost to the County.

The factory trained sales and Service Company shall furnish all tools and test equipment to complete the work as specified herein. Service Company personnel shall be OSHA certified and equipped with proper safety equipment to enter areas where hazardous gases might be present. The Contractor shall provide access to the pumping station for the factory sales and Service Company and assistance in reaching any difficult locations within the pumping station.

The service company shall complete the following procedures.

- Clean all detectors and hydrophobic filters.
- Check calibration of all detectors and adjust each, if required
- Replace sensing element if calibration can no longer be properly performed. This work shall be completed at the time of testing.
- Actual alarming of the detectors and sensors to ensure reliability.
- Check gas detector internal and power supply wiring for grounds and shorts.
- Check AEGIS system for alarm acknowledgment
- Check all fans and dampers for start-up and/or shut down.

The factory trained sales and Service Company shall be Automatic Suppression Systems Inc., or Engineer approved equivalent. A written report shall be submitted to the Engineer, which shall contain any pertinent recommendations for the system. The furnished gas sensor shall be equivalent or superior in quality to the existing gas sensor and be rated and approved for its

intended use by the national FM and CSA standards. The removal and reinstallation of the sensor shall comply with manufacturer specifications.

- X. A work order report is to be completed for each corrective maintenance item reported or found in pumping station system equipment. Each report is to be initiated by a patrol person or pump station service crew member with final completion work signed off by the general foreman responsible for coordinating all Pump Station Maintenance. Copies of all initial, interim and final completion reports are to be collected, organized and forwarded to the Engineer each month. Reports initiated and/or updated during the month shall be submitted to the Engineer no later than the 5th day of the following month.

#### **Item DX-1 SPECIAL CLEANING OF WET PITS**

Under this item for a unit price per pumping station wet pit as shown in the schedule of prices, and when directed by the Engineer in writing following a determination by him for the need of cleaning, the Contractor shall clean out pumping station wet pits. This item of work shall not be confused or construed to be in conflict with Routine Maintenance which requires wet pit cleanings by the Contractor at his expense. The determination by the Engineer for the need to clean wet pits will be based upon the Contractor's inspection report, the Engineers visual inspection, and other pertinent data supporting the need for wet pit cleaning. As shown in the Schedule of Prices, it is estimated that each wet pit shall be in need of cleaning at least once during the effective period of this contract.

**Also included is providing all labor, material, traffic control, safety, transportation, vacuum equipment, furnishing water and equipment to power wash and clean CCDOTH pumping station wet pits, walls, floors, beams, grating, railings, piping, ladders, and stairs. All removed material shall be disposed of outside the County Right of Way and in accordance with the local EPA rules and regulations. Areas outside the bar screens/trash racks up to the inlet sewer shall be cleaned at the same time in accordance with Article III. This work is included with pumping station wet pit cleaning.**

**This work shall be paid for at the contract unit price per EACH for SPECIAL CLEANING OF WET PITS which shall include payment in full for all work described herein.**

#### **Item DX-2 ASPHALT DRIVEWAY PAVEMENT**

The Contractor shall furnish all required labor, materials, equipment, sawcutting and all other work necessary to construct a new twelve (12) foot wide asphalt driveway at locations as shown on the plans or as directed by the Engineer in accordance with the State of Illinois Standard Specifications for Road and Bridge Construction (SSRBC) and this special provision.

Existing pavement and soil shall be excavated to a depth of twelve (12) inches. This material will not be re-used on this project. Exposed grade will be prepared per Section 301 of the SSRBC. Aggregate Base will

consist of eight (8) inches of RAP (Reclaimed Asphalt Pavement). RAP is defined as; RAP is reclaimed asphalt pavement resulting from cold milling or crushing of an existing dense graded hot-mix asphalt pavement. RAP must originate from routes or airfields under federal, state or local jurisdiction. The Contractor shall supply documentation that the RAP meets these requirements.

Aggregate Base shall meet the requirements of Section 351 of the SSRBC.

The RAP will be primed with Bituminous Materials (Prime Coat) and overlaid with 2 ¼ Inches of Bituminous Concrete Binder Course, IL-19.0, N50 and 1 ¾ inches of Bituminous Concrete Surface Course, Mix "C", IL-12.5 or 9.5, N50. Superpave mixes will have the following mix requirements:

	<u>Surface</u>	<u>Binder</u>
AC Type	PG 64-22	PG 64-22
RAP % (max.)	10%	15%
Design Air Voids	4% @ 50	4% @ 50

The driveway shall be constructed with a ¼" to 1' transverse slope from centerline to edge.

This work shall be paid for at the contract unit price per **SQUARE YARD** for ASPHALT DRIVEWAY PAVEMENT which shall include payment in full for all work described herein. Each square yard of Asphalt Driveway Pavement or increment thereof, as approved by the Engineer, shall be counted as a unit of payment.

**Item DX-3 EXTERIOR BRICK COATING**

This item shall consist of furnishing and applying coating to exterior concrete and/or glazed brick as specified herein and designated by the Engineer per pumping station. The coating shall be a single component, moisture curing aliphatic urethane that is chemical and graffiti resistant, similar to Keeler& Long MC-ANTIGRAFFITI CLEAR or Engineer approved equivalent.

The Contractor shall furnish a paint manufacturer approved painting contractor. The painting contractor shall assure that all surfaces are clean and free from grease, dirt, wax, or concrete sealers prior to application. The painting contractor may use a brush, roller, or sprayer as long as application complies with the manufacturers' application guide. If required the paint contractor may have to apply multiple coats to obtain manufacturers' recommended thickness of 2.0 to 3.0 mils Density Functional Test (DFT).

A square foot of coating applied to a pumping station in accordance with manufacturer's specifications, complete with clean-up and approval of the Engineer, shall count as a unit for payment.

This work shall be paid at the contract unit price per **SQUARE FOOT** for EXTERIOR BRICK COATING, which shall be payment in full for the work described herein.

**Item DX-4 INFRARED THERMOGRAPHY INSPECTION SERVICE**

The Contractor shall make all arrangements to procure the services of an infrared thermography service company to inspect the pumping station electrical system as specified herein and approved by the Engineer.

The service company shall use the following equipment:

**Infrared Camera:**

1. Shall have a hi-resolution image provided by over 78,000 Platinum-Silicide detectors in a 244 x 320 pixel focal plane array.
2. Shall operate in the 3.6 to 5.0 micron wavelength.
3. Shall discern temperature differences of 0.1 degrees C @ 30 degrees C.
4. Shall detect thermal temperatures from -10 to 500 degrees C with optional filters available for temperatures up to 1500 degrees C.
5. Shall have an accuracy of temperature measurement at +/- 4 degrees C from -20 to 100 degrees C and at +/- 4% of reading at temperatures above 100 degrees C.
6. Shall have a spatial resolution of 1mrad IFOV which provides a spot size of less than 0.4 inches at 25 feet using the standard lens.
7. Shall have an IR Frame Rate of 60 Hz.
8. Shall include a personal battery belt with Lead-Calcium batteries allowing for immediate charging even if partially charged. Batteries should provide at least 4 hours of run time.
9. Shall have a system power voltage of 12 VDC.
10. Shall have a detector cooled by an internal closed-cycle Stirling cooler.
11. Shall have the following operator controls:
  - Automatic or Manual gain and level.
  - Display in either degrees C or F.
  - Remote VCR control.
  - Emissivity compensation control.
  - Background temperature compensation.
  - Peak/Temperature hold.
  - Standby mode.
  - Pen-based field computer for route management and data logging.

- Video monitor/recorder.
- Video camera.
- All necessary cabling/adapters for component connection.
- Frame grabber card.

The Contractor shall provide all labor, equipment and general services to schedule and provide all necessary incidental work at each designated pump station location to assist in conducting a comprehensive and thorough thermography inspection of various electrical systems.

The Contractor shall make arrangements to hire a specialty service company to perform the actual thermography service including the preparation and furnishing of a written report and video tape of each pump station's condition. For each designated pump station to be inspected, the Contractor shall provide all service necessary to conduct this special testing. This work shall consist of, but not be limited to, the following duties:

1. Supervise ingress and egress of each station during the presence of the specialty service company representative.
2. Store water necessary to conduct tests on all pump equipment. (This may require work on multiple days.) Maintain water level necessary for testing, not to exceed critical high water elevation. Energize and de-energize equipment under test by the specialty service company representatives.
3. Open and close all enclosures that limit direct line of sight to the electrical device being inspected.

The approved service company shall perform inspection work on the following pumping station Equipment: Motor control center, Motor controls, Motors, Motor feeder and connections, Motor contacts and relays, Switch gear, Control panels, Wiring terminations and Motor splices.

The above list is for information only. The inspection shall include all electrical devices in the pumping station System.

The Contractor shall furnish an infrared thermography report. The report shall identify all faulty devices and shall include the following parameters:

- Device (component) description.
- Fault description.
- Thermal image in color.
- Visual image.
- Fault location.
- Priority (relative degree of fault or problem).
- Temperature information (degrees F).
- Recommended actions.

**Approximately two (2) working days following the completion of all testing at each station, the Contractor shall furnish to the Engineer a completed test result summary report. Work Order Tickets shall have been initiated and cross-referenced to all items requiring corrective action as a result of the tests and evaluation.**

This item shall be paid at the contract unit price per HOUR for INFRARED THERMOGRAPHY INSPECTION SERVICE, which shall be payment in full for the work described herein.

#### **Item DX-5 HID LIGHT FIXTURE**

This item shall consist of furnishing and installing a High-Intensity Discharge(HID) light fixture complete with all necessary fittings and seals as specified herein at a designated pump station.

The fixture shall be an explosion proof; 150 W MH Multi-tap (120-208-240-277 V) and shall be rated at approximately 16,000 lumens. The high intensity discharge fixture shall come with porcelain sockets and lamp retaining mechanisms to resist loosening of the lamps from vibration or thermal effects. The HID ballasts shall be of a high power factor type whenever such type is available. The ballast shall also be incorporated into the light fixture and be suitable for starting at -20 degrees F.

An aluminum guard shall be supplied for the fixture. If necessary, the fixture shall come equipped with manufacturer specified fuses. A dome reflector (standard or 30 degree angle), coupling, bushing, frames, hangers and all special fittings shall be required to complete the installation. Lighting fixture shall be installed in accordance with manufacturer's recommendations. The fixture will be pendent, ceiling or bracket mounted and shall conform with NEC. The fixtures shall be mounted approximately 2 feet from the top of the wet pit or on the ceiling of the wet pit the exact location of the fixture will be designated by the Engineer.

**Pendent (stem mounted) fixtures shall be suspended by rigid stems such as threaded conduit or rods and ball-and-socket type hangers which are rated for the weight to be supported and which will allow the fixture to hang plumb.**

**The fixtures shall be grounded via green-insulated grounding conductor extended and connected to the fixed, grounded raceway system. The stem and hanger assembly shall not be assumed to be an adequate ground. All wiring entering the fixture housing must be suitably rated for the fixture temperature. Fixtures shall not be used for through wiring unless the wiring compartment is UL Listed for such use. The fixture shall have its own circuit breaker or fuses that will meet NEC requirements. A three-way switch shall be placed at the point of entry to the wet well and another switch in the motor room. All cored holes in concrete walls and floors shall be sealed.**

This work shall include any equipment and/or appurtenances required to complete the fixture installation.

Product data submitted for approval shall include complete manufacturer's literature and complete ballast data demonstrating compliance with all specified requirements. Submitted information shall include fixture installation items such as frames, hangers and all other appurtenant equipment.

This work shall be paid at the contract unit price **EACH** for HID LIGHT FIXTURE, which shall be payment in full for the work described herein.

**Item DX-6 SWITCH GEAR SYSTEM INSPECTION**

This item shall consist of furnishing of services and equipment to inspect the switchgear, including the circuit breakers, bus, structure, instrument transformers and other devices, at a pump station. The services shall be provided by a factory trained field service technician.

Preventative maintenance testing and inspection shall be performed according to the following inspection and test procedures.

**A. Switch Gear and Switchboard Assemblies:**

**1. Visual and Mechanical Inspection:**

- Inspect the assemblies for physical damage.
- Inspect bussing compartment. Check tightness of accessible bolted bus joints by torque wrench method. Check insulators for cracks and contamination.
- Verify all electrical, Key, and mechanical interlock Systems for correct operation.
- Make closure attempt on locked open devices. Make opening/withdrawal attempt on locked closed devices.
- Check mechanical operations of circuit breaker in cell and activate auxiliary devices.
- Check ease of operation, proper grounding and interlock.
- Inspect circuit breaker for contamination, physical damage.
- Verify all LEDs are working when the system is operating.

**2. Electrical Tests:**

- Insulation resistance of each bus section is measured phase to phase and phase to-ground.
- Electrical operation of the circuit breaker is checked in the test and connected position.
- The control power source is checked.
- The circuit breaker control scheme is tested.
- A phasing check is made on double-ended and/or emergency source switchgear at tie points to ensure correct bus phasing.

**B. Circuit Breakers:**

**1. Visual and Mechanical Inspection:**

- Check mechanical operation.
- Cell fit and element alignments are checked.
- Check bolt torque levels are in accordance with manufacturers or U.S. Standards specifications.
- Check arc chutes for foreign matter, cracks and secure installation.
- Clean primary contact surfaces and lubricate if required.

2. Electrical Tests:

- Measure contact resistance.
- Check insulation resistance at 1000 volts D.C. for one (1) minute from pole to pole and from each pole to ground and across open contacts for each phase.
- Determine minimum long-time pick-up current and delay time at 300% of pick-up by secondary injection.
- Determine short-time pick-up and time delay by secondary injection.
- Determine instantaneous pick-up current by secondary injection.
- Determine ground fault pick-up current and time delay by secondary injection.
- Trip unit reset characteristics are verified.
- Final settings are made in accordance with Engineer's prescribed settings.
- Auxiliary devices, such as under voltage relays, blown main fuses detector, shunt close, shunt trip, spring charging motor and auxiliary contacts are activated to ensure operation as applicable.
- All functions of the trip units shall be tested with test kits.

C. Metering and Instrumentation:

- Verify meter connections in accordance with single line meter and relay diagram.
- Inspect for physical damage.
- Electrical tests.
- Ammeter accuracy is checked using current injection. Voltmeter accuracy is checked.

D. Programmable Logic Controls:

- Visual and mechanical inspection.
- Inspect programmable controller installation for physical damage.
- Inspect for proper grounding.
- Check for power wiring.
- Check all terminal wiring.
- Check all I/O wiring.
- Check LI/RI wiring.
- Verify correct switch settings on all modules.



- Electrical tests.
- Inspect sequence of operation.
- Verify power supply voltages.
- Verify operation of selected I/Os.
- Verify resistance of LI/RI cable.
- Verify input voltages.
- Verify resistance of system ground.

Record of inspection and test results will be kept. A check-off list will be used, detailing work performed and results obtained. The formal report produced will list equipment as found, technical service/assistance rendered, final equipment settings and recommendations. A report copy shall be submitted to the Engineer. Each Switchgear System Inspection tested inspected and approved by the Engineer shall be counted as a unit for payment.

This work shall be paid at the contact unit price **EACH** for SWITCHGEAR SYSTEM INSPECTION, which shall be payment in full for the work described herein.

#### **Item DX-7 PUMPING UNIT ASSEMBLY REMOVAL AND REINSTALLATION**

This work shall consist of the complete removal of the complete pumping unit assembly including vertical motor and motor baseplate. The Pumping Unit will be inspected to determine the necessary repairs that are required and to verify if the pump and motor are operating at its rated design speed, pumping capacity, efficiency, voltage and amperage. The existing pumping unit is rated at 480/277V, 3 Phase, 150 horse power, 15,000 gpm vertical pump. The pumping unit is located at Pump Station No. 1.

This work will be paid for at the contract unit price **EACH** for the PUMP UNIT ASSEMBLY REMOVAL AND REINSTALLATION, which shall include the removal, testing, balancing, servicing and inspection of the pump so as to ascertain that the pumping unit is operating within its original pump head curve. This work shall include all equipment, labor and material needed to remove and reinstall the pump to complete working condition.

#### **Item DX-8 PUMP BOWL ASSEMBLY**

This work shall consist of the removal, testing and reinstallation of the Vertical Line Shaft pump bowl assembly including impeller, bearings and volute and all associated components of a 480/277V, 3 Phase, 150 horse power, 15,000 gpm vertical pump at Pump Station No. 1. The pump bowl assembly shall be inspected for bearing failure, wear on the impeller and any damage to the intake or walls of the assembly. All new components shall be of the same type as the existing.

This work will be paid for at the contract unit price **EACH** for the PUMP BOWL ASSEMBLY. This work shall include all equipment, labor and material needed to remove, test and replacement the pump bowl assembly to complete working condition.

**Item DX-9 PUMP SHAFT ASSEMBLY**

This work shall consist of the removal, testing, balancing and reinstallation of the pump shaft assembly including grease lines, bearings, shaft couplings and all associated components of a 480/277V, 3 Phase, 150 horse power, 15,000 gpm vertical pump at Pump Station No. 1. The pump shaft assembly components shall be tested for leaking hydraulic components, wear on the shaft couplings and undo wear on the pump shaft interior assembly. All replacement parts shall be of the same type as was existing.

This work will be paid for at the contract unit price **EACH** for PUMP SHAFT ASSEMBLY. This work shall include the removal, testing, servicing, balancing, replacement and reinstallation of the pump shaft assembly to complete working condition.

## **PUMPING STATIONS - Referenced Specifications**

Equipment specified herein is intended for application at Pump Station installations, either for use as part of routine repairs and replacement or as part of non-routine work including specified separately-paid work such as low flow pump installations. Although not repeated here, specifications for other items, such as rigid steel conduit, shall apply equally here.

### **1. Safety Switches:**

Safety switches shall be heavy duty type. UL listed as suitable for use as service entrance equipment and shall be in conformance with NEMA Standard KSI-1983 for type HD and with Federal Specification W-S-865c for heavy duty switches. Switches used as service entrance equipment shall have a factory-installed solid neutral and other switches shall have a factory-installed grounding kit unless otherwise indicated.

The switches shall have a quick-make, quick-break mechanism, a full cover interlock to prevent opening the cover with the switch in the closed position and a position-indicating operating handle. The operating handle shall be well insulated from the current carrying parts of the switch.

Unless otherwise indicated, switches shall be rated 600 volts, and when used with UL listed Class R fuses, shall have a UL listed short circuit withstand rating of 200,000 RMS symmetrical amperes.

Unless otherwise indicated, safety switches shall be un-fused. Where fused switches are indicated, they shall be provided complete with US Class K-5 current limiting fuses.

Unless otherwise indicated, safety switches installed below grade or exposed to the weather shall have NEMA 4 stainless steel enclosures. Safety switches installed indoors above grade shall have NEMA 12 enclosures. Safety switches in explosion-proof hazardous locations shall be in enclosures suitable for the location.

### **2. Transformers:**

Unless otherwise indicated, transformers shall be general purpose dry type, 2-winding of the capacities and voltage indicated.

Transformers 15 KVA and below shall be indoor/outdoor type and those above 15 KVA shall be indoor type unless otherwise indicated.

Unless otherwise indicated, transformers 3 KVA and above shall have not less than four 1% taps in the high voltage winding, two above and two below rated primary volts.

Transformers shall be UL listed and shall meet all applicable NEMA, ANSI, UL, and IEEE Standards.

Unless otherwise indicated, transformers shall have 220 degrees C Class insulation but shall be designed for a maximum temperature rise of 115 degrees C, over an ambient temperature of 41 degrees C.

### **3. Manual Motor Starter Switches:**

Manual motor starter switches shall be complete with melting alloy type thermal overload protection which shall be trip-free and resettable. The exact size of the overload element shall be coordinated for the specific respective motor.

The switches shall be rated not less than one horsepower at 115 and 230 volts single phase. The switches shall be single pole unless otherwise indicated.

Where indicated, the switches shall be equipped with a pilot light and/or a hand-off-automatic selector switch.

Unless otherwise indicated, the manual motor starter switches shall be equipped with NEMA 4 cast enclosure. Switches which are flush mounted shall be mounted with the flush box and shall have a suitable flush-mount plate.

4. Circuit Breakers:

This specification shall apply to all circuit breakers furnished under this Division which are not integral to panelboards or motor control center equipment.

Circuit breakers shall be UL listed, molded case, thermal-magnetic, manually operated circuit breakers of the trip ratings shown or indicated.

Unless otherwise indicated, circuit breakers shall be 3-pole.

Unless otherwise indicated, circuit breakers shall be rated for-use on 480 volt circuits.

Multi-pole circuit breakers shall have a common trip and single operating handles. Handles shall be trip free. Circuit breakers in 250 ampere frames and above shall have an adjustable magnetic trip setting.

The circuit breakers shall indicate "ON", "OFF" and "TRIPPED" conditions.

Unless otherwise indicated, circuit breakers shall have a UL listed interrupting rating of not less than 25,000 RMS symmetrical amperes at 480 volts.

Unless otherwise indicated, circuit breakers installed below grade or exposed to the weather shall have NEMA 4 stainless steel enclosures and circuit breakers installed indoors above grade shall have NEMA 12 enclosures. All circuit breakers shall have external position-indicating operating lever handles with padlock provisions.

Where indicated or where required for indicated functions, circuit breakers shall be equipped with accessories such as shunt trips, auxiliary switches, and under voltage release.

5. Motor Starters:

This specification shall apply to all motor starters which are provided under this Division.

Unless otherwise indicated, motor starters shall be of the combination type with integral motor circuit short circuit protection mounted in a common enclosure with the starter and control components for

control of circuit as indicated. Unless otherwise indicated, motor circuit short circuit protection shall be motor circuit protectors. Motor circuit protectors shall be manually operated and shall have a magnetic trip level adjustment. Trip ratings shown on the Drawings are approximate and the trip rating provided shall be as recommended by the device manufacturer for the characteristics of each respective motor. The Contractor shall coordinate device selection with motors provided under other Divisions.

Motor starters shall not be smaller than NEMA Size 1.

As a minimum, each starter shall be equipped with two normally open (NO) auxiliary contacts in addition to a starter seal-in (holding) contact. Unused contacts shall be spare.

Unless otherwise indicated, control circuits shall operate at 120 volts derived from a control transformer integral to the combination starter. The control transformer shall have a fused secondary and shall be sized adequately for the starter and all connected control devices, but in no case shall the transformer be sized less than 50 volt-amperes over the capacity required to operate the starter.

6. Control Devices:

Control devices shall be provided as part of motor starters and also for control stations remote from motor starters and as otherwise indicated.

Unless otherwise specifically indicated, push buttons, selector switches, indicating lights and other control devices shall be of the heavy duty oil tight type.

Contact blocks for push buttons and selector switches shall have not less than one double pole double throw (DPDT) contact.

Indicating lights shall have built-in transformers, 6-volt miniature bayonet base incandescent lamps and lenses of the colors indicated. Unless otherwise indicated, indicating lights shall be push-to-test type.

Legend plates shall be provided on all oil tight control devices. Unless otherwise indicated, green indicating lights shall have "RUNNING" legend plates and legend plates for other indicating lights shall be as indicated or as selected by the Engineer.

Unless otherwise indicated, enclosures for control stations (control devices which are remote from motor starters or other equipment) which are located below grade or exposed to the weather shall be NEMA 4 stainless steel and enclosures for control stations located indoors above grade shall be NEMA 12.

7. Float Control System:

The float control System shall include floats, interconnecting integral cable of a length required and control logic for the functions indicated. Except as otherwise indicated, float control systems shall conform to the specifications elsewhere herein for float switch installation.

Floats shall consist of mechanically activated micro-switches sealed in durable ABS outer shell with integral chlorinated polyethylene (CPE) cable.

The system shall be intrinsically safe for installation in the wet well.

The system shall be complete with control logic to produce the contact control and alarm functions indicated or furnished by the Engineer.

Float control systems furnished as part of separately paid float pumps shall be equipped with 2 control points via individual floats.

The system shall be complete with all required mounting hardware and accessories.

The float system shall be complete with mounting arrangement with a stilling well of adequate size, or by other means approved by the Engineer, to forestall the attachment of large sections of ice to the floats during cold weather which could then disturb the system mounting. The mounting arrangement shall permit easy removal of the floats and easy realignment when replaced. Submit details for approval by the Engineer prior to installation.

8. Meters And Instruments:

Meters and instruments applied to mains or panels as a whole, such as ammeters and voltmeters shall be switchboard type, black on white, approximately 4.5 inches square with 1% accuracy zero adjustment and 250 degree scales. Where scale ranges are not indicated, scales shall be selected such that full scale is adequate for the range of readings possible and nominal expected readings will be at roughly half of full scale.

Ammeters for individual compartments shall be nominally 2.5 inches square or round, analog meters with accuracy of 2% or better, with scale ranges matched to the starter current. Damping shall be appropriate for current. Where indicated, ammeters shall be of the meter relay type with at least one adjustable set point. Meter cases shall be compatible with motor control center construction specified.

Meter and instrument transfer switches shall be instrument-grade, multi-position, control switches having pistol-grip handles. Voltmeter selector switches shall be 7-position. Ammeter selector switches shall be 4-position. All switches shall have an off position.

Elapsed time meters shall be approximately 2.5 inches square or round with suitable flush mounting flange, reading in hours and tenths of hours. The meters shall be non-reset type.

Potential transformers and current transformers for meters and instruments shall be fully compatible with associated instrument scales and accuracy. When no other indication is given, 3 potential transformers shall apply for voltage metering. A single phase current transformer may be used for individual starter compartment ammeters, with the output also suitable for a connection as a single input to the telemetry system.

Control relays shall be hermetically sealed, with convertible, high reliability contacts rates not less than 5 amperes resistive.

Synchronous motor driven, time delay relays shall have a nominal 4 inch square face, shall be "on-delay" or "off-delay" as indicated and shall be of the range indicated. They shall be suitable for flush panel mounting. Each relay shall plug into a permanently wired molded case assembly. Time shall be set by turning a knob with a pointer on the face of the relay. The relay shall have a cycle progress pointer which will advance clockwise from the setting back to zero during timing. The relays shall have instantaneous and delayed contacts as required for the functions indicated. Unless otherwise indicated, the relays shall be for 120-volt operation.

Solid state time delay relays shall be "on-delay" or "off-delay" as indicated or may be of the convertible operation type. The relays shall have the dial range indicated and shall be complete with a permanently wired plug-in base. Where indicated, they shall be suitable for flush panel mounting, and shall then be complete with cycle progress pointer. When not indicated as being for flush panel mounting, the relays shall be suitable for internal mounting and they shall then be equipped with retaining clips to keep them secure in their plug-in sockets. They shall have contacts, as required, for the functions indicated. Unless otherwise indicated, the relays shall be for 120-volt operation.

9. Wiring Identification:

All wiring shall be identified by means of color coding and wire markers as specified herein. Circuit identification shall include all color coding requirements of the NEC, with particular attention directed to Article 210-5.

All wiring shall be tagged with self-sticking wire markers or other markers approved by the Engineer. The tagging shall be applied at each termination and splice. The tagging shall also be applied at other locations, where indicated on the Drawings. Designations shall include the full circuit and wire designation except for terminations at a panel for which the panel portion of the circuit designation may be omitted. Markers shall be permanent, of a size recommended by the manufacturer for the respective wire size and shall be applied as recommended by the manufacturer.

Unless specifically approved by the Engineer, color coding of neutral and ground wires shall be by means of colored insulation, except where bare ground wires are indicated.

Branch circuit wiring smaller than No. 6, from panelboards, for lighting, receptacles and similar loads shall be color coded by means of colored wire insulation. Colors shall be as selected by the

Contractor but a sufficient number of colors shall be used such that wiring in common enclosures is clearly differentiated and color combinations of wiring runs are generally not repeated. Care shall be taken in the phasing of combined-neutral circuit runs. Switched legs shall be differentiated from un-switched legs of a circuit.

Control circuit wiring shall be color coded by means of colored wire insulation as follows:

"line": black

neutral: white

ground: green

others: red, or as otherwise indicated on the drawings.

Except as otherwise specified herein, wire color coding may be by means of colored insulation or colored tape, applied at each termination, splice and pull box.

10. Rigid Steel Conduit:

Rigid steel conduit shall be manufactured to conform to Federal Specification WWC-581, NEC Article 344, ANSI Specification 680.1 and UL labeled.

All surfaces, including factory-made threads shall be protected from corrosion by hot-dip or electro-galvanizing after threading. Factory threads shall be protected by plastic end caps.

11. Flexible Metal Conduit:

Flexible metal conduit shall be liquid-tight flexible metal conduit as defined by NEC Article 348 and shall be UL listed for wet location use.

Flexible metal conduit shall have nylon insulated throats.

Sizes through 1-1/4 inch shall have a built-in copper grounding conductor, UL listed as such.

12. Rigid Nonmetallic Conduit:

Rigid nonmetallic conduit shall be manufactured to conform to Federal Specification WC-1094A, NEMA specification TC-2 and NEC Article 352 and shall be UL listed for exposed, encased and underground applications.

The conduit shall be "Schedule 40" with minimum wall thickness as follows:



Nominal Diameter		Minimum Wall	
mm	Inches	mm	Inches
25.4	1	3.38	.133
31.8	1-1/4	3.56	.140
38.1	1.5	3.68	.145
50.8	2	3.91	.154
63.5	2.5	5.16	.203
76.2	3	5.49	.216
88.9	3.5	5.74	.226
101.6	4	6.02	.237
127.0	5	6.55	.258

### 13. Conduit Fittings:

Conduit couplings, elbows and nipples shall conform to the fittings specifications corresponding to their respective conduit specifications.

Locknuts, bushings, reducers, conduit plugs and similar fittings shall be galvanized or cadmium plated and shall conform to Federal Specification W-F-408.

Conduit bodies, such as used for pulling fittings or for avoiding sharp bends shall be hot dip galvanized and shall be complete with covers having self-retaining screws. Unless otherwise indicated, conduit bodies shall be cast iron alloy or malleable iron with gaskets and matching cast metal or malleable iron covers.

Insulated bushings shall be malleable iron or steel complete with plastic inserts or shall be high impact resistance plastic. They shall be UL listed with a rating not less than 150 degrees C, and they shall be equipped with ground lugs where required.

Conduit hubs which are not integral to a box or fitting shall be malleable iron or stainless steel and shall have nylon insulated throats, neoprene o-rings, and shall be positively grounded and watertight.

### 14. Pull Boxes:

Boxes shall be cast boxes or sheet steel boxes as indicated or specified. Each box shall be complete with a cover of the same type and material as the box except that flush-mounted sheet steel boxes for switches and receptacles shall have Type 302 satin finish stainless steel plates. Boxes shall be hot-dip galvanized. Sizes of boxes shall not be less than shown on the Drawings, and shall otherwise

conform to NEC requirements as a minimum except that boxes shall not be less than 4-inches square by 2 inches deep.

15. Cast Boxes:

Cast metal boxes shall be gray iron alloy free from defects such as voids and shrinkage cracks, complete with covers having neoprene gaskets. Cast aluminum boxes shall not be used.

16. Raceway Installation:

Except where otherwise indicated or specified, raceways shall be rigid steel conduit.

No conduit smaller than 3/4 inch diameter trade size shall be used, unless specifically indicated. Wherever no conduit size is shown on the Drawings, the conduit size shall be taken to be 3/4 inch diameter.

Conduit runs shall have no more than 270 degrees of bends (the equivalent of three 90 degree bends) between pull points. Bends may be either factory-made bends or field bends using suitable bending apparatus.

Wherever possible, conduits shall be installed with a slight pitch to drain to the nearest box or fitting.

Threaded raceway joints shall be made with a conductive compound applied to the male threads. Threads shall be made to avoid butting and to avoid exposed threads. In no case will running threads be allowed.

Conduit reducers shall be provided as required for conduit terminations at equipment.

Myer's hub or equivalent type as specified by the Engineer shall be used for all conduits terminating into the junction box.

17. Flexible Conduit:

Unless otherwise indicated all flexible conduit shall be liquid-tight flexible metal conduit as specified herein.

Flexible conduit shall be used for raceway terminations where vibration will be present, such as at motors, limit switches, electric damper motors, solenoid valves and the like and the length of these flexible conduit terminations shall not exceed 3 feet.

All fittings used with flexible conduit shall be suitable for the conduit in conformance with the conduit manufacturer's requirements.

Flexible conduits larger than 1-1/4 inch trade size shall be installed complete with suitable terminating fittings at each end.

18. Wire And Cable:

The terms wire and cable as used herein and in the Drawings shall be interchangeable and shall refer to electric wire and cable conductors in conformance with the NEC.

Unless otherwise indicated, all wire and cable shall be insulated conductors as defined by the NEC.

Wire and cable shall be UL listed, new, and delivered to the site in full reels or boxes. The reels or boxes shall have tags or imprint showing the UL listing.

No wire size smaller than No. 12 shall be used unless specifically indicated.

19. Conductors:

Unless otherwise specifically indicated all wire and cable shall have copper conductors conforming to ASTM B-3 or ASTM B-8 with Class B stranding.

Conductors which are No. 8 and larger shall be stranded. Conductors smaller than No. 8 may be solid or stranded.

Conductors sized No. 8 and larger shall be coated in accordance with ASTM B-33 or B-189.

20. Insulation:

Wire and cable insulation shall be suitable for the conditions of the installation and the voltage of the respective system and, unless otherwise specifically specified, all wire and cable for system operating at 480 volts or less shall be insulated for 600 volts AC and shall be rated at not less than 90 degrees C dry and 75 degrees wet.

All 600-volt wire and cable sized No. 8 and larger shall be UL listed as Type USE and RHH and RHW, VW-1, with insulation of heat and moisture ethylene-propylene rubber (EPR) resistant compound.

All 600-volt wire and cable smaller than No. 8 shall be UL Listed as Type THW or THWN, with insulation of heat and moisture resistant polyvinyl chloride (PVC) thermoplastic and a nylon jacket or Type XHHW with insulation of cross-linked polyethylene compound, except that all such writing on the project shall be of the same type.

21. Wire And Cable Installation:

Wires and cables shall be carefully installed to avoid damage to insulation and cable jackets.

Wire lubricant shall be used when pulling wires into conduits. The lubricant shall be non-injurious to conduits, conductors, insulations or jackets and the lubricant shall be UL listed. Documentation shall be submitted to confirm suitability of the lubricant for the cables used on the project. Each run of cable shall have sufficient slack. Where a number of wires are trained through a box, manhole or handhole, they shall be grouped by circuit where applicable and bundled using appropriate cable ties and supported to minimize pressure or strain on cable insulation. Wire and cable shall not be bent to a radius less than the manufacturer's recommended bending radius, either in permanent placement or during installation. Cable pulling apparatus shall have no sharp edges or protrusions which could damage cables or raceways.

22. Piping And Appurtenances:

The work specified herein includes furnishing and installing all piping and accessories required for a complete and satisfactorily working installation as shown on the drawings and as specified herein.

All piping shall be generally arranged and aligned in accordance with the proposed drawings prepared by the Contractor and as specified. Where special conditions are encountered in the field, the arrangement and alignment of piping shall be as directed by the Engineer.

Piping shall be installed as directly as possible between connecting points insofar as the work of other trades permit. Where interference occurs with another trade whose work is more difficult to reroute, the Contractor shall revise the routing as required to avoid subject interferences. Piping shall be carefully installed to provide for proper alignment, slope and expansion.

To allow for expansion and contraction, pipe shall be guided and supported in such manner that pipe lines shall not creep, sag or buckle. Anchors and supports shall be provided wherever necessary to prevent any misalignment of piping. Pipe support shall not be limited to support indicated on the drawings.

For underground piping, where changes in direction occur and wherever else required, piping shall be anchored to prevent blowouts or creep from either exterior or interior stresses at pipe joints. Allowance shall be made whenever necessary for any future settlement of pipe lines to insure the required pitch and avoid pocketing.

Small tubing to gauges, controls, or other equipment, installed on any apparatus shall not be coiled nor excessive in length but shall be installed neatly, carefully, bent at all changes in direction, secured in place and properly fastened to equipment at intervals to prevent sagging.

Prior to the start of any piping installation work, the Contractor shall prepare, and submit for approval by the Engineer, detailed piping installation drawings. These shall be prepared on the basis of actual equipment being furnished on actual dimensions of walls openings and other significant elements.

23. Steel Pipe:

Steel pipe shall be Schedule 40, black or galvanized as indicated on the Drawings or as specified elsewhere in the specifications. Steel pipe shall be subject to the requirements of the applicable portions of the latest editions of the following standards:

- A. A53 Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
- B. ASTM A120 Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated (Galvanized) Welded and Seamless for Ordinary Uses.
- C. A120 Specification for pipe, steel, black and hot-dipped zinc-coated (galvanized) welded or seamless for ordinary uses.

Steel pipe shall have flanged ends when indicated on the Drawings. Flanges for steel pipe shall be of weld neck or slip-on type. Flanges of the slip-on type shall be installed with the pipe set back from the face of the flange and the flange welded to the pipe in both front and back.

Unless otherwise indicated, flanged steel pipe shall be made up with cast iron fittings.

24. Ductile Iron Fittings:

Ductile iron fittings shall be provided as indicated on the Drawings and specified herein. Ductile iron fittings shall be subject to the requirements of the applicable portions of the latest editions of the following standard: A21.10 Ductile Iron Fittings 3-in. through 4 feet for Water and Other Liquids.

25. Flanged Connections:

Flanged connections shall be made as indicated on the proposed Drawings prepared by the Contractors and as specified herein. All flanges shall be drilled in conformance with the 125/150 ANSI Standard template.

Class 150 pound steel flanges shall be smoothed finished (flat faced) for connection to dissimilar metals such as cast iron.

Flanged connections shall be assembled with full face rubber gaskets using ASTM A307, Grade B hexhead machine bolts.

26. Wall Castings:

Cast iron wall castings shall be furnished and installed for all storm water piping passing through walls, as shown on the drawings.

Wall castings shall be flanged at both ends with flanges to fit flush to surface. Flanged ends shall be tapped for studs with drilling to conform to the American Cast Iron Flange Standard, Classes 125(B16.1).

All wall castings shall be furnished and installed with centrally located intermediate wall collars to provide watertight construction by increasing resistance to seepage. Wall castings to be set in the form with the bolt holes in the flanges straddling the center lines both horizontally and vertically.

27. Wall Sleeves:

Wall sleeves shall be cast iron and schedule 40 galvanized steel pipe as called for on the drawings. Sleeves shall be sealed with modular type wall seals.

28. Wall Opening:

The Contractor shall determine the required inside diameter of each individual wall opening or sleeve before opening shall be sized as recommended by the manufacturer to fit the pipe and Link-Seal to assure water-tight joint.

29. Sleeve Couplings:

Sleeve type couplings for steel pipe shall be dresser type with center stop removed or approved equal.

30. Flap Valves (Flap Gates)

The Flap Valve, size as indicated in the pay item, shall be flange-framed with a resilient seat. It shall be specifically designed for pump discharge service.

The body shall be cast-iron ASTM A126-B. The flange shall be faced and drilled 125 lbs, standard for all pipe flange mounting.

A resilient seal, neoprene on Buna-N shall be bonded in a groove machined in the body to provide a wide contact surface for the seat machined in the cover.

The cover, or flap, shall be cast-iron, ASTM A-126-B with spherically dished design to withstand maximum operating loads. Severe pump discharge may require high-test cast-iron, ASTM A126-C, or ductile iron, ASTM A536 for the cover as recommended by the manufacturer.

The hinge arms shall be high-tensile bronze ASTM B584-CA865. The hinge pins, designed in double shear, shall be silicon bronze, ASTM 898-CA655 or Type 304 stainless steel. Each hinge arm shall have two pivot points, and adjustable lower pivot with limited rotation and a threaded upper hinge post to adjust flap valve sensitivity. A lubrication fitting shall be supplied for each pivot.

An anti-locking bar, between the hinge arms, shall be provided to prevent excessive rotation about the lower hinge pin.

A steel leaf spring attached to the body and extended over the cover shall be provided to safely limit the travel of the cover during "pump discharge" operation. A rubber pad shall be provided at the spring to cover the contact point.

**Item EX-1 REGULAR WORK SPECIAL**

Under this pay item regular work that is deemed necessary by the Engineer for the improvement, correction, or addition to the Traffic Signal Installations and Systems, Lighting Systems, Navigation Lighting Systems, Cathodic Protection Systems, Pumping Stations, Maintenance Facilities Electrical Systems or their appurtenances not covered by items AX, AY, AZ, BU, BW, BX, BY, BZ, CX, CY, CZ, DX, FX and GX shall be paid for in accordance with Article 109.04 of the State Standard Specifications and billed by special invoice and shall not be considered as regular work under Article II Item 10 of these Special Provisions.

Each billing shall be broken down as to labor cost, material cost, and equipment cost, not counting transportation for workers and equipment used in routine maintenance as set forth in Article 109.04. The total cost of regular work special during the effective period of this Contract shall not exceed the **UNIT** price as shown in the Schedule of Prices.

All work to be performed under this item shall be issued an authorization number which number is to be indicated on the billing.

**Item EX-2 LABOR TO UPGRADE ALL ELECTRICAL SYSTEMS EXCEPT THOSE IN THE MAINTENANCE FACILITIES**

Under this item for a unit price per **HOUR** as shown in the schedule of prices, and when directed by the Engineer in writing following a determination by him of the need for the Regular Work Special, the Contractor shall provide labor to upgrade all electrical systems except those paid for under Item EX-1. This item shall include all benefits and transportation for the person.

**Item F-1 MAINTENANCE FACILITIES ELECTRICAL SYSTEMS ROUTINE MAINTENANCE**

Under this item, the Contractor shall service and maintain the existing maintenance facilities No. 1,2,4 and 5 electrical systems, including alarm systems, video monitoring and security systems and any new electrical systems that may be installed or taken over for maintenance by the Department during the period of this Contract. The contractor shall service and maintain the maintenance facility no. 3 salt dome electrical systems including ventilation system and any new electrical systems that may be installed or taken over for maintenance by the Department during the period of this Contract. At maintenance facility no. 3, keep the calcium chloride system in proper working condition at all times. Replacement of the pump will be considered regular work.

- A. Patrol and inspect the maintenance facility electrical systems and check each system for proper operation once every two (2) weeks. The patrol person shall report to the District Engineer or his designated representative upon arrival to receive a list of items that are in a state of disrepair. The Contractor, upon notification by the District Engineer or other qualified individual, shall dispatch personnel to the location immediately, and effect emergency repairs or perform such operations that will restore the maintenance facility to normal operating condition.
- B. Keep electrical systems in proper working condition and equipment cabinets clean. Branch circuit breakers and their associated wire and conduit will be replaced by the Contractor as part of routine



maintenance and all other breakers, motor starters and contactors shall be considered as regular work and shall be in accordance with Article II upon the authorization of the Engineer.

- C. Replace any defective wall switches, receptacles, and lighting outages, including ballasts, damaged by any cause whatsoever. Any cable, wire or conduit that is damaged or defective will be repaired by the Contractor and shall be considered as routine maintenance.
- D. Check the emergency electric generator, its prime mover, control panel and transfer switch for proper operation once every two weeks. All oil reservoirs and battery acid levels shall be checked and filled within the levels recommended by the manufacturer. All filters and oils shall be changed in accordance with the manufacturer's specifications or a minimum of two (2) times a year, whichever is shorter. The Contractor shall also exercise the emergency electric generator for the length of time (minimum of 30 minutes) and at the interval recommended by the manufacturer. This exercise shall be done under load at least once each month. Any repairs needed to the emergency electric generator, its prime mover, control panel and transfer switch shall be considered as regular work and shall be in accordance with Article II upon the authorization of the Engineer. Once a year have a qualified approved generator maintenance/repair company to evaluate each generator.
- E. At the beginning of the Contract, the Contractor shall, under routine maintenance organize log books in each Maintenance Facility as described herein. Maintain Maintenance Facility electrical system log books as instructed by the Engineer and perform operations as stated. The log books shall not be revised or removed from the Maintenance Facility. Copies of all entries to the log books are to be emailed to the Department's downtown office after being entered.
- F. Keep heating, ventilating, calcium chloride and other electrical equipment properly energized at all times. Repair of this equipment is to be done by others.
- G. Report to the Engineer as soon as detected, all components including driving motors and control equipment, which are damaged or inoperative. Replace or repair all defective components regardless of cause. All work performed under this item shall be considered as regular work and shall be in accordance with Article II upon the authorization of the Engineer.
- H. Rebuild completely, as selected by the Engineer, any part of the electrical systems during the term of this Contract. The work shall include refurbishment or replacement of all parts of the selected system and any necessary auxiliary equipment. All work associated with and including scheduling shall meet with the approval of the Engineer. All work performed under this item shall be considered as regular work and shall be in accordance with Article II upon authorization of the Engineer. Keep the calcium chloride system in proper working condition at all times. Replacement of the pump will be considered regular work.
- I. Report to the Engineer by the fastest means of communication:
  - I.-1. any work authorized or unauthorized being performed by others affecting the system,
  - I.-2. any other work in progress which may come to his attention and which may endanger or damage any installation of the system,

- I-3. any emergency temporary repairs which may cause the Contractor to make temporary major changes in the system.
- J. Respond to all emergency calls by the Engineer within one (1) hour, and all calls by the Engineer to supervise additional installations by others, or to locate underground cables or any other components of the system to prevent damage by any proposed construction.
- K. Obtain approval from the Engineer before beginning work on permanent repairs to the system or any parts thereof, and recommend to the Engineer any change.
- L. Keep records of repairs and services to all systems or equipment and keep them available to the Engineer.
- M. Once every month test each emergency light and emergency exit light for a minimum of 15 minutes or until the battery is totally discharged. The lamps, batteries and chargers are considered part of routine maintenance.
- N. All fluorescent and HID lamps must be taken to a certified processing facility meeting EPA Standards. A receipt shall be furnished to the County showing that the lamps have been disposed of properly. The lamps shall be taken to Fluorecycle, Inc. (815-363-4411) or to another EPA and County approved lamp recycling center.
- O. The Contractor shall maintain all existing alarm systems, both fire and burglar, including any new ones, located in Districts 1,2, 4 and 5. Once a year, in January, all alarms in Districts 1, 2, 4, and 5 are to be tested and a report sent to the Engineer by January 31 of the current year. The alarms in District 3 shall be tested in December of the current year and to be coordinated with the Village of LaGrange Park Fire Department. All deficiencies found under this item shall be considered as regular work and shall be in accordance with Article II upon authorization of the Engineer.
- P. All burglar alarm systems and fire alarm systems at District 1, 2, 4 and 5 are to be monitored by the Contractor. This monitoring shall be done by the Contractor or by a third party source approved by the County. After an alarm is received a determination is to be made if the alarm is false or if the call should be forwarded to the appropriate police department. The Contractor will be liable for all fines caused by excess false alarms which cause the County to be fined by the Local Agency. Each month a report is to be sent to the Engineer by email of all alarms received and disposition of each alarm. The Contractor is to make all arrangements to have this work done before the start of the Contract.
- Q. The Contractor shall make arrangements with the District Engineer of each District to have an operational test of the Calcium Chloride dispensing system in October before the first snowfall. The Contractor is to prepare a report of the test listing any deficiencies found and email it to the Engineer and furnish a copy to the District Engineer so that repairs can be made. The Contractor is only responsible under routine maintenance to keep power provided up to the pump motor and control panel unless request otherwise..
- R. The Contractor shall inspect the service entrance and feeder panels at the Maintenance Districts, during mid-September to mid-October. The log sheet shall be completed and submitted to the Engineer. Tickets shall be created for any deficiencies found.

Inspection procedure is as follows:

- Clean enclosure and control equipment by blowing out with low air pressure or vacuuming.
- Check and clean contacts, relays and timers and visually inspect for damage or out of adjustment parts. Remove all dust off of electrical devices and equipment.
- Circuit breaker maintenance:
  - Check connections.
  - Exercise breaker.
  - Check trip setting.
- Inspect wiring/conductors for overheating and discoloration.
- Check tightness of wire terminations and connections.
- Check for proper labeling, provide and install missing labels.
- Check wire tags/labels, provide and install missing tags or labels.
- Check fuse disconnects for proper operations, keep fuse clips clean and tight.
- Check fuses for proper size.
- Test equipment ground system.

#### **Item FX-1 LABOR TO UPGRADE ELECTRICAL SYSTEMS**

Under this item for a unit price per **HOUR** for **LABOR TO UPGRADE ELECTRICAL SYSTEMS** as shown in the schedule of prices, and when directed by the Engineer in writing following a determination by him for the need of upgrading, the Contractor shall provide labor to upgrade electrical systems. All materials needed for the upgrade shall be paid for as regular work under Article II. This item shall include all benefits and transportation for the person.

#### **Item FX-2 THERMO GRAPHIC INSPECTION**

Description. This work shall consist of furnishing equipment, materials and labor for a thermo graphic inspection of electrical systems, including the main service entrance panel, and sub panels at the maintenance facility, as specified by the Engineer. The testing must be performed by a qualified company, with prior experience in such type of testing, and shall be approved by the Engineer. An inspection report, including thermo graphs of the equipment tested and deficiencies noted, shall be furnished.

Method of Measurement. Each inspection that is completed, and report submitted and approved by the Engineer, shall be counted as unit for payment.

Basis of Payment. This work shall be paid at the Contract unit price **EACH**, for **THERMO GRAPHIC INSPECTION** of the facility specified, which shall be payment in full for the work as described herein.

**ITEM GX      GENERAL SPECIALTY ITEMS TO BE USED ON ALL TYPES OF REGULAR WORK:**

Under this item, for unit price per installation as shown in the Schedule of Prices and when directed by the Engineer, shall furnish all materials, equipment, and labor to perform the work as specified. All materials of work not expressly specified but necessary for the proper completion in a neat, workmanlike manner shall be included under the unit bid price and shall use the following Standards: 720001-01, 720016-03, 805001-01, 814001-03, 814006-02, 857001-01, 857006-01, 862001-01, 873001-02, 876001-03, 877001-05, 877002-02, 877006-04, 877011-05, 877012-02, 878001-10, 880001-01, 880006-01, 886001-01, County Traffic Signal Work Special Provisions, Standard Specifications for Road and Bridge Construction and IDOT District One STANDARD TRAFFIC SIGNAL DESIGN DETAILS or latest revision of each except as stated in each following pay items.

**Item GX-1 THRU GX-8      UNDERGROUND CONDUIT, GALVANIZED STEEL OF THE SIZE AND TYPE AS SHOWN IN THE SCHEDULE OF PRICES**

**Item GX-9 THRU GX-14      UNDERGROUND CONDUIT, P.V.C. OF THE SIZE AS SHOWN IN THE SCHEDULE OF PRICES**

**Item GX-15                  COILABLE NON-METALLIC CONDUIT**

The furnishing and installation of conduit and/or unit duct shall meet Section 810 of the Standard Specifications and the Cook County Special Provisions.

This work will be paid for at the contract unit price per **FOOT** for UNDERGROUND CONDUIT, COILABLE NON-METALLIC CONDUIT, of the type and size specified, which price shall be payment in full for furnishing and installing the conduit and/or unit duct and fittings complete.

**Item GX-16      REMOVE ELECTRIC CABLE FROM CONDUIT**

This item shall consist of removing electric cable from an existing conduit at a location as directed by the Engineer and shall meet Section 895 of the Standard Specifications.

This work will be paid for at the contract unit price per **FOOT** for REMOVE ELECTRIC CABLE FROM CONDUIT which price shall be payment in full for removing and disposing of the cable from conduit.

**Item GX-17      SERVICE INSTALLATION, POLE MOUNTED**

**Item GX-18      SERVICE INSTALLATION, GROUND MOUNTED**

**Item GX-19      COMBINATION LIGHTING AND TRAFFIC SIGNAL SERVICE INSTALLATION, POLE MOUNTED**

**Item GX-20      RELOCATE SERVICE INSTALLATION**

The installation of a service installation shall meet the requirements of Section 805 of the Standard Specifications and the Cook County Special Provisions.

This work will be paid for at the contract unit price **EACH** for SERVICE INSTALLATION, POLE MOUNTED, SERVICE INSTALLATION, GROUND MOUNTED, COMBINATION LIGHTING AND TRAFFIC SIGNAL SERVICE INSTALLATION, POLE MOUNTED, or RELOCATE SERVICE INSTALLATION which price shall be payment in full for furnishing and installing the service installation complete. Any charges by the utility company to provide electrical service will be paid for in accordance with Article 109.05 of the Standard Specifications.

**Item GX-21 HANDHOLE**

**Item GX-22 HEAVY DUTY HANDHOLE**

**Item GX-23 DOUBLE HANDHOLE**

The installation of a handhole shall meet the requirements of Section 814 of the Standard Specifications and the Cook County Special Provisions.

This work will be paid for at the contract unit price **EACH** for HANDHOLE, HEAVY DUTY HANDHOLE, or DOUBLE HANDHOLE which price shall be payment in full for all necessary excavating, backfilling, disposal of unsuitable materials, and furnishing all materials within the limits of the handhole.

**Item GX-24 REBUILD EXISTING HANDHOLE**

The furnishing and installation of conduit and/or coilable non-metallic conduit shall meet the Cook County Special Provisions of "Rebuild Existing Handhole, Heavy-Duty Handhole, Double Handhole" and "City Electric Manholes To Be Adjusted."

This work will be paid for at the contract unit price **EACH** to REBUILD EXISTING HANDHOLE which price shall be payment in full for all labor, all materials, and equipment necessary to complete the work described above and as indicated in the Plans.

**ITEM GX-25 REMOVE EXISTING CONCRETE FOUNDATION**

The removal of an existing concrete foundation shall meet the requirements of Section 895 of the Standard Specifications.

The removal of a concrete foundation four (4) feet or less in depth below grade shall be removed completely and disposed of outside the right-of-way. A concrete foundation greater than four (4) in depth shall have the first four (4) feet below grade removed and disposed of outside the right-of-way.

The area where the foundation has been removed shall be backfilled and restored to meet the existing grade and terrain.

This work shall be paid for at the contract unit price **EACH** to REMOVE EXISTING CONCRETE FOUNDATION, which price shall include all labor material and equipment necessary to complete the work in place, as specified herein and as directed by the Engineer.

**Item GX-26 REMOVE EXISTING HANDHOLE**

The removal of an existing concrete handhole shall meet the requirements of Section 895 of the Standard Specifications.

The concrete handhole shall be removed completely and disposed of outside the right of way. The area where the handhole has been removed shall be backfilled and restored to meet the existing grade and terrain.

This work shall be paid for at the contract unit price **EACH** to REMOVE EXISTING HANDHOLE which price shall include all labor, material and equipment necessary to complete the work in place, as specified herein and as directed by the Engineer.

**Item GX-27 DRILL EXISTING HANDHOLE**

This item shall conform to Section 879 of the Standard Specifications.

This work shall be paid for at the contract unit price **EACH** to DRILL EXISTING HANDHOLE , which price shall include all labor, material and equipment necessary to complete the work in place, as specified herein and as directed by the Engineer.

**Item GX-28 MEDIAN REMOVAL AND REPLACEMENT**

This work consists of removing and replacing existing concrete median at locations shown on the plans or when directed by the Engineer, in accordance with the applicable requirements of Sections 440 of the Standard Specifications and the Cook County Special Provisions.

This work shall be paid for at the contract unit price per **SQUARE FOOT** for MEDIAN REMOVAL AND REPLACEMENT, which price shall include all labor material and equipment necessary to complete the work in place, as specified herein and as directed by the Engineer.

**Item GX-29 SIDEWALK REMOVAL AND REPLACEMENT**

This work consists of removing and replacing existing concrete sidewalk at locations shown on the plans or when directed by the Engineer, in accordance with the applicable requirements of Sections 440 and 424 of the Standard Specifications and the Cook County Special Provisions. The replaced sidewalk shall be similar in design to that which is existing.

This work shall be paid for at the contract unit price per **SQUARE FOOT** for **SIDEWALK REMOVAL AND REPLACEMENT**, which price shall include all labor material and equipment necessary to complete the work in place, as specified herein and as directed by the Engineer.

**Item GX-30 ROD AND CLEAN EXISTING CONDUIT**

Description:

This work shall consist of inserting a duct rod or electrical fish rod or tape of sufficient length and rigidity into an electrical conduit opening in one electrical handhole, and pushing the said rod through the conduit to emerge at the next or subsequent handhole in the conduit system at the location(s) shown on the plans. The duct rod may be inserted and removed by any standard construction method which causes no damage to the conduit. The size of the conduit may vary, but there shall be no differentiation in cost for the size of the conduit.

The conduit which is to be rodded and cleaned may exist with various amounts of standing water in the handholes to drain the conduit and to afford compatible working conditions for the installation of the duct rods and/or cables. Pumping of handholes shall be incidental to the work of rodding and cleaning of the conduit.

Any handhole which, in the opinion of the Engineer contains excessive debris, dirt or other materials to the extent that conduit rodding and cleaning is not feasible, shall be cleaned at the Engineer's order and payment approval as a separate pay item.

Prior to removal of the duct rod, a duct cleaning attachment such as a properly sized wire brush or cleaning mandrel shall be attached to the duct rod, which by removal of the duct rod shall be pulled through the conduit to remove sand, grit, or other light obstructions from the duct to provide a clean, clear passage for the installation of cable. Whenever the installation of cables is not performed as an adjunct to or immediately following the cleaning of the duct, a light weight pulling line such as a 1/8" polyethylene line or conduit measuring tape shall be placed and shall remain in the conduit to facilitate future work. When great difficulty of either inserting the duct rod or removal of the cleaning mandrel is encountered, the duct may require further cleaning by use of a compressed air gun, or a low pressure water hose. In the case of a broken conduit, the conduit must be excavated and repaired. The existence and location of breaks in the conduit may be determined by rodding, but the excavation and repair work required will be paid for separately.

This work shall be measured per lineal foot for each conduit cleaned. Measurements shall be made from point to point horizontally. No vertical rises shall count in the measurement.

This work shall be paid for at the contract unit price per lineal **FOOT** for **ROD AND CLEAN EXISTING CONDUIT** for the installation of new electric cables in existing conduits. Such price shall include the furnishing of all necessary tools, equipment, and materials required to prepare a conduit for the installation of cable.

**IV CCDOTH MAINTENANCE LIST (As of April 1, 2016 )**

TYPE	DESCRIPTION
A-1	Traffic Signal Installation
A-2	Temporary Traffic Signal Installation
A-3	Flashing Beacon Installation – Overhead
A-4	Flashing Beacon Installation - Post Mounted
A-5	Solar Flashing Beacon Installation - Post Mounted
A-6	Rectangular Rapid Flashing Beacon
A-7	Speed Sign Installation
A-8	Advanced Railroad Warning System.
A-9	Closed Loop System Monitoring
B-1	LIGHTING UNIT, LESS THAN 38 FEET
B-2	LIGHTING UNIT, MORE THAN 38 FEET, LESS THAN 80 FEET
B-3	LIGHTING UNIT, 80 FEET OR MORE,
C-1	Navigation Lighting System on Structure Over Waterway
C-2	Bridge Cathodic Protection System
D-1	Pump Stations
D-2	Pump Stations
D-3	Pump Stations
D-4	Pump Stations
D-5	Pump Stations
D-6	Pump Stations
D-7	Pump Stations
F-1	Maintenance Facility Electrical System
Under C	Under Construction

Note: Additional A items will be added in 2017 contract as listed in schedule of price.



Type	Street Name 1	Street Name 2
A-1	103rd Street	52nd Ave.-Laramie Ave.
A-1	103rd Street	76th Avenue/Terry Drive
A-1	103rd Street	88th Avenue
A-1	103rd Street	Central Avenue
A-1	103rd Street	Lawler Avenue
A-1	103rd Street	Roberts Road
A-1	104th Avenue	131st Street
A-1	104th Avenue	179th Street
A-1	107th Street	Roberts Road
A-1	115th Street	Ridgeland Avenue
A-1	123rd Street	Kostner Avenue
A-1	127th Street	I-355 Ramp A+B(West Ramp)
A-1	127th Street	I-355 Ramp C+D(East Ramp)
A-1	127th Street	Timberline Drive
A-1	131st Street	Bell Road
A-1	131st Street	Will Cook Road
A-1	131st Street	Wolf Road
A-1	138th Street	School Street
A-1	143rd Street	Ridgeland Avenue
A-1	151st Street	80th Avenue
A-1	151st Street	82nd Avenue
A-1	151st Street	Jack Hill High School
A-1	151st Street	Oak Park Avenue
A-1	153rd Street	100th Avenue/West Avenue
A-1	153rd Street	108th Avenue
A-1	167th Street	104th Avenue
A-1	167th Street	108th Avenue
A-1	167th Street	Central Avenue

A-1	167th Street	Head Avenue
A-1	167th Street	Kedzie Avenue
A-1	167th Street	Kilbourn Avenue
A-1	167th Street	Oak Forest Avenue
A-1	167th Street	Oak Park Avenue
A-1	167th Street	Will Cook Road
A-1	167th(170th) Street	Cottage Grove Avenue
A-1	167th(170th) Street	Greenwood Avenue
A-1	167th(170th) Street	Paxton Avenue
A-1	170th Street	Exchange Avenue
A-1	170th Street	The Landing Shopping Center Drive
A-1	171st Street	80th Avenue
A-1	171st Street	84th Avenue
A-1	171st Street	88th Avenue
A-1	171st Street	94th Avenue
A-1	171st Street	Ashland Avenue
A-1	171st Street	Victor Andrew H. S. (East of 94th Avenue)
A-1	175th Street	Kedzie Avenue
A-1	179th Street	108th Avenue
A-1	183rd Street	76th Avenue
A-1	26th Street	State Street
A-1	79th Street	County Line Road
A-1	80th Avenue	157th Street
A-1	80th Avenue	167th Street
A-1	80th Avenue	175th Street
A-1	80th Avenue	179th Street/Metra Entrance
A-1	80th Avenue	183rd Street
A-1	80th Avenue	Wheeler Drive
A-1	82nd Avenue	135th Street

A-1	82nd Avenue	143rd Street
A-1	84th Avenue	175th Street
A-1	87th Street	78th Avenue
A-1	87th Street	88th Avenue
A-1	87th Street	Central Avenue
A-1	87th Street	Kean Avenue
A-1	87th Street	Oak Park Avenue
A-1	87th Street	Oketo Avenue
A-1	87th Street	Ridgeland Ave/Narragansett Ave/State Road
A-1	87th Street	Roberts Road
A-1	88th Avenue	107th Street
A-1	88th Avenue	91st Street
A-1	94th Ave	179th Street
A-1	94th Ave	Boardwalk Lane
A-1	94th Avenue	167th Street
A-1	Arlington Heighs Road	Hintz Road
A-1	Arlington Heighs Road	Rand Jr HS(Sch Dist. 25)
A-1	Arlington Heights Road	Biesterfield Rd/ Kennedy Blvd
A-1	Arlington Heights Road	Cosman Road
A-1	Arlington Heights Road	Devon Avenue
A-1	Arlington Heights Road	Elk Grove Blvd
A-1	Arlington Heights Road	Lake Cook Road
A-1	Arlington Heights Road	Landmeier Road
A-1	Arlington Heights Road	Nichols Road/Bernard Dr
A-1	Arlington Heights Road	Oakton Street
A-1	Arlington Heights Road	University Drive
A-1	Ashland Avenue	175th Street
A-1	Ashland Avenue	Sauk Trail
A-1	Ashland Avenue/King Road	Steger Road

A-1	Bartlett Road	Bode Road
A-1	Bartlett Road	Schaumburg Road
A-1	Bartlett Road	Shoe Factory Road
A-1	Bartlett Road	Streamwood Blvd
A-1	Buffalo Grove Rd/Windsor Dr.	Hintz Road
A-1	Buffalo Grove Road	Bernard Drive
A-1	Buffalo Grove Road	Buffalo Grove Plaza
A-1	Buffalo Grove Road	Lake Cook Road
A-1	Busse Road	Lincoln Street
A-1	Busse Road	Westbrook School Signals
A-1	Camp McDonald Road	Schoenbeck Road
A-1	Camp McDonald Road	Wheeling Road
A-1	Central Avenue	107th Street
A-1	Central Avenue	115th Street
A-1	Central Avenue	151st Street
A-1	Central Avenue	155th Street/James Drive
A-1	Central Avenue	83rd Street
A-1	Central Avenue	91st Street
A-1	Central Avenue	99th Street
A-1	Central Avenue	Albert Drive
A-1	Central Avenue	Midlothian Turnpike
A-1	Central Avenue	Southwest Highway
A-1	Central Road	Ela Road
A-1	Central Road	Fernandez Avenue
A-1	Central Road	Freeman Rd/Huntington Blvd
A-1	Central Road	New Wilke Road
A-1	Central Road	Northwest Community Hospital(W Fernandez)
A-1	Church Street	Lockwood Avenue
A-1	Cottage Grove Road	Glenwood Lansing Road

A-1	Cottage Grove Road	Joe Orr Road
A-1	County Line Road	Burr Ridge Parkway(S Frontage Rd)
A-1	County Line Road	Carriage Way Lane
A-1	County Line Road	German Church Road
A-1	County Line Road	Plainfield Road
A-1	Crawford Avenue	131st Street
A-1	Crawford Avenue	135th Street
A-1	Crawford Avenue	139th Street
A-1	Crawford Avenue	145th Street
A-1	Crawford Avenue	152th Street
A-1	Crawford Avenue	Howard Street
A-1	Crawford Avenue	Main Street
A-1	Crawford Avenue	Midlothian Turnpike
A-1	Crawford Avenue	Rexford Road
A-1	Dempster Street	Linneman Road
A-1	Dempster Street	Marshall Blvd
A-1	Dempster Street	Mt. Prospect Road
A-1	Devon Avenue	Lively Blvd
A-1	Devon Avenue	Mittel Blvd/Ridge Avenue
A-1	Devon Avenue	Nerge Road
A-1	Devon Avenue	Park Blvd/Pierce Road
A-1	Devon Avenue	Tonne Road
A-1	East Lake Avenue	Glenview Fire Station
A-1	East Lake Avenue	Harms Road
A-1	East Lake Avenue	Laramie Avenue
A-1	East Lake Avenue	Patriot-North And South Road(Telegraph)
A-1	East Lake Avenue	Pfingsten Road
A-1	East Lake Avenue	Scott Foresman/Tall Tree Road
A-1	East Lake Avenue	Shermer Road

A-1	East Lake Avenue	Sunset Ridge Road
A-1	East Lake Avenue	Wagner Road
A-1	East River Road	Tri-State Ramp B(N. of Golf Road)
A-1	Edens West Frontage Road	I-94 Off Ramp
A-1	Edens West Frontage Road	Tower Road
A-1	Euclid Avenue	Burning Bush Lane
A-1	Euclid Avenue	Chester Lane
A-1	Euclid Avenue	Harper College
A-1	Euclid Avenue	Plum Grove Road
A-1	Euclid Avenue	Quentin Road
A-1	Euclid Avenue	Rohlwing Road
A-1	Euclid Avenue	Roselle Road
A-1	Euclid Avenue	Salt Creek Lane
A-1	Euclid Avenue	Sycamore Lane
A-1	Euclid Avenue	Wheeling Road
A-1	Euclid Avenue	Wilke Road
A-1	Flossmoor Road	Kedzie Avenue
A-1	Glenwood Lansing Road	Stony Island Avenue
A-1	Glenwood Lansing Road	Wentworth Avenue
A-1	Greenwood Avenue	Church Street
A-1	Greenwood Avenue	Normal Avenue
A-1	Happ Road	New Trier Center
A-1	Harms Road	Glenview Road
A-1	Harms Road	Old Orchard Road
A-1	Hibbard Road	Glenview Road
A-1	Hintz Road	Chaddick Drive
A-1	Hintz Road	Schoenbeck Road
A-1	Hintz Road	Wheeling Road
A-1	Hintz Road	Wolf Road

A-1	Joe Orr Road	State Street
A-1	Joe Orr Road	Stony Island Ave
A-1	Kedzie Avenue	139th Street
A-1	Kedzie Avenue	155th Street
A-1	Kedzie Avenue	163rd Street
A-1	Kedzie Avenue	183rd Street
A-1	Kedzie Avenue	Country Aire Drive
A-1	Kedzie Avenue	Homewood-Flossmoor H S(Viking Dr)
A-1	Kedzie Avenue	Rexford Road(Claire Blvd)
A-1	Kedzie Avenue	South Surban Hospital(17800S)
A-1	Kedzie Avenue	Vollmer Road
A-1	Lake Avenue	Edens Plaza Entrance
A-1	Lake Avenue	Hunter Road-23rd Street
A-1	Lake Avenue	Illinois Road
A-1	Lake Avenue	Locust Road
A-1	Lake Avenue	Ridge Road
A-1	Lake Cook Road	Caribou Crossing/Discover Way
A-1	Lake Cook Road	Carlisle Ave/Pine Tree Road
A-1	Lake Cook Road	Commerce Clearing House
A-1	Lake Cook Road	Deer Park
A-1	Lake Cook Road	Deerlake Road
A-1	Lake Cook Road	Embassy Way/Brichwood Ave
A-1	Lake Cook Road	Lake-Cook Plaza/Corp. 500 Entrance
A-1	Lake Cook Road	Lee Road/Ridge Road
A-1	Lake Cook Road	Lexington Drive
A-1	Lake Cook Road	McHenry Road(I-83)
A-1	Lake Cook Road	Northbrook Court East Drive
A-1	Lake Cook Road	Northbrook West Drive
A-1	Lake Cook Road	Northgate Parkway

A-1	Joe Orr Road	State Street
A-1	Joe Orr Road	Stony Island Ave
A-1	Kedzie Avenue	139th Street
A-1	Kedzie Avenue	155th Street
A-1	Kedzie Avenue	163rd Street
A-1	Kedzie Avenue	183rd Street
A-1	Kedzie Avenue	Country Aire Drive
A-1	Kedzie Avenue	Homewood-Flossmoor H S(Viking Dr)
A-1	Kedzie Avenue	Rexford Road(Claire Blvd)
A-1	Kedzie Avenue	South Surban Hospital(17800S)
A-1	Kedzie Avenue	Vollmer Road
A-1	Lake Avenue	Edens Plaza Entrance
A-1	Lake Avenue	Hunter Road-23rd Street
A-1	Lake Avenue	Illinois Road
A-1	Lake Avenue	Locust Road
A-1	Lake Avenue	Ridge Road
A-1	Lake Cook Road	Caribou Crossing/Discover Way
A-1	Lake Cook Road	Carlisle Ave/Pine Tree Road
A-1	Lake Cook Road	Commerce Clearing House
A-1	Lake Cook Road	Deer Park
A-1	Lake Cook Road	Deerlake Road
A-1	Lake Cook Road	Embassy Way/Brichwood Ave
A-1	Lake Cook Road	Lake-Cook Plaza/Corp. 500 Entrance
A-1	Lake Cook Road	Lee Road/Ridge Road
A-1	Lake Cook Road	Lexington Drive
A-1	Lake Cook Road	McHenry Road(I-83)
A-1	Lake Cook Road	Northbrook Court East Drive
A-1	Lake Cook Road	Northbrook West Drive
A-1	Lake Cook Road	Northgate Parkway



A-1	Lake Cook Road	Old Hicks Road
A-1	Lake Cook Road	Pfingten Road
A-1	Lake Cook Road	Pine Street
A-1	Lake Cook Road	Plum Grove Road
A-1	Lake Cook Road	Pointe Drive/Takeda Pwy
A-1	Lake Cook Road	Portwine Road
A-1	Lake Cook Road	Raupp Blvd
A-1	Lake Cook Road	Red Oak Lane-Center Drive
A-1	Lake Cook Road	Revere Drive
A-1	Lake Cook Road	Rt 41 NB Ramps
A-1	Lake Cook Road	Rt 41 SB Ramps
A-1	Lake Cook Road	Sanders Road
A-1	Lake Cook Road	Skokie Road
A-1	Lake Cook Road	Tri-State Toll Rd(I-294)Ramp A+C
A-1	Lake Cook Road	Tri-State Toll Rd(I-294)Ramp B+D
A-1	Lake Cook Road	Wal-Mart/Target Entrance(E OF Weiland Road)
A-1	Lake Cook Road	Waukegan Road
A-1	Lake Cook Road	Weidner Road
A-1	Lake Cook Road	Weiland Road
A-1	Lake Cook Road	Wilke Road
A-1	Lake Cook Road	Wilmot Road
A-1	Landmeier Road	Lively Boulevard
A-1	Landmeier Road	Tonne Road
A-1	Landwehr Road	Cherry Lane
A-1	Landwehr Road	Hospital Drive
A-1	Landwehr Road	Techny Road
A-1	Landwehr Road	Walters Avenue
A-1	Meacham Road	Biesterfield Road
A-1	Meacham Road	K-Mart Entrance-Texas Street

A-1	Meacham Road	Mallard Crossing
A-1	Meacham Road	Nerge Road
A-1	Meacham Road	Old Schaumburg Road
A-1	Meacham Road	Schaumburg Road
A-1	Michigan City Road	Wentworth Avenue
A-1	Midlothian Turnpike	Kostner Avenue
A-1	Mt. Prospect Road	Universal Oil Products
A-1	Mt. Prospect(County Line) Road	Green Street/Franklin Avenue
A-1	Nerge Road	Plum Grove Road
A-1	Nerge Road/Pratt Blvd	Roselle Road
A-1	Oakton Street	Knox Avenue
A-1	Oakton Street	Kostner Avenue
A-1	Old Orchard Road	Edens Xway Ramps A&B
A-1	Old Orchard Road	Edens Xway Ramps C&D
A-1	Old Orchard Road	Lavergne Street
A-1	Old Orchard Road	Lawler Avenue
A-1	Old Orchard Road	Woods Drive
A-1	Park Boulevard	Pierce Road
A-1	Plainfield Road	Wolf Road
A-1	Plum Grove Road	Cougar Trail-Thacker Street
A-1	Plum Grove Road	Schaumburg Public Works
A-1	Plum Grove Road	Schaumburg Road
A-1	Plum Grove Road	Weathersfield way
A-1	Plum Grove Road	Wise Road
A-1	Potter Road	Church Street
A-1	Quentin Road	Illinois Avenue
A-1	Quentin Road	Wood Street/Crescent Avenue
A-1	Ridgeland Avenue	103rd Street-Tracey Avenue
A-1	Ridgeland Avenue	107th Street

A-1	Ridgeland Avenue	109th Street
A-1	Ridgeland Avenue	91st Street
A-1	Ridgeland Avenue	93rd Street
A-1	Ridgeland Avenue	Alan B Sheppard High School(13000 S.)
A-1	Ridgeland Avenue	St. Louis Demontfort School
A-1	Ridgeland Avenue	Steger Road
A-1	Ridgeland Avenue	Washington Street
A-1	Roberts Road	71st Street
A-1	Roberts Road	91st Street
A-1	Roberts Road	99th Street
A-1	Roselle Road	Bode Road
A-1	Roselle Road	Commerce Drive-Kristin Drive
A-1	Roselle Road	Elgin - O'Hare Ramp A & D
A-1	Roselle Road	Elgin - O'Hare Ramp B & C
A-1	Roselle Road	Hartford Drive
A-1	Roselle Road	Schaumburg Road
A-1	Roselle Road	State Parkway-Valley Lake Drive
A-1	Roselle Road	Town Square Access Drive
A-1	Roselle Road	Weatherfield Way
A-1	Roselle Road	Wise Road
A-1	Sanders Road	Commercial Avenue
A-1	Sanders Road	Lindenwood Lane
A-1	Sanders Road	Mission Hills Road
A-1	Sanders Road	Techny Road
A-1	Sanders Road	Tri-State Drive
A-1	Sanders Road	Walters Avenue
A-1	Sanders Road	Wood Oaks Jr High School
A-1	Sauk Trail	Amy Drive/Arquilla Drive
A-1	Sauk Trail	Blackhawk Drive/Lakewood Boulevard

A-1	Sauk Trail	Central Park Avenue/Main Street
A-1	Sauk Trail	Cicero Avenue(I-50)
A-1	Sauk Trail	Cottage Grove Avenue
A-1	Sauk Trail	Governors Highway
A-1	Sauk Trail	Harlem Avenue
A-1	Sauk Trail	Indianwood Boulevard
A-1	Sauk Trail	Jeffery Avenue
A-1	Sauk Trail	Karlov Avenue
A-1	Sauk Trail	Latonia Lane
A-1	Sauk Trail	Orchard Drive
A-1	Sauk Trail	Orion Avenue
A-1	Sauk Trail	Richton Road
A-1	Sauk Trail	Richton Square
A-1	Sauk Trail	Ridgeland Avenue
A-1	Sauk Trail	Shabbona Drive/Westwood Drive
A-1	Schaumburg Road	Braintree Drive
A-1	Schaumburg Road	East Avenue
A-1	Schaumburg Road	Friendship Drive/Branchwood Drive
A-1	Schaumburg Road	Grand Central Lane
A-1	Schaumburg Road	Hilltop Drive/ Post Office Drive
A-1	Schaumburg Road	Knollwood Drive
A-1	Schaumburg Road	Martingale Road
A-1	Schaumburg Road	National Parkway-Bar Harbor Drive
A-1	Schaumburg Road	Park Boulevard
A-1	Schaumburg Road	Pleasant-Town Square Drive
A-1	Schaumburg Road	Salem Drive
A-1	Schaumburg Road	Springinsguth Road
A-1	Schaumburg Road	Summit Drive
A-1	Schaumburg Road	Walnut Lane

A-1	Schaumburg Road	Wildflower Lane
A-1	Shoe Factory Road	Maureen Drive
A-1	State Street	Main Street(Young Street)
A-1	Steger Road	Union Street
A-1	Sunset Ridge Road	Skokie Blvd
A-1	Techny Road	Pfingsten Road
A-1	Vollmer Road	Central Avenue
A-1	Vollmer Road	Ridgeland Avenue
A-1	Wagner Road	Glenview Road
A-1	West Bartlett Road	Gifford Road
A-1	West Bartlett Road	Naperville Road
A-1	West Lake Avenue	Landwehr Road
A-1	West Lake Avenue	Robin Lane/Glenbrook HS
A-1	Wise Road	Braintree Drive/Rodenburg Road
A-1	Wise Road	Mitchell Boulevard/Cedarcrest Drive
A-1	Wise Road	Salem Drive/Wright Boulevard
A-1	Wise Road	Springingsguth Road
A-1	Wolf Road	51st Street
A-1	Wolf Road	79th Street
A-1	Wolf Road	Butterfield Road
A-1	Wolf Road	Chestnut Street
A-1	Wolf Road	German Church Road
A-1	Wolf Road	Harrison Street
A-1	Wolf Road	Jackson Boulevard
A-1	Wolf Road	West Point Center(Hillside Shopping Center)
A-1	Wolf Road	Westbrook Corporate Center
A-2	139th Street	Harrison Avenue
A-2	175th Street	Oak Park Avenue
A-2	Shoe Factory Road	Beverly Road

A-2	Shoe Factory Road	Rohrssen Road
A-3	Cottage Grove Road	Steger Road
A-3	Ridgeland Avenue	Home Avenue
A-3	Steger Road	Torrence Avenue
A-4	103rd Street	90th Avenue
A-4	104th Avenue	Palos West School
A-4	123rd Street	Loveland Street
A-4	171st Street	Ashland Avenue
A-4	80th Avenue	South of Southwest Highway
A-4	82nd Avenue	Prairie School(14100 South)
A-4	Bateman Road	Bateman Circle
A-4	Bluff Road	West of Stephen Street
A-4	Central Avenue	101st Street
A-4	Central Avenue	176th Street
A-4	County Line Road	57th Street
A-4	Crawford Avenue	148th Street
A-4	Ela Road	South of Bradwell Road
A-4	Francisco Avenue	South of Wireton Road
A-4	German Church Road	Trinity Lutheran School
A-4	Joe Orr Road	West of Stony Island Ave
A-4	Mt. Prospect Road	North Avenue Frontage Road
A-4	Plainfield Road	Highland School
A-4	Ridgeland Avenue	South of 115th Street
A-4	Roselle Road	Baldwin Road
A-4	Steger Road	Indiana Border EB
A-4	Vollmer Road	Between Kedzie Avenue and Western Avenue
A-4	Wagner Road	North of East Lake Avenue
A-4	Wolf Road	59th Street
A-4	Wolf Road	Pleasantdale School(7500S)

Under C	Central Road	Roselle Road
Under C	Crawford Avenue	Lunt Avenue
Under C	Crawford Avenue	Oakton Street
Under C	Crawford Avenue	Over Cal-Sag Channel
Under C	Francisco Avenue	Over Cal-Sag Channel
Under C	Ridgeland Avenue	Over Cal-Sag Channel
Under C	Roselle Road	Hillcrest Boulevard
Under C	Roselle Road	North of Central Road
Under C	Roselle Road	Northwest Toll Road Ramps
Under C	Roselle Road	Remington Road/Remington Circle
Under C	Sauk Trail	I-57 Ramps A & B
Under C	Sauk Trail	I-57 Ramps C & D
Under C	Sauk Trail	Thomas Drive
Under C	Vollmer Road	Meijer Entrance/Tradition Drive

**V LIST OF UNINTERRUPTIBLE POWER SYSTEM LOCATIONS  
(AS OF December 1, 2015)**

<b>Street Name 1</b>	<b>Street Name 2</b>	<b>UPS Manufacturer</b>	<b>Installation Date</b>	<b>New Batteries</b>
103rd Street	52nd St/Laramie Ave	Brown Traffic	06/16/11	
103rd Street	Lawler Ave	Brown Traffic	07/22/11	
127th Street	Timberline Drive	Traffic Control	07/02/10	11/18/15
151st Street	Jack Hill School	Traffic Control	10/15/13	
167th Street	Oak Forest Avenue	Traffic Control	07/24/08	10/01/13
167th Street	Cottage Grove	Traffic Control	06/21/13	
167th Street	Greenwood Ave	Traffic Control	06/21/13	
170th Street	Exchange Avenue	Traffic Control	12/17/09	10/06/14
170th Street	Landing Shopping Center Dr	Traffic Control	12/17/09	10/06/14
175th Street	Kedzie Avenue	Traffic Control	11/06/09	10/06/14
87th Street	Oak Park Ave	Brown Traffic	09/01/11	
88th Ave	91st Steet	Brown Traffic	06/28/13	
94th Avenue	179th Street	Brown Traffic	01/10/12	
94th Avenue	Boardwalk Lane	Brown Traffic	02/20/13	
Arlington Heighths	Bernard Drive	Traffic Control	12/08/11	
Arlington Heighths	Devon Ave	Traffic Control	10/14/09	10/06/14
Arlington Heighths	University Drive	Traffic Control	12/08/11	
Buffalo Grove Rd	Buffalo Grove Plaza	Traffic Control	10/23/14	
Central Ave	83rd St	Brown Traffic	06/03/11	
Central Ave	99th St	Brown Traffic	06/16/11	
Central Ave	103rd St	Brown Traffic	06/03/11	
Central Ave	107th St	Brown Traffic	06/16/11	
Central Road	Roselle Road	Meade	11/18/10	
Central Ave	Southwest Highway	Traffic Control	06/24/15	
Crawford Ave	Oakton Street	Traffic Control	05/22/15	
Dempster Street	Linneman Road	Meade	12/17/10	11/24/15
East Lake Ave	Patriot Road(Telegraph)	Brown Traffic	07/01/05	03/01/11
East Lake Ave	Pfingsten Road	Traffic Control	04/09/15	
East Lake Ave	Shermer Road	Brown Traffic	10/01/05	03/01/11
Harms Road	Glenview Road	Traffic Control	11/12/15	
Lake Cook Road	Deer Lake Road	Traffic Control	05/29/12	



Lake Cook Road	Huehl Rd/ Birchwood Ave	Traffic Control	05/29/12	
Lake Cook Road	Lake Cook Plaza	Traffic Control	11/25/13	
Lake Cook Road	Pfingsten Road	Traffic Control	05/29/12	
Lake Cook Road	Pine Street	Traffic Control	06/01/12	
Lake Cook Road	Portwine Road	Traffic Control	01/12/11	
Lake Cook Road	Rt 41 NB Ramps	Traffic Control	01/12/11	
Lake Cook Road	Rt 41 SB Ramps	Traffic Control	01/12/11	
Lake Cook Road	Skokie Road	Traffic Control	01/12/11	
Lake Cook Road	Waukegan Road	Traffic Control	09/03/14	
Landwehr Ave	Hospital Drive	Traffic Control	12/06/11	
Nerge Rd	Roselle Road	Meade	11/18/10	11/24/15
Old Orchard Rd	Edens West Ramp	Meade	12/01/13	
Old Orchard Rd	Edens East Ramp	Meade	12/01/13	
Old Orchard Rd	Lawler Avenue	Meade	12/01/13	
Old Orchard Rd	Wood Drive	Meade	12/01/13	
Old Orchard Rd	Lavergne Street	Meade	12/01/13	
Plum Grove Rd	Wise Road	Brown Traffic	03/17/09	10/06/14
Potter Road	Church Street	Traffic Control	11/18/10	11/24/15
Quentin Road	Wood St/Crescent Ave	Traffic Control	10/18/12	
Ridgeland Ave	91st St	Brown Traffic	09/29/11	
Ridgeland Ave	103rd Street-Tracey Ave	Traffic Control	10/30/08	10/01/13
Ridgeland Ave	St. Louis De Montfort	Brown Traffic	06/23/11	
Ridgeland Ave	Steger Road	Traffic Control	04/18/11	
Roselle Road	Elgin - O'Hare Ramp A & D	Meade	11/18/10	03/24/2016
Roselle Road	Elgin - O'Hare Ramp B & C	Meade	11/18/10	03/24/2016
Roselle Road	Hillcrest Boulevard	Meade	11/18/10	
Roselle Road	NW Tollway Ramps	Meade	11/18/10	
Schaumburg Rd	Salem Drive	Traffic Control	11/25/13	
Sauk Trail	I-57 Ramps A & B	Traffic Control	06/13/07	01/03/11
Sauk Trail	I-57 Ramps C & D	Traffic Control	06/13/07	01/03/11
Sauk Trail	Ridgeland Ave	Traffic Control	04/18/11	
State Street	Main Street(Young Street)	Brown Traffic	07/27/09	10/06/14
Techny Road	Pfingsten Road	Brown Traffic	05/24/13	
W Bartlett Rd	Naperville Road	Brown Traffic	07/11/11	
West Lake Ave	Landwehr	Traffic Control	03/01/11	

West Lake Ave	Robin Lane	Traffic Control	03/01/11	
Wise Road	Salem Drive	Traffic Control	05/01/11	
Wolf Road	Butterfield Road	Traffic Control	04/09/15	
Wolf Road	Harrison Street	Traffic Control	04/09/15	

**VI LIST OF LED TRAFFIC SIGNAL LOCATIONS  
(AS OF April 1, 2016):**

Type	Street Name 1	Street Name 2	Installation Date	Pedestrian Installation Date	Note
A-1	103rd Street	52nd Ave/Laramie Ave	06/16/11	06/16/11	DIALIGHT
A-1	103rd Street	76th Avenue/Terry Drive	11/22/11	11/22/11	DIALIGHT
A-1	103rd Street	88th Avenue	11/14/11	11/14/11	DIALIGHT
A-1	103rd Street	Central Avenue	06/03/11	06/03/11	DIALIGHT
A-1	103rd Street	Lawler Avenue	07/22/11	07/22/11	DIALIGHT
A-1	103rd Street	Roberts Road	11/14/11	11/14/11	DIALIGHT
A-1	104th Avenue	131st Street	10/28/11		DIALIGHT
A-1	104th Avenue	179th Street	11/14/11	12/14/15	GELCORE
A-1	107th Street	Roberts Road	03/05/09	03/05/09	GELCORE
A-1	108th Avenue	153th Street	04/23/09	04/23/09	GELCORE
A-1	115th Street	Ridgeland Avenue	10/24/14	04/24/12	GELCORE
A-1	123rd Street	Kostner Avenue	05/09/11	05/09/11	DIALIGHT
A-1	127th Street	I-355 East Ramp	06/06/08		GELCORE
A-1	127th Street	I-355 Ramp A+B (W Ramp)	03/04/08		GELCORE
A-1	127th Street	Timberline Drive	07/02/10	07/02/10	GELCORE
A-1	131st Street	Bell Road	10/28/14		GELCORE
A-1	131st Street	Carl Sandburg H.S.	10/29/14	10/29/14	GELCORE
A-1	131st Street	Will Cook Road	10/29/14		GELCORE
A-1	131st Street	Wolf Road	10/28/14		GELCORE
A-1	138th Street	School Street	12/01/11		DIALIGHT
A-1	143rd Street	Ridgeland Avenue	01/30/12	01/30/12	DIALIGHT
A-1	151st Street	80th Avenue	06/01/12	06/01/12	GELCORE
A-1	151st Street	82nd Avenue	06/01/12		GELCORE
A-1	151st Street	Jack Hill High School	10/15/13	10/15/13	GELCORE
A-1	151st Street	Oak Park Avenue	01/27/09		DIALIGHT

A-1	153rd Street	100th Avenue/West Avenue	12/12/11	12/12/11	DIALIGHT
A-1	167th Street	104th Avenue	10/30/14	12/14/15	GELCORE
A-1	167th Street	108th Avenue	10/31/14		GELCORE
A-1	167th Street	Central Avenue	10/30/08	10/30/08	DIALIGHT
A-1	167th Street	Head Avenue	06/04/15	06/04/15	GELCORE
A-1	167th Street	Kedzie Avenue	07/02/15		GELCORE
A-1	167th Street	Kilbourn Avenue	06/09/15		GELCORE
A-1	167th Street	Oak Park Avenue	10/30/08	10/30/08	DIALIGHT
A-1	167th Street	Oak Forest Avenue	07/24/08		GELCORE
A-1	167th Street	Will Cook Road	11/03/14		GELCORE
A-1	167th(170th) Street	Cottage Grove Avenue	06/21/13	06/21/13	GELCORE
A-1	167th(170th) Street	Greenwood Avenue	06/21/13	06/21/13	GELCORE
A-1	167th(170th) St	Paxton Avenue	12/07/11		DIALIGHT
A-1	170th Street	Exchange Avenue	12/17/09		GELCORE
A-1	170th Street	Landing Shopping Center Drive	01/11/10		GELCORE
A-1	171st Street	80th Avenue	12/12/11	12/12/11	DIALIGHT
A-1	171st Street	84th Avenue	12/30/11		DIALIGHT
A-1	171st Street	88th Avenue	11/21/11		DIALIGHT
A-1	171st Street	94th Avenue	11/21/11		DIALIGHT
A-1	171st Street	Ashland Avenue	NOV' 13		DIALIGHT
A-1	171st Street	Center Street	10/17/11		DIALIGHT
A-1	171st Street	Victor Andrew High School	12/12/11		DIALIGHT
A-1	175th Street	Kedzie Avenue	11/06/09		GELCORE
A-1	179th Street	108th Avenue	11/02/11	11/02/11	DIALIGHT
A-1	183rd Street	76th Avenue	11/03/14		GELCORE
A-1	26th Street	State Street	05/22/07		GELCORE
A-1	79th Street	County Line Road	NOV' 13	NOV' 13	GELCORE
A-1	80th Avenue	157th Street	05/31/12	05/31/12	GELCORE

A-1	80th Avenue	167th Street	12/30/11	12/30/11	DIALIGHT
A-1	80th Avenue	175th Street	12/30/11	12/30/11	DIALIGHT
A-1	80th Avenue	179th Street/Metra Entrance	01/18/12	01/18/12	DIALIGHT
A-1	80th Avenue	183rd Street	01/30/12		DIALIGHT
A-1	80th Avenue	Wheeler Drive	05/03/12	05/03/12	GELCORE
A-1	82nd Avenue	135th Street	06/19/15		GELCORE
A-1	82nd Avenue	143rd Street	05/05/15	05/05/15	GELCORE
A-1	84th Avenue	175th Street	12/30/11	12/30/11	DIALIGHT
A-1	87th Street	78th Avenue	01/30/12	01/30/12	DIALIGHT
A-1	87th Street	88th Avenue	05/06/15	05/06/15	GELCORE
A-1	87th Street	Central Avenue	05/09/11	05/09/11	DIALIGHT
A-1	87th Street	Kean Avenue	10/19/11	10/19/11	DIALIGHT
A-1	87th Street	Oak Park Avenue	09/01/11		DIALIGHT
A-1	87th Street	Oketo Avenue	01/30/12	01/30/12	DIALIGHT
A-1	87th Street	Ridgeland Ave/Narragansett Ave/State Road	01/17/13	01/17/13	DIALIGHT
A-1	87th Street	Roberts Road	11/04/14		GELCORE
A-1	88th Avenue	91st Street	06/28/13	06/28/13	DIALIGHT
A-1	88th Avenue	107th Street	05/07/15	05/07/15	GELCORE
A-1	94th Avenue	167th Street	11/01/11	11/01/11	DIALIGHT
A-1	94th Avenue	179th Street	01/10/12	01/10/12	DIALIGHT
A-1	94th Avenue	Boardwalk Lane	02/20/13	02/20/13	DIALIGHT
A-1	Arlington Heights Rd	Biesterfield Rd/ Kennedy Blvd	NOV'13	01/10/11	GELCORE/ PED-GE
A-1	Arlington Heights Rd	Cosman Road	NOV'13	NOV'13	GELCORE
A-1	Arlington Heights Rd	Devon Avenue	10/14/09	10/14/09	GELCORE
A-1	Arlington Heights Rd	Elk Grove Blvd	NOV'13	NOV'13	GELCORE
A-1	Arlington Heights Rd	Hintz Road	02/17/09	02/17/09	GELCORE
A-1	Arlington Heights Rd	Lake Cook Road	06/07/12	06/07/12	DIALIGHT

A-1	Arlington Heights Rd	Landmeier Road	NOV'13	NOV'13	GELCORE
A-1	Arlington Heights Rd	Nichols Road/Bernard Dr	06/07/12	12/08/11	DIALIGHT/ PED-GE
A-1	Arlington Heights Rd	Oakton Street	NOV'13	NOV'13	GELCORE
A-1	Arlington Heights Rd	University Drive	12/08/11		DIALIGHT
A-1	Ashland Avenue	175th Street	06/26/15		GELCORE
A-1	Ashland Avenue	Sauk Trail	06/22/07		GELCORE
A-1	Ashland Avenue/King Road	Steger Road	06/29/15		GELCORE
A-1	Bartlett Road	Bode Road	12/03/14	12/03/14	GELCORE
A-1	Bartlett Road	Schaumburg Road	12/02/14	12/02/14	GELCORE
A-1	Bartlett Road	Shoe Factory Road	01/04/05	01/04/05	GELCORE
A-1	Bartlett Road	Streamwood Blvd	12/01/14	12/01/14	GELCORE
A-1	Brainard Avenue	Plainfield Road	07/06/06		GELCORE
A-1	Buffalo Grove Road	Bernard Drive	03/28/12		DIALIGHT
A-1	Buffalo Grove Rd	Buffalo Grove Plaza	10/23/14	10/23/14	GELCORE
A-1	Buffalo Grove Rd/Windsor Dr.	Hintz Road	06/06/12	06/06/12	DIALIGHT
A-1	Buffalo Grove Road	Lake Cook Road	06/07/12	06/07/12	DIALIGHT
A-1	Busse Road	Lincoln Street	05/30/12	05/30/12	DIALIGHT
A-1	Busse Road	Westbrook School	03/28/12	03/28/12	DIALIGHT
A-1	Camp McDonald Rd	Schoenbeck Road	12/08/14	12/08/14	GELCORE
A-1	Camp McDonald Rd	Wheeling Road	12/09/14		GELCORE
A-1	Central Avenue	107th Street	06/16/11	06/16/11	DIALIGHT
A-1	Central Avenue	115th Street	05/09/11		DIALIGHT
A-1	Central Avenue	151st Street	05/30/12	05/30/12	GELCORE
A-1	Central Avenue	155th Street/ James Drive	11/14/11	11/14/11	DIALIGHT
A-1	Central Avenue	83rd Street	06/03/11	06/03/11	DIALIGHT
A-1	Central Avenue	91st Street	05/09/11		DIALIGHT
A-1	Central Avenue	99th Street	06/16/11	06/16/11	DIALIGHT
A-1	Central Avenue	Albert Drive	11/14/11	11/14/11	DIALIGHT

A-1	Central Avenue	Midlothian Turnpike	10/31/11		DIALIGHT
A-1	Central Avenue	Northwest Community Hospital	11/30/12	11/30/12	DIALIGHT
A-1	Central Avenue	Southwest Highway	06/24/15	06/24/15	GELCORE
A-1	Central Road	Ela Road	NOV'13	NOV'13	GELCORE
A-1	Central Road	Fernandez Avenue	03/21/12	03/21/12	DIALIGHT
A-1	Central Road	Freeman Rd/Huntington Blvd	NOV'13		GELCORE
A-1	Central Road	New Wilke Road	NOV'13		GELCORE
A-1	Central Road	Roselle Road	NOV'13	NOV'13	GELCORE
A-1	Church Street	Lockwood Avenue	06/06/12	06/06/12	DIALIGHT
A-1	Cottage Grove Road	Glenwood Lansing Road	07/06/15		GELCORE
A-1	Cottage Grove Road	Joe Orr Road	07/08/15		GELCORE
A-1	County Line Road	Burr Ridge Parkway (S Frontage Rd)	11/05/14	NOV' 13	GELCORE
A-1	County Line Road	Carriage Way Lane	11/07/14	11/07/14	GELCORE
A-1	County Line Road	German Church Road	NOV' 13	NOV' 13	GELCORE
A-1	County Line Road	Plainfield Road	11/6/14		GELCORE
A-1	Crawford Avenue	131st Street	10/27/14		GELCORE
A-1	Crawford Avenue	135th Street	10/23/14		GELCORE
A-1	Crawford Avenue	139th Street	10/24/14		GELCORE
A-1	Crawford Avenue	145th Street	10/27/14	12/21/11	GELCORE
A-1	Crawford Avenue	152th Street	NOV' 13	NOV' 13	DIALIGHT
A-1	Crawford Avenue	Howard Street	NOV'13	2/18/15	GELCORE
A-1	Crawford Avenue	Main Street	05/30/12	05/30/12	DIALIGHT
A-1	Crawford Avenue	Midlothian Turnpike	10/24/14		GELCORE
A-1	Crawford Avenue	Rexford Road	12/08/11		GELCORE
A-1	Dempster Street	Linneman Road	12/21/10	12/21/10	GELCORE
A-1	Dempster Street	Marshall Blvd	05/30/12	05/30/12	DIALIGHT
A-1	Dempster Street	Mt. Prospect Road	11/30/12		DIALIGHT
A-1	Devon Avenue	Lively Blvd	07/24/15		GELCORE

A-1	Devon Avenue	Mittel Blvd/Ridge Avenue	03/21/12		DIALIGHT
A-1	Devon Avenue	Nerge Avenue	06/06/12	06/06/12	GELCORE
A-1	Devon Avenue	Park Blvd/Pierce Road	NOV'13		GELCORE
A-1	Devon Avenue	Tonne Road	03/08/07	03/08/07	GELCORE
A-1	East Lake Ave	Glenview Fire Station	06/04/12		GELCORE
A-1	East Lake Ave	Harms Road	NOV'13	NOV'13	GELCORE
A-1	East Lake Ave	Laramie Avenue	5/30/12	5/30/12	DIALIGHT
A-1	East Lake Ave	Patriot Road(Telegraph)	NOV'13	07/26/05	GE/DIA
A-1	East Lake Ave	Pfingsten Road	NOV'13	04/09/15	GELCORE
A-1	East Lake Ave	Scott Foresman/Tall Tree Rd	06/05/12	06/05/12	GELCORE
A-1	East Lake Ave	Shermer Road	NOV'13	NOV'13	GELCORE
A-1	East Lake Ave	Sunset Ridge Road	06/05/12	06/05/12	GELCORE
A-1	East Lake Ave	Wagner Road	06/04/12	06/04/12	GELCORE
A-1	East River Road	Tri-State Ramp B(N of Golf Rd)	12/12/14		GELCORE
A-1	Edens West Frontage Road	I-94 Off Ramp	11/26/14	11/26/14	GELCORE
A-1	Edens West Frontage Road	Tower Road	12/02/14		GELCORE
A-1	Euclid Avenue	Burning Bush Lane	05/30/12	05/30/12	DIALIGHT
A-1	Euclid Avenue	Chester Lane	12/15/11	12/15/11	GELCORE
A-1	Euclid Avenue	Harper College	12/16/11	12/16/11	GELCORE
A-1	Euclid Avenue	Plum Grove Road	05/21/09	05/21/09	GELCORE
A-1	Euclid Avenue	Quentin Road	NOV'13	NOV'13	GELCORE
A-1	Euclid Avenue	Rohlwing Road	NOV'13	NOV'13	GELCORE
A-1	Euclid Avenue	Roselle Road	NOV'13		GELCORE
A-1	Euclid Avenue	Salt Creek Lane	12/15/11		GELCORE
A-1	Euclid Avenue	Sycamore Lane	12/16/14	12/16/14	GELCORE
A-1	Euclid Avenue	Wheeling Road	4/30/12	06/19/09	DIALIGHT
A-1	Euclid Avenue	Wilke Road	03/21/12	03/21/12	DIALIGHT
A-1	Flossmoor Road	Kedzie Avenue	08/01/08	08/01/08	DIALIGHT



A-1	Glenwood Lansing Rd	Stony Island Avenue	05/11/15	05/11/15	GELCORE
A-1	Glenwood Lansing Rd	Wentworth Avenue	08/10/07	05/01/07	GELCORE
A-1	Greenwood Ave	Church Street	12/15/14	12/15/14	GELCORE
A-1	Greenwood Avenue	Normal Avenue	12/16/14	12/16/14	GELCORE
A-1	Happ Road	New Trier Center	03/28/12	03/28/12	DIALIGHT
A-1	Harms Road	Glenview Road	4/20/12	4/20/12	DIALIGHT
A-1	Harms Road	Old Orchard Road	12/17/14	12/17/14	GELCORE
A-1	Hibbard Road	Glenview Road	05/30/12	05/30/12	DIALIGHT
A-1	Hintz Road	Chaddick Drive	06/06/12		DIALIGHT
A-1	Hintz Road	Schoenbeck Road	06/06/12		DIALIGHT
A-1	Hintz Road	Wheeling Road	06/06/12		DIALIGHT
A-1	Hintz Road	Wolf Road	12/16/14	12/16/14	GELCORE
A-1	Joe Orr Road	State Street	07/13/15		GELCORE
A-1	Joe Orr Road	Stony Island Ave	05/23/07		GELCORE
A-1	Kedzie Avenue	139th Street	11/22/11		DIALIGHT
A-1	Kedzie Avenue	155th Street	11/04/11		DIALIGHT
A-1	Kedzie Avenue	163rd Street	01/08/13	01/08/13	DIALIGHT
A-1	Kedzie Avenue	183rd Street	12/01/11		DIALIGHT
A-1	Kedzie Avenue	Country Aire Drive	11/04/11		DIALIGHT
A-1	Kedzie Avenue	Homewood-Flossmoor HS (Viking Dr)	12/01/11		DIALIGHT
A-1	Kedzie Avenue	Rexford Road (Claire Blvd)	11/22/11		DIALIGHT
A-1	Kedzie Avenue	South Suburban Hospital (17800S)	01/08/13	01/08/13	DIALIGHT
A-1	Kedzie Avenue	Vollmer Road	05/12/15	05/12/15	GELCORE
A-1	Lake Avenue	Edens Plaza Entrance	06/04/12	06/04/12	GELCORE
A-1	Lake Avenue	Hunter Road-23rd Street	12/12/14	12/12/14	GELCORE
A-1	Lake Avenue	Illinois Road	12/11/14	12/11/14	GELCORE
A-1	Lake Avenue	Locust Road	12/10/14	12/10/14	GELCORE
A-1	Lake Avenue	Ridge Road	05/18/15	05/18/15	GELCORE

orrA-1	Lake Cook Road	Carlisle Ave/Pine Tree Road	12/16/11	12/16/11	DIALIGHT
A-1	Lake Cook Road	Commerce Clearing House	NOV' 13		GELCORE
A-1	Lake Cook Road	Caribou Crossing/Discover Way	NOV' 13	NOV' 13	GELCORE
A-1	Lake Cook Road	Deer Lake Road	05/29/12	05/29/12	GELCORE
A-1	Lake Cook Road	Deer Park	06/05/12	06/05/12	GELCORE
A-1	Lake Cook Road	Embassy Way /Birchwood Ave	05/29/12	03/18/2016	GELCORE
A-1	Lake Cook Road	Lake Cook Plaza/Corp. Dr	11/25/13	11/25/13	GELCORE
A-1	Lake Cook Road	Lee Road/Ridge Road	06/06/12		DIALIGHT
A-1	Lake Cook Road	Lexington Drive	NOV' 13	NOV' 13	GELCORE
A-1	Lake Cook Road	McHenry Road(I-83)	06/07/12	06/07/12	DIALIGHT
A-1	Lake Cook Road	Northbrook Court East Drive	NOV' 13	NOV' 13	GELCORE
A-1	Lake Cook Road	Northbrook West Drive	06/06/12		DIALIGHT
A-1	Lake Cook Road	Northgate Parkway	NOV' 13		GELCORE
A-1	Lake Cook Road	Old Hicks Road	NOV' 13		GELCORE
A-1	Lake Cook Road	Pfingsten Road	05/29/12	05/29/12	GELCORE
A-1	Lake Cook Road	Pine Street	06/01/12	06/01/12	GELCORE
A-1	Lake Cook Road	Plum Grove Road	06/05/12		GELCORE
A-1	Lake Cook Road	Pointe Drive	11/24/14		GELCORE
A-1	Lake Cook Road	Portwine Road	NOV' 13		GELCORE
A-1	Lake Cook Road	Raupp Blvd	06/07/12	06/07/12	DIALIGHT
A-1	Lake Cook Road	Red Oak Lane-Center Drive	NOV' 13	NOV' 13	GELCORE
A-1	Lake Cook Road	Revere Drive	NOV' 13		GELCORE
A-1	Lake Cook Road	Rt 41 NB Ramps	NOV' 13		GELCORE
A-1	Lake Cook Road	Rt 41 SB Ramps	NOV' 13		GELCORE
A-1	Lake Cook Road	Sanders Road	NOV' 13		GELCORE
A-1	Lake Cook Road	Skokie Road	NOV' 13	NOV' 13	GELCORE
A-1	Lake Cook Road	Tri-State Ramp A+C	04/20/12		DIALIGHT

A-1	Lake Cook Road	Tri-State Tollway Ramp B (E Ramp)	05/15/09		GELCORE
A-1	Lake Cook Road	Wal-Mart/Target Entrance(E OF Weiland Road)	NOV' 13	NOV' 13	GELCORE
A-1	Lake Cook Road	Waukegan Road	07/31/14	07/31/14	GELCORE
A-1	Lake Cook Road	Weidner Road	08/30/05	08/30/05	GELCORE
A-1	Lake Cook Road	Weiland Road	NOV' 13	NOV' 13	GELCORE
A-1	Lake Cook Road	Wilke Road	11/19/12		DIALIGHT
A-1	Lake Cook Road	Wilmot Road	05/15/09		GELCORE
A-1	Landmeier Road	Lively Boulevard	12/09/14	12/09/14	GELCORE
A-1	Landmeier Road	Tonne Road	NOV'13		GELCORE
A-1	Landwehr Road	Cherry Lane	11/20/14	11/20/14	GELCORE
A-1	Landwehr Road	Hospital Drive	12/06/11	12/06/11	GELCORE
A-1	Landwehr Road	Techny Road	04/20/12	04/20/12	DIALIGHT
A-1	Landwehr Road	Walters Avenue	04/20/12	04/20/12	DIALIGHT
A-1	Meacham Road	Biesterfield Road	NOV'13	NOV'13	GELCORE
A-1	Meacham Road	K-Mart Entrance-Texas Street	NOV'13	NOV'13	GELCORE
A-1	Meacham Road	Mallard Crossing	NOV'13	NOV'13	GELCORE
A-1	Meacham Road	Nerge Road	NOV'13	NOV'13	GELCORE
A-1	Meacham Road	Old Schaumburg Road	03/06/12		DIALIGHT
A-1	Meacham Road	Schaumburg Road	02/17/12	02/17/12	DIALIGHT
A-1	Michigan City Road	Wentworht Ave	10/30/14		GELCORE
A-1	Midlothian Turnpike	Kostner Avenue	10/31/11		DIALIGHT
A-1	Mt. Prospect (County Line) Road	Green Street/Franklin Avenue	03/21/12		DIALIGHT
A-1	Mt. Prospect Road	UOP	03/28/12	03/28/12	DIALIGHT
A-1	Nerge Road	Plum Grove Road	03/21/12	03/21/12	DIALIGHT
A-1	Nerge Road/Pratt Blvd	Roselle Road	11/12/14		GELCORE
A-1	Oakton Street	Knox Avenue	12/17/14	12/17/14	GELCORE
A-1	Oakton Street	Kostner Avenue	04/30/12	04/30/12	DIALIGHT

A-1	Old Orchard Road	Eden Xway Ramps A&B	11/19/12	11/19/12	DIALIGHT
A-1	Old Orchard Road	Eden Xway Ramps C&D	11/19/12	11/19/12	DIALIGHT
A-1	Old Orchard Road	Lavergne Avenue	11/30/12	11/30/12	DIALIGHT
A-1	Old Orchard Road	Lawler Avenue	11/19/12	11/19/12	DIALIGHT
A-1	Old Orchard Road	Wood Drive	07/23/15		GELCORE
A-1	Park Blvd	Pierce Road	05/30/12		DIALIGHT
A-1	Plainfield Road	Wolf Road	NOV' 13	NOV' 13	DIALIGHT
A-1	Plum Grove Road	Cougar Trail-Thacker Street	03/06/12	03/06/12	DIALIGHT
A-1	Plum Grove Road	Schaumburg Public Works	03/06/12		DIALIGHT
A-1	Plum Grove Road	Schaumburg Road	02/17/12	02/17/12	DIALIGHT
A-1	Plum Grove Road	Weathersfield Way	03/03/12	03/06/12	DIALIGHT
A-1	Plum Grove Road	Wise Road	03/17/09	03/17/09	DIALIGHT
A-1	Potter Road	Church Street	11/18/10	11/18/10	GELCORE
A-1	Quentin Road	Illinois Avenue	12/22/05	12/22/11	DIALIGHT
A-1	Quentin Road	Wood Street	02/06/12	02/06/12	DIALIGHT
A-1	Ridgeland Avenue	103rd Street-Tracey Avenue	10/24/14	04/25/12	GELCORE
A-1	Ridgeland Avenue	107th Street	10/27/14	04/25/12	GELCORE
A-1	Ridgeland Avenue	109th Street	10/29/14	04/25/12	GELCORE
A-1	Ridgeland Avenue	91st Street	09/29/11	09/29/11	DIALIGHT
A-1	Ridgeland Avenue	93rd Street	11/03/14	11/03/14	GELCORE
A-1	Ridgeland Avenue	Alan B Sheppard H.S.	11/22/11	11/22/11	DIALIGHT
A-1	Ridgeland Avenue	St. Louis Demontfort School	06/23/11	06/23/11	DIALIGHT
A-1	Ridgeland Avenue	Steger Road	04/18/11		GELCORE
A-1	Ridgeland Avenue	Washington Street	10/31/14	12/21/11	GELCORE
A-1	Roberts Road	71st Street	10/29/14		GELCORE
A-1	Roberts Road	91st Street	10/27/11	10/27/11	DIALIGHT
A-1	Roberts Road	99th Street	10/19/11		DIALIGHT
A-1	Roselle Road	Bode Road	NOV'13	NOV'13	GELCORE

A-1	Roselle Road	Commerce Drive-Kristin Drive	NOV'13	NOV'13	GELCORE
A-1	Roselle Road	Elgin - O'Hare Ramp A & D	02/01/06		DIALIGHT
A-1	Roselle Road	Elgin - O'Hare Ramp B & C (SE Side)	02/01/06, 12/18/15	12/18/15	GELCORE
A-1	Roselle Road	Hartford Drive	11/14/14	11/14/14	GELCORE
A-1	Roselle Road	Hillcrest Boulevard	NOV'13	NOV'13	GELCORE
A-1	Roselle Road	Northwest Toll Road Ramps	NOV'13		GELCORE
A-1	Roselle Road	Remington Road/Remington Circle	NOV'13	NOV'13	GELCORE
A-1	Roselle Road	Schaumburg Road	02/6/12	5/12/10	DIALIGHT PED-GE
A-1	Roselle Road	State Parkway-Valley Lake Drive	NOV'13	NOV'13	GELCORE
A-1	Roselle Road	Town Square Access Drive	02/6/12	5/12/10	DIALIGHT PED-GE
A-1	Roselle Road	Weatherfield Way	11/17/14	11/17/14	GELCORE
A-1	Roselle Road	Wise Road	11/13/14	11/13/14	GELCORE
A-1	Sanders Road	Commercial Avenue	11/19/14	11/19/14	GELCORE
A-1	Sanders Road	Lindenwood Avenue	12/23/14	12/23/14	GELCORE
A-1	Sanders Road	Mission Hills Road	11/18/14		GELCORE
A-1	Sanders Road	Techny Road	11/19/14		GELCORE
A-1	Sanders Road	Tri-State Drive	04/20/12		DIALIGHT
A-1	Sanders Road	Walters Avenue	11/21/14	11/21/14	GELCORE
A-1	Sanders Road	Wood Oaks Jr High School	11/20/14	11/20/14	GELCORE
A-1	Sauk Trail	Amy(Arquilla)/High School Dr	05/15/15	05/15/15	GELCORE
A-1	Sauk Trail	Blackhawk Dr/Lakewood Blvd	NOV' 13		GELCORE
A-1	Sauk Trail	Central Park Ave/Main St	NOV' 13		GELCORE
A-1	Sauk Trail	Cicero Avenue(I-50)	05/19/15	05/19/15	GELCORE
A-1	Sauk Trail	Cottage Grove Avenue	12/07/11		DIALIGHT
A-1	Sauk Trail	Governors Highway	05/26/15	05/26/15	GELCORE
A-1	Sauk Trail	Harlem Avenue	12/12/11		DIALIGHT

A-1	Sauk Trail	I-57 Ramps A & B	06/13/07		GELCORE
A-1	Sauk Trail	I-57 Ramps C & D	06/13/07		GELCORE
A-1	Sauk Trail	Indianwood Boulevard	NOV' 13	NOV' 13	GELCORE
A-1	Sauk Trail	Jeffery Avenue	06/27/07		GELCORE
A-1	Sauk Trail	Karlov Avenue	08/01/07	08/01/07	GELCORE
A-1	Sauk Trail	Latonia Lane	05/21/07	05/21/07	GELCORE
A-1	Sauk Trail	Orchard Drive	04/24/12	04/24/12	GELCORE
A-1	Sauk Trail	Orion Avenue	06/22/07	06/22/07	GELCORE
A-1	Sauk Trail	Richton Road	06/27/07	06/27/07	GELCORE
A-1	Sauk Trail	Richton Square	NOV' 13	NOV' 13	GELCORE
A-1	Sauk Trail	Ridgeland Avenue	04/18/11		GELCORE
A-1	Sauk Trail	Shabbona Dr/Westwood Dr	NOV' 13	NOV' 13	GELCORE
A-1	Sauk Trail	Thomas Drive	05/28/15	05/28/15	GELCORE
A-1	Schaumburg Road	Braintree Drive	12/20/12	12/20/12	DIALIGHT
A-1	Schaumburg Road	East Avenue	11/14/14		GELCORE
A-1	Schaumburg Road	Friendship Drive/Branchwood Dr	12/20/12	12/20/12	DIALIGHT
A-1	Schaumburg Road	Grand Central Lane	03/06/12	03/06/12	DIALIGHT
A-1	Schaumburg Road	Hilltop Dr/ Post Office Dr	12/20/12	12/20/12	DIALIGHT
A-1	Schaumburg Road	Knollwood Drive	11/30/12	11/30/12	DIALIGHT
A-1	Schaumburg Road	Martingale Road	02/17/12		DIALIGHT
A-1	Schaumburg Road	National Parkway-Bar Harbor Dr	12/20/12	12/20/12	DIALIGHT
A-1	Schaumburg Road	Park Boulevard	11/24/14	11/24/14	GELCORE
A-1	Schaumburg Road	Pleasant-Town Square Dr	02/06/12	05/12/10	DIALIGHT PED-GE
A-1	Schaumburg Road	Salem Drive	10/18/13	10/18/13	GELCORE
A-1	Schaumburg Road	Summit Drive	12/20/12	12/20/12	DIALIGHT
A-1	Schaumburg Road	Walnut Lane	11/25/14	11/25/14	GELCORE
A-1	Schaumburg Road	Wildflower Lane	02/17/12		DIALIGHT
A-1	Shoe Factory Road	Maureen Drive	12/8/14	12/8/14	GELCORE

A-1	Springinsguth Rd	Schaumburg Road	NOV'13	NOV'13	GELCORE
A-1	State Street	Main Street	07/27/09	07/27/09	GELCORE
A-1	Steger Road	Union Street	05/27/15	05/27/15	GELCORE
A-1	Sunset Ridge Road	Skokie Road	NOV'13	05/21/13	GELCORE/ PED- DIALIGHT
A-1	Techy Road	Pfingsten Road	05/24/13	05/24/13	DIALIGHT
A-1	Vollmer Road	Central Avenue	04/23/12		DIALIGHT
A-1	Vollmer Road	Ridgeland Avenue	04/23/12		DIALIGHT
A-1	Wagner Road	Glenview Road	12/05/14	12/05/14	GELCORE
A-1	West Bartlett Road	Gifford Road	NOV'13	11/23/11	GELCORE PED-GE
A-1	West Bartlett Road	Naperville Road	07/11/11	07/11/11	DIALIGHT
A-1	West Lake Ave	Landwehr Road	08/04/05	08/04/08	DIALIGHT
A-1	West Lake Ave	Robin Lane/Glenbrook HS	NOV'13	NOV'13	GELCORE
A-1	Wise Road	Braintree Dr/Rodenburg Rd	12/05/14	12/05/14	GELCORE
A-1	Wise Road	Mitchell Blvd/Cedarcrest Dr	11/17/14	11/17/14	GELCORE
A-1	Wise Road	Salem Dr/Wright Boulevard	09/16/11	09/16/11	GELCORE
A-1	Wise Road	Springinsguth Road	NOV'13	NOV'13	GELCORE
A-1	Wolf Road	51st Street	11/06/14	11/06/14	GELCORE
A-1	Wolf Road	79th Street	10/13/11	10/13/11	DIALIGHT
A-1	Wolf Road	Butterfield Road	11/10/14	04/09/15	GELCORE
A-1	Wolf Road	Chestnut Street	11/06/14	11/06/14	GELCORE
A-1	Wolf Road	German Church Road	11/04/14		DIALIGHT
A-1	Wolf Road	Harrison Street	11/11/14		GELCORE
A-1	Wolf Road	Jackson Boulevard	11/10/14	11/10/14	GELCORE
A-1	Wolf Road	West Point Center(Hillside Shopping Center)	11/10/14		GELCORE
A-1	Wolf Road	Westbrook Corporate Center	12/20/12	12/20/12	DIALIGHT

A-2	175th Street	Oak Park Avenue	06/04/15	06/04/15	GELCORE
A-4	104th Avenue	Palos West School	05/31/12		GELCORE
A-4	123rd Street	Loveland Street	08/24/15		GELCORE
A-4	171st Street	Ashland Avenue	07/08/13		GELCORE
A-4	80th Avenue	S of Southwest Highway	07/20/13		GELCORE
A-4	Ela Road	South of Bradwell Road	04/28/11		GE
A-4	Joe Orr Road	Stony Island Avenue	07/20/15		GELCORE
A-4	Steger Road	Indiana Broder EB	07/08/13		GELCORE
A-4	Wagner Road	North of East Lake Avenue	06/04/12		DIALIGHT
A-4	Wolf Road	59th Street	08/24/15		GELCORE
A-4	Vollmer Road	Between Kedzie Avenue and Western Avenue	08/24/15		GELCORE
A-5	127th Street	Timberline Dr	06/22/10		GELCORE
A-5	80th Avenue	South of 179th Street	10/05/12		GELCORE
A-5	84th Avenue	Kirby School	11/20/13		GELCROE
A-5	Arlington Heights	Cosman Road	05/18/10		GELCORE
A-5	Central Ave	173rd Street	03/22/10		GELCORE
A-5	German Church Road	East of Wolf Road	10/13/13		DIALIGHT
A-5	Lake Avenue	Locust Road	11/22/13		GELCROE
A-5	Lake Avenue	Ridge Road	11/22/13		GELCROE
A-5	Roberts Road	97th Street	11/20/13		GELCORE
A-5	Sauk Trail	Arquilla Drive	09/29/09		GELCORE
A-5	Sauk Trail	Latonia Lane	09/29/09		GELCORE
A-5	Shoe Factory Road	CN Railroad	07/29/13		GELCORE
A-5	Shoe Factory Road	Higgins Road	01/28/08		GELCORE
A-5	Shoe Factory Road	West of Sutton Road	11/12/09		GELCORE
A-1	Crawford Avenue	Oakton Street	05/22/15	05/22/15	GELCORE
Under Constr.	Roselle Road	North of Central Road			

All LED signals are to be relamped every eight (8) years from date of installation



**VII LIST OF LED STREET NAME SIGN LOCATIONS  
(AS OF April 1, 2016)**

<b>Street Name 1</b>	<b>Street Name 2</b>	<b>Installation Date</b>
Arlington Heights Road	Biesterfield Road	10/23/2014
County Line Road	79th Street	02/24/2011
County Line Road	Burr Ridge Parkway	02/24/2011
County Line Road	Carriage Way	08/31/2010
County Line Road	German Church Road	08/18/2010
County Line Road	Plainfield Road	02/24/2011
Central Avenue	Southwest Highway	09/23/2015
Lake Avenue	Laramie Avenue	08/20/2014
Lake Cook Road	Arlington Heights Road	07/09/2009
Lake Cook Road	Buffalo Grove Road	07/09/2009
Lake Cook Road	Deer Park	11/25/2009
Lake Cook Road	Embassy Way/Birchwood Avenue	03/18/2016
Lake Cook Road	Lee/Ridge Road	12/03/2009
Lake Cook Road	Lexington Drive	12/03/2009
Lake Cook Road	McHenry Road	07/09/2009
Lake Cook Road	Northgate Parkway	12/03/2009
Lake Cook Road	Old Hicks Road	11/25/2009
Lake Cook Road	Pfingsten Road	12/03/2009
Lake Cook Road	Pine Street	03/18/2016
Lake Cook Road	Pine Tree Road/Carlisle Avenue	12/03/2009
Lake Cook Road	Plum Grove Road	11/25/2009
Lake Cook Road	Portwine Road	12/03/2009
Lake Cook Road	Raupp Boulevard	07/09/2009
Lake Cook Road	Skokie Road	12/03/2009
Lake Cook Road	Waukegan Road	07/31/2014
Lake Cook Road	Weidner Road	07/09/2009
Lake Cook Road	Weiland Road	12/03/2009
Lake Cook Road	Wilke Road	11/25/2009
Lake Cook Road	Wilmot Road	09/10/2010
Roselle Road	Bode Road	09/13/2010
Roselle Road	Central Road	01/12/2011

Roselle Road	Commerce Drive/Kristin Drive	09/13/2010
Roselle Road	Euclid Avenue	01/12/2011
Roselle Road	Hartford Drive	09/17/2010
Roselle Road	Hillcrest Boulevard	09/10/2010
Roselle Road	Nerge Road	09/17/2010
Roselle Road	Remington Road/Remington Circle	09/13/2010
Roselle Road	State Parkway/Valley Lake Drive	09/13/2010
Roselle Road	Weathersfield Way	09/13/2010
Roselle Road	Wise Road	01/12/2011
Sauk Trail	Amy Drive	10/01/2010
Sauk Trail	Central Park Avenue	10/01/2010
Sauk Trail	Cicero Avenue	10/01/2010
Sauk Trail	Blackhawk Drive	10/01/2010
Sauk Trail	Governors Highway	10/01/2010
Sauk Trail	Harlem Avenue	02/24/2011
Sauk Trail	Indianwood Boulevard	10/01/2010
Sauk Trail	Kalov Avenue	10/01/2010
Sauk Trail	Latonia Lane	10/01/2010
Sauk Trail	Orchard Drive	10/01/2010
Sauk Trail	Richton Square	10/01/2010
Sauk Trail	Shabbona Drive/Westwood Drive	10/01/2010
Sauk Trail	Thomas Drive	10/01/2010
Sauk Trail	Western Avenue	10/01/2010
Sauk Trail	Ridgeland Avenue	06/24/2011
Schaumburg Road	Salem Drive	10/18/2013
Vollmer Road	Central Avenue	01/24/2014
Vollmer Road	Ridgeland Avenue	01/24/2014

All LED street name signs are to be relamped every thirteen (13) years from date of installation

**VIII LIST OF SOLAR FLASHER AND  
RECTANGULAR RAPID FLASHING BEACONS  
(AS OF April 1, 2016)**

<b>Type</b>	<b>Street Name 1</b>	<b>Street Name 2</b>	<b>Installation Date</b>	<b>Installation Agency</b>
A-5	127 <sup>th</sup> Street	Timberline Drive	6/22/2010	Village of Lemont
A-5	80th Avenue	S of 179th Street	10/05/2012	Village of Tinley Park
A-5	84th Avenue	Kirby School	10/7/2005	Kirby School District 140
A-5	Arlington Heights Road	Cosman Road	5/18/2010	Cook County
A-5	Central Avenue	173 <sup>rd</sup> Street	3/22/2010	Arbor Park School District 145
A-5	German Church Road	East of Wolf Road	10/13/2013	Village of Willow Springs
A-5	Lake Avenue	Locust Road	9/26/2006	Village of Wilmette
A-5	Lake Avenue	Ridge Road	1/21/2005	Village of Wilmette
A-5	Roberts Road	97th Street	8/29/2005	City of Hickory Hills
A-5	Sauk Trail	Arquilla Drive	9/29/2009	Village of Richton Park
A-5	Sauk Trail	Latonia Lane	9/29/2009	Village of Richton Park
A-5	Shoe Factory Road	Higgins Road NB/SB	1/28/2008	Cook County
A-5	Shoe Factory Road	W of Sutton Road	10/2/2009	Cook County
A-5	Shoe Factory Road	CN Railroad	07/29/2013	CN Railroad Co
A-6	Busse Road	Lonnquist Blvd	09/11/2014	Village of Mt. Prospect

**COUNTY OF COOK  
CHICAGO, ILLINOIS  
PROPOSAL**

**CONTRACT NO.: 1628-15554**

*For a County Highway Maintenance in the County of Cook, State of Illinois,*

*known as Electrical and Mechanical Item Maintenance*

*Route Various Locations Section 17-8EMIM-00-GM*

*From Various Locations To \_\_\_\_\_*

**LOCATION OF MAINTENANCE**

The proposed maintenance is part of the public highway system in the County of Cook, State of Illinois, located by section and route before mentioned, and is indicated on the map showing the County Highway System on file in the office of the County Clerk and also in the office of the Illinois Department of Transportation, Division of Highways, Springfield, Illinois.

Various locations throughout Cook County

**DESCRIPTION OF MAINTENANCE**

The contract is for maintenance of (1) Traffic Signal Installations, (2) Street and Roadway Lighting Systems, (3) Navigation Lighting Systems, Bridge Cathodic Protection Systems, (4) Storm Water Pump Station Systems, and (5) Maintenance Facilities Electrical Systems and their appurtenances, located in Cook County.

The Contractor, for specified unit prices listed under schedule of prices, shall: (1) furnish all labor and provide materials to maintain the respective installations and systems, in first class working order and operating condition at all times, (2) make permanent repairs to damaged equipment, (3) clean, repair, perform preventative maintenance, and overhaul specified equipment at stated intervals of time, (4) provide the necessary transportation for workmen, material, and equipment used to execute the terms of the Contract, (5) PROVIDE CONTINUOUS MAINTENANCE AND REPAIR SERVICE, INCLUDING SATURDAYS, SUNDAYS

AND HOLIDAYS to correct any malfunction of equipment or effect any temporary emergency repairs to missing, defective, displaced or damaged equipment resulting from any cause in the shortest possible time, (6) patrol and inspect the respective systems for lamps and other failures and non-operative equipment, shall replace electric lamps in all systems as required, and (7) execute Specialty Items for unit prices as directed by the Engineer, and perform all activities required herein.

**NOTICE TO CONTRACTOR**

Any erasures or alterations in the unit prices and/or in the products of the respective quantities and unit prices in the Proposal, must be properly authenticated by the Bidder by initialing in ink such erasures or alterations to avoid cause for rejection of the Proposal in accordance with Article 102 of the Standard Specifications for Road and Bridge Construction, latest edition.

The Contractor, for specified unit prices listed under the Schedule of Prices, shall conform to all requirements as specified herein these articles. Each pay item shall have a unit price and a total price. The unit prices bid are in U.S. dollars and cents. 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. If a unit price is omitted, the total price will be divided by the quantity in order to establish a unit price. A bid will be declared unacceptable if neither unit price nor a total price is shown.

The Department is under no obligation to authorize non-routine pay item work. Non-routine work will be authorized based on preventative maintenance assessments, ongoing operational needs and system inspections.

The quantities shown in the Schedule of Prices reflects the total number of Traffic Signal Systems, Street and Roadway Lighting Systems, Navigation Lighting Systems, Bridge Cathodic Protection Systems, Storm Water Pumping Station Systems, and Maintenance Facilities Electrical Systems anticipated to be maintained and the anticipated quantities for Specialty Items to be used for the duration of this Contract. The attached List of Locations indicates the Traffic Signal Installations, Street and Roadway Lighting Systems, Navigation Lighting Systems, Bridge Cathodic Protection Systems, Storm Water Pumping Station Systems, and Maintenance Facilities Electrical Systems currently being maintained by the Cook County Department of Transportation and Highways as of April 1, 2016.

All installations listed on the Maintenance Listing elsewhere in this Contract, and any additions given to the Contractor before December 31, 2016 will be accepted by the Contractor as is.

The Contractor will only be paid for the maintenance of each Traffic Signal System, Street and Roadway Lighting System, Navigation Lighting System, Bridge Cathodic Protection System, Storm Water Pumping Station System, and Maintenance Facilities Electrical Systems actually maintained and each Specialty Item actually used and will be notified in writing which items are to be billed.

CONTRACTOR NAME: Meade, Inc.

Section No:

**SCHEDULE OF PRICES**

ITEM NO.	QUAN-TITIES	UNIT	PAY ITEM	UNIT COST	TOTAL COST
TRAFFIC SIGNAL ROUTINE MAINTENANCE ITEMS:				PER MONTH PER INSTALLATION	
A-1	350	EACH	TRAFFIC SIGNAL INSTALLATION	463.00	162,050.00
A-2	10	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION	4.00	40.00
A-3	5	EACH	FLASHING BEACON INSTALLATION - OVERHEAD	4.00	20.00
A-4	56	EACH	FLASHING BEACON INSTALLATION - POST MOUNTED	4.00	224.00
A-5	40	EACH	SOLAR FLASHING BEACON INSTALLATION - POST MOUNTED	4.00	160.00
A-6	5	EACH	RETANGULAR RAPID FLASHING BEACON SYSTEM	10.00	50.00
A-7	14	EACH	SPEED SIGN INSTALLATION	10.00	140.00
A-8	1	EACH	ADVANCED RAILROAD WARNING SYSTEM	103.00	103.00
A-9	1	EACH	CLOSED LOOP SYSTEM MONITORING	11,534.00	11,534.00
TRAFFIC SIGNAL SPECIALTY ITEMS:				UNIT COST	
AX-1	40	EACH	PAINT TRAFFIC SIGNAL INSTALLATION	400.00	16,000.00
AX-2	10	EACH	PAINT FLASHING BEACON INSTALLATION	10.00	100.00
AX-3	5	EACH	PAINT TEMPORARY TRAFFIC SIGNAL INSTALLATION	1.00	5.00
AX-4	5	EACH	PAINT TRAFFIC SIGNAL CONTROLLER CABINET	25.00	125.00
AX-5	20	EACH	PAINT TRAFFIC SIGNAL INSTALLATION BACKPLATES	10.00	200.00
AY-1	10	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION TYPE - 1	100.00	1,000.00
AY-2	5	EACH	TEMPORARY TRAFFIC SIGNAL INSTALLATION TYPE - 2	100.00	500.00
AY-3	10	EACH	REMOVE TEMPORARY TRAFFIC SIGNAL INSTALLATION	1.00	10.00
AZ-1	2	EACH	FULL ACTUATED CONTROLLER, IN TYPE III CABINET	20.00	40.00
AZ-2	10	EACH	FULL ACTUATED CONTROLLER, IN TYPE IV CABINET	500.00	5,000.00
AZ-3	10	EACH	FULL ACTUATED CONTROLLER, IN TYPE V CABINET	250.00	2,500.00
AZ-4	3	EACH	FULL ACTUATED CONTROLLER, IN TYPE IV CABINET - RAILROAD	1,000.00	3,000.00
AZ-5	15	EACH	FULL ACTUATED CONTROLLER, IN EXISTING CABINET	200.00	3,000.00
AZ-6	3	EACH	FLASHER CONTROLLER WITHOUT CABINET, SOLID STATE - NEMA	10.00	30.00
AZ-7	30	EACH	TRAFFIC SIGNAL CABINET LOAD SWITCH	18.00	540.00
AZ-8	25	EACH	INDUCTIVE LOOP DETECTOR	30.00	750.00
AZ-9	2	EACH	CABINET FOR EXISTING TRAFFIC SIGNAL CONTROLLER, TYPE III	10.00	20.00
AZ-10	2	EACH	CABINET FOR EXISTING TRAFFIC SIGNAL CONTROLLER, TYPE IV	20.00	40.00
AZ-11	2	EACH	CABINET FOR EXISTING TRAFFIC SIGNAL CONTROLLER, TYPE V	20.00	40.00
AZ-12	10	EACH	INSTALL EXISTING TRAFFIC SIGNAL CONTROLLER CABINET	20.00	200.00
AZ-13	10	EACH	INSTALL EXISTING TRAFFIC SIGNAL CONTROLLER	5.00	50.00

(CONTINUED ON NEXT PAGE)

CONTRACTOR NAME: Meade, Inc.

Section No:

**SCHEDULE OF PRICES**

ITEM NO.	QUAN-TITIES	UNIT	PAY ITEM	UNIT COST	TOTAL COST
AZ-14	20	EACH	MODIFY EXISTING TRAFFIC SIGNAL CONTROLLER, PER PHASE	5.00	100.00
AZ-15	30	EACH	UPDATED PROM SET	350.00	10,500.00
AZ-16	3	EACH	MASTER CONTROLLER	1,000.00	3,000.00
AZ-17	40	EACH	SYSTEM PROGRAMMING	50.00	2,000.00
AZ-18	40	EACH	CONTROLLER DATA CONVERSION	50.00	2,000.00
AZ-19	20	EACH	TRANSCEIVER, FIBER OPTIC	10.00	200.00
AZ-20	2	EACH	DIGITAL TIME SWITCH	10.00	20.00
AZ-21	10	EACH	CONFLICT MONITOR	300.00	3,000.00
AZ-22	5	EACH	POLICE DOOR MANUAL CONTROL	20.00	100.00
AZ-23	8	EACH	LIGHT DETECTOR AMPLIFIER	15.00	120.00
AZ-24	16	EACH	LIGHT DETECTOR	15.00	240.00
AZ-25	5	EACH	CONFIRMATION BEACON SYSTEM, LED	200.00	1,000.00
AZ-26	5	EACH	RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, PHASING UNIT	10.00	50.00
AZ-27	10	EACH	RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT	10.00	100.00
AZ-28	2	EACH	LIGHT TRANSMITTER	10.00	20.00
AZ-29	2000	FOOT	ELECTRIC CABLE IN CONDUIT NO. 20 3C, TWISTED AND SHIELDED	0.10	200.00
AZ-30	5	EACH	VIDEO DETECTION SYSTEM, COMPLETE INTERSECTION	500.00	2,500.00
AZ-31	10	EACH	VIDEO DETECTION SYSTEM, (SINGLE CAMERA/PROCESSOR)	250.00	2,500.00
AZ-32	6000	FOOT	DETECTOR LOOP, TYPE I	1.00	6,000.00
AZ-33	500	FOOT	DETECTOR LOOP, PRE-FORMED	1.00	500.00
AZ-34	2	EACH	WIRELESS DETECTION SYSTEM, COMPLETE INTERSECTION	250.00	500.00
AZ-35	4	EACH	WIRELESS DETECTION SYSTEM, SINGLE APPROACH	100.00	400.00
AZ-36	20	EACH	RADAR PRESENCE DETECTOR	250.00	5,000.00
AZ-37	5	EACH	WIRELESS INTERCONNECT SYSTEM	250.00	1,250.00
AZ-38	12	EACH	INSTALL TRAFFIC SIGNAL SECTION	1.00	12.00
AZ-39	12	EACH	INSTALL TRAFFIC SIGNAL LENS	0.10	1.20
AZ-40	5	EACH	OPTICALLY PROGRAMMED SIGNAL HEAD, LED, 1-FACE, 3-SECTION	100.00	500.00
AZ-41	2	EACH	OPTICALLY PROGRAMMED SIGNAL HEAD, LED, 1-FACE, 4-SECTION	10.00	20.00
AZ-42	5	EACH	OPTICALLY PROGRAMMED SIGNAL HEAD, LED, 1-FACE, 5-SECTION	100.00	500.00
AZ-43	10	EACH	SIGNAL HEAD, LED, 1-FACE, 1-SECTION	50.00	500.00
AZ-44	30	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION	125.00	3,750.00
AZ-45	8	EACH	SIGNAL HEAD, LED, 1-FACE, 4-SECTION	100.00	800.00

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CONTRACTOR NAME: Meade, Inc.

Section No:

17-8EMIM-00-GM

**SCHEDULE OF PRICES**

ITEM NO.	QUANTITIES	UNIT	PAY ITEM	UNIT COST	TOTAL COST
AZ-46	30	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION	200.00	6,000.00
AZ-47	10	EACH	PEDESTRIAN SIGNAL HEAD, LED, 1-FACE	200.00	2,000.00
AZ-48	20	EACH	SIGNAL HEAD, LED, 1-FACE, 1-SECTION, RETROFIT	40.00	800.00
AZ-49	20	EACH	SIGNAL HEAD, LED, 1-FACE, 3-SECTION, RETROFIT	90.00	1,800.00
AZ-50	8	EACH	SIGNAL HEAD, LED, 1-FACE, 4-SECTION, RETROFIT	100.00	800.00
AZ-51	20	EACH	SIGNAL HEAD, LED, 1-FACE, 5-SECTION, RETROFIT	150.00	3,000.00
AZ-52	10	EACH	PEDESTRIAN SIGNAL HEAD, LED, 1-FACE, RETROFIT	90.00	900.00
AZ-53	20	EACH	CONFIRMATION BEACON, RETROFIT	25.00	500.00
AZ-54	40	EACH	PEDESTRIAN COUNTDOWN SIGNAL HEAD, LED, 1-FACE	300.00	12,000.00
AZ-55	8	EACH	ACCESSIBLE PEDESTRIAN SIGNAL	100.00	800.00
AZ-56	4	EACH	ILLUMINATED SIGN, LED	1,200.00	4,800.00
AZ-57	20	EACH	ILLUMINATED STREET NAME SIGN, LED (4 Foot)	400.00	8,000.00
AZ-58	50	EACH	ILLUMINATED STREET NAME SIGN, LED (6 Foot)	850.00	42,500.00
AZ-59	50	EACH	ILLUMINATED STREET NAME SIGN, LED (8 Foot)	1,250.00	62,500.00
AZ-60	16	EACH	RELOCATE ILLUMINATED STREET NAME SIGN	50.00	800.00
AZ-61	50	EACH	TRAFFIC SIGNAL BACKPLATE, LOUVERED, ALUMINUM	5.00	250.00
AZ-62	30	EACH	TRAFFIC SIGNAL BACKPLATE, REFLECTIVE	70.00	2,100.00
AZ-63	10	EACH	FLASHING BEACON, LOW MOUNTED, ONE FACE	30.00	300.00
AZ-64	5	EACH	FLASHING BEACON, SPAN WIRE MOUNTED, ANY NUMBER OF FACES AS ONE SIGNAL HEAD	40.00	200.00
AZ-65	4	EACH	FLASHING BEACON, LOW MOUNTED, ONE FACE, SOLAR POWERED	100.00	400.00
AZ-66	4	EACH	FLASHING BEACON, LOW MOUNTED, ONE FACE, SOLAR POWERED WITH PROGRAMMABLE TIME CLOCK	1,200.00	4,800.00
AZ-67	20	EACH	UNINTERRUPTIBLE POWER SUPPLY	1,500.00	30,000.00
AZ-68	30	EACH	RELOCATE EXISTING TRAFFIC SIGNAL HEAD	2.00	60.00
AZ-69	10	EACH	RELOCATE EXISTING TRAFFIC SIGNAL POST	5.00	50.00
AZ-70	20	EACH	TRAFFIC SIGNAL POST, 3' TO 18' LONG	300.00	6,000.00
AZ-71	5	EACH	PEDESTRIAN PUSHBUTTON POST	4.00	20.00
AZ-72	5	EACH	PEDESTRIAN PUSHBUTTON POST, TYPE A	7.00	35.00
AZ-73	20	EACH	PEDESTRIAN PUSHBUTTON	50.00	1,000.00
AZ-74	2	EACH	STEEL MAST ARM ASSEMBLY AND POLE (MAST ARM 16' TO 28')	100.00	200.00
AZ-75	4	EACH	STEEL MAST ARM ASSEMBLY AND POLE (MAST ARM 30' TO 44')	100.00	400.00
AZ-76	2	EACH	STEEL MAST ARM ASSEMBLY AND POLE (MAST ARM 46' TO 55')	100.00	200.00
AZ-77	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE (MAST ARM 56' TO 65')	100.00	100.00

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CONTRACTOR NAME: Meade, Inc.

Section No:

**SCHEDULE OF PRICES**

ITEM NO.	QUAN-TITIES	UNIT	PAY ITEM	UNIT COST	TOTAL COST
AZ-78	1	EACH	STEEL MAST ARM ASSEMBLY AND POLE (MAST ARM 66' TO 75')	100.00	100.00
AZ-79	2	EACH	INSTALL EXISTING MAST ARM ASSEMBLY AND POLE	20.00	40.00
AZ-80	8	EACH	REMOVE EXISTING MAST ARM ASSEMBLY AND POLE	10.00	80.00
AZ-81	10	EACH	REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT	10.00	100.00
AZ-82	4	EACH	REMOVE EXISTING TRAFFIC SIGNAL HEAD	1.00	4.00
AZ-83	4	EACH	REMOVE EXISTING TRAFFIC SIGNAL SECTION	1.00	4.00
AZ-84	20	EACH	REMOVE EXISTING TRAFFIC SIGNAL POST	1.00	20.00
AZ-85	3000	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL - NO. 14 2C	0.02	60.00
AZ-86	3000	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL - NO. 14 3C	0.03	90.00
AZ-87	3000	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL - NO. 14 5C	0.05	150.00
AZ-88	3000	FOOT	ELECTRIC CABLE IN CONDUIT, SIGNAL - NO. 14 7C	0.07	210.00
AZ-89	5000	FOOT	ELECTRIC CABLE IN CONDUIT, LEAD IN - NO. 14 1 PAIR	0.20	1,000.00
AZ-90	1000	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE - NO. 4 2C	0.40	400.00
AZ-91	1000	FOOT	ELECTRIC CABLE IN CONDUIT, SERVICE - NO. 6 2C	0.25	250.00
AZ-92	14000	FOOT	ELECTRIC CABLE IN CONDUIT, STREET NAME SIGN, NO. 14 3C, TYPE SOOW	0.70	9,800.00
AZ-93	3000	FOOT	ELECTRIC CABLE IN CONDUIT, COMMUNICATION - NO. 18 3 PAIR	0.01	30.00
AZ-94	500	FOOT	ELECTRIC CABLE IN CONDUIT, RAILROAD - NO. 14 3C	0.90	450.00
AZ-95	3000	FOOT	ELECTRIC CABLE IN CONDUIT, VIDEO DETECTOR	0.20	600.00
AZ-96	500	FOOT	ELECTRIC CABLE - AERIAL, NO. 4, 2C	0.02	10.00
AZ-97	500	FOOT	ELECTRIC CABLE - AERIAL, NO. 6, 2C	0.02	10.00
AZ-98	2000	FOOT	ELECTRIC CABLE - AERIAL, NO. 14, 2C	0.02	40.00
AZ-99	2000	FOOT	ELECTRIC CABLE - AERIAL, NO. 14, 3C	0.02	40.00
AZ-100	3000	FOOT	ELECTRIC CABLE - AERIAL, NO. 14, 5C	0.02	60.00
AZ-101	3000	FOOT	ELECTRIC CABLE - AERIAL, NO. 14, 7C	0.02	60.00
AZ-102	3000	FOOT	ELECTRIC CABLE - AERIAL, LEAD IN - NO. 14, 2C, TWISTED AND SHIELDED	0.02	60.00
AZ-103	4000	FOOT	ELECTRIC CABLE, RADAR PRESENCE DETECTOR	0.50	2,000.00
AZ-104	9000	FOOT	FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125 MM 12F SM 24F	0.50	4,500.00
AZ-105	3000	FOOT	FIBER OPTIC CABLE - AERIAL, NO. 62.5/125 MM 12F SM 24F	1.00	3,000.00
AZ-106	9000	FOOT	ELECTRIC CABLE IN CONDUIT, TRACER NO. 14 1C	0.01	90.00
AZ-107	40	EACH	SPLICE FIBER IN CABINET	40.00	1,600.00
AZ-108	1000	FOOT	ELECTRIC CABLE IN CONDUIT, GROUNDING NO. 6 1C	0.60	600.00
AZ-109	25	EACH	GROUNDING EXISTING HANDHOLE FRAME AND COVER	100.00	2,500.00

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CONTRACTOR NAME: Meade, Inc.

Section No:

17-8EMIM-00-GM

**SCHEDULE OF PRICES**

ITEM NO.	QUAN-TITIES	UNIT	PAY ITEM	UNIT COST	TOTAL COST
AZ-110	60	FOOT	CONCRETE FOUNDATION, TYPE A	25.00	1,500.00
AZ-111	40	FOOT	CONCRETE FOUNDATION, TYPE C	25.00	1,000.00
AZ-112	20	FOOT	CONCRETE FOUNDATION, TYPE D	25.00	500.00
AZ-113	140	FOOT	CONCRETE FOUNDATION, TYPE E (30", 36" OR 42")	50.00	7,000.00
AZ-114	5	EACH	MODIFY EXISTING TYPE D FOUNDATION	25.00	125.00
AZ-115	150	FOOT	PAVEMENT MARKING LINE 24 INCH	0.50	75.00
LIGHTING ROUTINE MAINTENANCE ITEMS:				PER MONTH PER INSTALLATION	
B-1a	10	EACH	LIGHTING UNIT, LESS THAN 38 FEET, MERCURY VAPOR	1.00	10.00
B-1b	1	EACH	LIGHTING UNIT, LESS THAN 38 FEET, INCANDESCENT	1.00	1.00
B-1c	1	EACH	LIGHTING UNIT, LESS THAN 38 FEET, FLUORESCENT	1.00	1.00
B-1d	140	EACH	LIGHTING UNIT, LESS THAN 38 FEET, HIGH PRESSURE SODIUM	5.00	700.00
B-1e	120	EACH	LIGHTING UNIT, LESS THAN 38 FEET, LOW PRESSURE SODIUM	3.00	360.00
B-1f	30	EACH	LIGHTING UNIT, LESS THAN 38 FEET, METAL HALIDE	5.00	150.00
B-1g	90	EACH	LIGHTING UNIT, LESS THAN 38 FEET, LED	3.50	315.00
B-2a	1	EACH	LIGHTING UNIT, MORE THAN 38 FEET, LESS THAN 80 FEET, MERCURY VAPOR	0.10	0.10
B-2b	1	EACH	LIGHTING UNIT, MORE THAN 38 FEET, LESS THAN 80 FEET, INCANDESCENT	0.10	0.10
B-2c	120	EACH	LIGHTING UNIT, MORE THAN 38 FEET, LESS THAN 80 FEET, HIGH PRESSURE SODIUM	1.00	120.00
B-2d	1	EACH	LIGHTING UNIT, MORE THAN 38 FEET, LESS THAN 80 FEET, METAL HALIDE	1.00	1.00
B-2e	50	EACH	LIGHTING UNIT, MORE THAN 38 FEET, LESS THAN 80 FEET, LED	5.00	250.00
B-3a	2	EACH	LIGHTING UNIT, 80 FEET OR MORE, HIGH PRESSURE SODIUM	1.00	2.00
B-3b	1	EACH	LIGHTING UNIT, 80 FEET OR MORE, METAL HALIDE	1.00	1.00
LIGHTING SPECIALTY ITEMS:				UNIT COST	
BU-1	10	EACH	REPLACE LIGHT STANDARD SHAFT (LABOR ONLY)	5.00	50.00
BU-2	10	EACH	REPLACE ONE OR TWO MAST ARMS ON ONE LIGHT STANDARD (LABOR ONLY)	5.00	50.00
BU-3	10	EACH	REPLACE TRANSFORMER BASE (LABOR ONLY)	200.00	2,000.00
BU-4	10	EACH	REPLACE ONE OR TWO LUMINAIRES ON ONE LIGHT STANDARD (LABOR ONLY)	5.00	50.00
BU-5a	10	EACH	FURNISH LIGHT STANDARD SHAFT 32' OR LESS, 8" DIA. (MATERIAL ONLY)	200.00	2,000.00
BU-5b	5	EACH	FURNISH LIGHT STANDARD SHAFT 33' OR MORE, 8" DIA. (MATERIAL ONLY)	200.00	1,000.00
BU-5c	5	EACH	FURNISH LIGHT STANDARD SHAFT 40' OR LESS, 10" DIA. (MATERIAL ONLY)	200.00	1,000.00
BU-5d	5	EACH	FURNISH LIGHT STANDARD SHAFT 41' OR MORE, 10" DIA. (MATERIAL ONLY)	200.00	1,000.00
BU-5e	1	EACH	FURNISH LIGHT STANDARD SHAFT 80' OR MORE, GREATER THAN 10" DIA. (MATERIAL ONLY)	200.00	200.00
BU-6a	5	EACH	FURNISH MAST ARM 10' OR LESS (MATERIAL ONLY)	50.00	250.00

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CONTRACTOR NAME: Meade, Inc.

Section No:

**SCHEDULE OF PRICES**

ITEM NO.	QUAN-TITIES	UNIT	PAY ITEM	UNIT COST	TOTAL COST
BU-6b	5	EACH	FURNISH MAST ARM 11' OR MORE (MATERIAL ONLY)	5.00	25.00
BU-7a	10	EACH	FURNISH LUMINAIRE AND LAMP, MERCURY VAPOR, 175W TO 400W (MATERIAL ONLY)	10.00	100.00
BU-7b	1	EACH	FURNISH LUMINAIRE AND LAMP, MERCURY VAPOR, 1000W (MATERIAL ONLY)	20.00	20.00
BU-7c	10	EACH	FURNISH LUMINAIRE AND LAMP, HIGH PRESSURE SODIUM, UNDER 200W (MATERIAL ONLY)	50.00	500.00
BU-7d	10	EACH	FURNISH LUMINAIRE AND LAMP, HIGH PRESSURE SODIUM, 200W TO 400W (MATERIAL ONLY)	15.00	150.00
BU-7e	5	EACH	FURNISH LUMINAIRE AND LAMP, HIGH PRESSURE SODIUM, 1000W (MATERIAL ONLY)	10.00	50.00
BU-7f	5	EACH	FURNISH LUMINAIRE AND LAMP, LOW PRESSURE SODIUM, UNDER 60W (MATERIAL ONLY)	20.00	100.00
BU-7g	5	EACH	FURNISH LUMINAIRE AND LAMP, LOW PRESSURE SODIUM, 90W TO 180W (MATERIAL ONLY)	20.00	100.00
BU-7h	1	EACH	FURNISH LUMINAIRE AND LAMP, METAL HALIDE, 175W TO 400W (MATERIAL ONLY)	200.00	200.00
BU-7i	1	EACH	FURNISH LUMINAIRE AND LAMP, METAL HALIDE, 1000W (MATERIAL ONLY)	50.00	50.00
BU-7j	10	EACH	FURNISH LUMINAIRE AND LAMP, LED, 100W-210W (MATERIAL ONLY)	300.00	3,000.00
BU-8	1	EACH	REPLACE HIGH MAST LOWERING DEVICE	50.00	50.00
BU-9	5	EACH	REPLACE LIGHT STANDARD FOUNDATION, CONCRETE	50.00	250.00
BU-10	5	EACH	REPLACE LIGHT STANDARD FOUNDATION, METAL	50.00	250.00
BW-1	1	EACH	PAINT HIGH MAST LIGHT POLE INCLUDING BLAST CLEANING DESIGN AND IMPLEMENT A DECAL BASED NUMBERING SYSTEM FOR ALL HIGHWAY LIGHTING SYSTEMS	1.00	1.00
BW-2	1	EACH	PAINT HIGH MAST LIGHT POLE INCLUDING BLAST CLEANING DESIGN AND IMPLEMENT A DECAL BASED NUMBERING SYSTEM FOR ALL HIGHWAY LIGHTING SYSTEMS	1.00	1.00
BX-1	15	EACH	GROUP REPLACEMENT OF MERCURY VAPOR LAMPS	1.00	15.00
BX-2	180	EACH	GROUP REPLACEMENT OF HIGH PRESSURE SODIUM LAMPS	20.00	3,600.00
BX-3	100	EACH	GROUP REPLACEMENT OF LOW PRESSURE SODIUM LAMPS	5.00	500.00
BX-4	50	EACH	GROUP REPLACEMENT OF METAL HALIDE LAMPS	20.00	1,000.00
BY-1	1000	FOOT	REPLACE FAULTY CABLE FOR STREET AND ROADWAY LIGHTING SYSTEM	0.05	50.00
BZ-1	50	EACH	SPECIAL CLEANING OF LUMINAIRES, STANDARD UNIT OVER 30'	4.00	200.00
BZ-2	1	EACH	SPECIAL CLEANING OF LUMINAIRES, HIGH MAST UNIT OVER 80', WITH LOWERING DEVICE	0.10	0.10
BZ-3	50	EACH	SPECIAL CLEANING OF LUMINAIRES, UNDERPASS UNIT UNDER 30'	5.00	250.00
NAVIGATION LIGHTING AND BRIDGE CATHODIC PROTECTION ROUTINE MAINTENANCE ITEMS:				PER MONTH PER INSTALLATION	
C-1	5	EACH	NAVIGATION LIGHTING SYSTEM	12.00	60.00
C-2	5	EACH	BRIDGE CATHODIC PROTECTION SYSTEM	10.00	50.00
NAVIGATION LIGHTING AND CATHODIC PROTECTION SPECIALTY ITEMS:				UNIT COST	
CX-1	25	EACH	REPLACE BROKEN LENSES	1.00	25.00
CY-1	12	EACH	REPLACE NAVIGATION LIGHTING UNIT	3.00	36.00
CZ-1	10	EACH	REBRAZE LEAD WIRE TO STEEL REINFORCEMENT BAR	4.00	40.00
CZ-2	500	SQ FT	REPAIR ANODE MESH	1.00	500.00

CONTRACTOR NAME: Meade, Inc.

Section No:

**SCHEDULE OF PRICES**

ITEM NO.	QUAN-TITIES	UNIT	PAY ITEM	UNIT COST	TOTAL COST
<b>PUMPING STATION ROUTINE MAINTENANCE ITEMS:</b>				<b>PER MONTH PER INSTALLATION</b>	
D-1	1	EACH	PUMPING STATION NO. 1, East Lake Avenue @ N. Branch, Chicago River: 4-15,000 GPM pumps, 1-500 GPM sump pump	1,900.00	1,900.00
D-2	1	EACH	PUMPING STATION NO. 2, East Lake Avenue @ C & NW RR E. of Pfingsten: 4-4,200 GPM pumps	1,500.00	1,500.00
D-3	1	EACH	PUMPING STATION NO. 3, Sauk Trail @ ICG RR: 3-2,000 GPM pumps	1,500.00	1,500.00
D-4	1	EACH	PUMPING STATION NO. 4, Lake-Cook Road @ METRA RR W. of Waukegan Road: 3-4,200 GPM pumps	1,500.00	1,500.00
D-5	1	EACH	PUMPING STATION NO. 5, Lake-Cook Road @ UP RR W. of Skokie Road: 3-2,160 GPM pumps	1,500.00	1,500.00
D-6	1	EACH	PUMPING STATION NO. 6, 171st Street @ Ashland Avenue: Submersible Type with 2-3,590 GPM pumps (High Flow) and 2-875 GPM pumps (Low Flow), 1/3 HP Sump Pump	1,500.00	1,500.00
D-7	1	EACH	PUMPING STATION NO. 7, Green Bay Road @ Lake Avenue: Submersible Type with 2-275 GPM pumps	1,500.00	1,500.00
<b>PUMPING STATION SPECIALTY ITEMS:</b>				<b>UNIT COST</b>	
DX-1	6	EACH	SPECIAL CLEANING OF WET PITS	50.00	300.00
DX-2	500	SQ YD	ASPHALT DRIVEWAY PAVEMENT	1.00	500.00
DX-3	1000	SQ FT	EXTERIOR BRICK COATING	1.00	1,000.00
DX-4	24	HOUR	INFRARED THERMOGRAPHY INSPECTION SERVICE	40.00	960.00
DX-5	5	EACH	HID LIGHT FIXTURE	40.00	200.00
DX-6	6	EACH	SWITCH GEAR SYSTEM INSPECTION	100.00	600.00
DX-7	1	EACH	PUMP UNIT ASSEMBLY REMOVAL AND REINSTALLATION	17,500.00	17,500.00
DX-8	1	EACH	PUMP BOWL ASSEMBLY	9,500.00	9,500.00
DX-9	1	EACH	PUMP SHAFT ASSEMBLY	9,500.00	9,500.00
<b>EXTRA WORK SPECIALTY ITEMS:</b>					
EX-1	100000	UNIT	REGULAR WORK SPECIAL	\$ 1.00	100,000.00
EX-2	1000	HOUR	LABOR TO UPGRADE ALL ELECTRICAL SYSTEMS EXCEPT THOSE IN THE MAINTENANCE FACILITIES	1.00	1,000.00
<b>MAINTENANCE FACILITIES ROUTINE MAINTENANCE ITEMS:</b>				<b>PER MONTH PER INSTALLATION</b>	
F-1	5	EACH	MAINTENANCE FACILITIES ELECTRICAL SYSTEMS ROUTINE MAINTENANCE	2,153.00	10,765.00
<b>MAINTENANCE FACILITIES SPECIALTY ITEMS:</b>				<b>UNIT COST</b>	
FX-1	1000	HOUR	LABOR TO UPGRADE ELECTRICAL SYSTEMS	1.00	1,000.00
FX-2	2	EACH	THERMO GRAPHIC INSPECTION	200.00	400.00
<b>GENERAL SPECIALTY ITEMS:</b>				<b>UNIT COST</b>	
GX-1	100	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, - 1 1/4 INCH	1.00	100.00
GX-2	200	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 1 1/2 INCH	1.00	200.00
GX-3	6500	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2 INCH	1.00	6,500.00
GX-4	900	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 2 1/2 INCH	1.00	900.00

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CONTRACTOR NAME: Meade, Inc.

Section No:

**SCHEDULE OF PRICES**

ITEM NO.	QUAN-TITIES	UNIT	PAY ITEM	UNIT COST	TOTAL COST
GX-5	900	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 3 INCH	1.00	900.00
GX-6	900	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 3 1/2 INCH	1.00	900.00
GX-7	2500	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 4 INCH	1.00	2,500.00
GX-8	400	FOOT	UNDERGROUND CONDUIT, GALVANIZED STEEL, 5 INCH	1.00	400.00
GX-9	500	FOOT	UNDERGROUND CONDUIT, P.V.C., 1 1/2 INCH	1.00	500.00
GX-10	500	FOOT	UNDERGROUND CONDUIT, P.V.C., 2 INCH	1.00	500.00
GX-11	100	FOOT	UNDERGROUND CONDUIT, P.V.C., 2 1/2 INCH	1.00	100.00
GX-12	100	FOOT	UNDERGROUND CONDUIT, P.V.C., 3 INCH	1.00	100.00
GX-13	100	FOOT	UNDERGROUND CONDUIT, P.V.C., 4 INCH	1.00	100.00
GX-14	100	FOOT	UNDERGROUND CONDUIT, P.V.C., 5 INCH	1.00	100.00
GX-15	1000	FOOT	COILABLE NON-METALLIC CONDUIT	1.00	1,000.00
GX-16	5000	FOOT	REMOVE ELECTRIC CABLE FROM CONDUIT	0.10	500.00
GX-17	10	EACH	SERVICE INSTALLATION, POLE MOUNT	500.00	5,000.00
GX-18	5	EACH	SERVICE INSTALLATION, GROUND MOUNT	500.00	2,500.00
GX-19	2	EACH	COMBINATION LIGHTING AND TRAFFIC SIGNAL SERVICE INSTALLATION, POLE MOUNTED	250.00	500.00
GX-20	10	EACH	RELOCATE SERVICE INSTALLATION	200.00	2,000.00
GX-21	10	EACH	HANDHOLE	25.00	250.00
GX-22	10	EACH	HEAVY DUTY HANDHOLE	50.00	500.00
GX-23	2	EACH	DOUBLE HANDHOLE	100.00	200.00
GX-24	10	EACH	REBUILD EXISTING HANDHOLE	50.00	500.00
GX-25	10	EACH	REMOVE EXISTING CONCRETE FOUNDATION	1.00	10.00
GX-26	10	EACH	REMOVE EXISTING HANDHOLE	1.00	10.00
GX-27	25	EACH	DRILL EXISTING HANDHOLE	5.00	125.00
GX-28	200	SQ FT	MEDIAN REMOVAL AND REPLACEMENT	1.00	200.00
GX-29	200	SQ FT	SIDEWALK REMOVAL AND REPLACEMENT	1.00	200.00
GX-30	500	FOOT	ROD AND CLEAN EXISTING CONDUIT	1.00	500.00

CONTRACTOR NAME: Meade, Inc.

**SCHEDULE OF PRICES  
SUMMARY SHEET**

Section No: 17-8EMIM-00-GM

ITEM	MONTHLY ROUTINE MAINTENANCE PER ITEM		YEARLY ROUTINE MAINTENANCE PER ITEM	YEARLY SPECIAL ITEM	
A-1 THRU A-9	\$ 174,321.00	X12	\$ 2,091,852.00	-----	-----
AX-1 THRU AX-5	-----		-----	\$ 16,430.00	-----
AY-1 THRU AY-3	-----		-----	1,510.00	-----
AZ-1 THRU AZ-115	-----		-----	294,066.20	-----
<b>SUBTOTAL A</b>	-----		-----	-----	\$ 2,403,858.20
B-1 THRU B-3	1,911.20	X12	22,934.40	-----	-----
BU-1 THRU BU-10	-----		-----	12,445.00	-----
BW-1 THRU BW-2	-----		-----	2.00	-----
BX-1 THRU BX-4	-----		-----	5,115.00	-----
BY-1	-----		-----	50.00	-----
BZ-1 THRU BZ-3	-----		-----	450.10	-----
<b>SUBTOTAL B</b>	-----		-----	-----	\$ 40,996.50
C-1 THRU C-2	110.00	X12	1,320.00	-----	-----
CX-1	-----		-----	25.00	-----
CY-1	-----		-----	36.00	-----
CZ-1 THRU CZ-2	-----		-----	540.00	-----
<b>SUBTOTAL C</b>	-----		-----	-----	\$ 1,921.00
D-1 THRU D-7	10,900.00	X12	130,800.00	-----	-----
DX-1 THRU DX-9	-----		-----	40,060.00	-----
<b>SUBTOTAL D</b>	-----		-----	-----	\$ 170,860.00
EX-1	-----		-----	100,000.00	-----
EX-2	-----		-----	1,000.00	-----
<b>SUBTOTAL E</b>	-----		-----	-----	\$ 101,000.00
F-1	10,765.00	X12	129,180.00	-----	-----
FX-1 THRU FX-2	-----		-----	1,400.00	-----
<b>SUBTOTAL F</b>	-----		-----	-----	\$ 130,580.00
GX-1 THRU GX-30	-----		-----	27,795.00	-----
<b>SUBTOTAL G</b>	-----		-----	-----	\$ 27,795.00
<b>GRAND TOTAL ITEMS A-1 THRU GX-30</b>					<b>\$ 2,877,010.70</b>

**APPENDICES**

**APPENDIX 1**

**PREVAILING WAGES**

**APPENDIX 2**

**MBE/WBE ASSIST AGENCIES**

**APPENDIX 3**

**ELECTRONIC PAYABLES PROGRAM**

**APPENDIX 1**

**PREVAILING WAGES**



## PREVAILING WAGES

1. **Prevailing Wages.** All wages paid by the contractor and each subcontractor shall be in compliance with The Prevailing Wage Act (820 ILCS 130), as amended, except where a prevailing wage violates a federal law, order, or ruling, the rate conforming to the federal law, order, or ruling shall govern. The Illinois Department of Labor publishes the prevailing wage rates on its website at [www.state.il.us/agency/idol/rates.rates.htm](http://www.state.il.us/agency/idol/rates.rates.htm). If the Illinois Department of Labor revises the prevailing wage rates, the revised prevailing wage rates on the Illinois Department of Labor's website shall apply to this contract and the contractor will not be allowed additional compensation on account of said revisions. The contractor shall review the wage rates applicable to the work of the contract at regular intervals in order to ensure the timely payment of current wage rates. The contractor agrees that no additional notice is required. The contractor shall be responsible to notify each subcontractor of the wage rate set forth in this contract and any revisions thereto.

2. **Payroll Records.** The contractor and each subcontractor shall make and keep, for a period of not less than five years from the date of the last payment on a contract or subcontract, records of all laborers, mechanics, and other workers employed by them on the project; the records shall include information required by 820 ILCS 13/5 for each worker. Upon seven (7) business days' notice, the contractor and each subcontractor shall make available for inspection and copying at a location within this State during reasonable hours, the payroll records to the public body in charge of the project, its officers and agents, the Director of Labor and his deputies and agents, and to federal, State, or local law enforcement agencies and prosecutors.

3. **Submission of Payroll Records.** The contractor and each subcontractor shall, no later than the 15<sup>th</sup> day of each calendar month, file a certified payroll for the immediately preceding month with public body in charge of the project, except that the full social security number and home address shall not be included on weekly transmittals. Instead the payrolls shall include an identification number for each employee (E.g., the last four digits of the employee's social security). The certified payroll shall consist of a complete copy of the payroll records except starting and ending times of work each day may be omitted.

The certified payroll shall be accompanied by a statement signed by the contractor or subcontractor or an officer, employee, or agent of the contractor or subcontractor which avers that: (i) he or she has examined the certified payroll records required to be submitted by the Act and such records are true and accurate; (ii) the hourly rate paid to each worker is not less than the general prevailing rate of hourly wages required; and (iii) the contractor or subcontractor is aware that filing a certified payroll that he or she knows to be false is a Class A misdemeanor.

All certified payroll records required to be submitted pertaining to Cook County Department of Transportation and Highway contracts should be submitted to the following address:

Chief Engineer – Construction Bureau  
Cook County Department of Transportation and Highways  
69 West Washington Street – 23<sup>rd</sup> Floor  
Chicago, IL 60602

4. **Employees Interviews.** The contractor and each subcontractor shall permit his/her employees to be interviewed on the job, during working hours, by compliance investigators of the Department of Labor.

# Cook County Prevailing Wage for July 2015

(See explanation of column headings at bottom of wages)

Trade Name	RG	TYP	C	Base	FRMAN	M-F>8	OSA	OSH	H/W	Pensn	Vac	Trng
=====	==	===	=	=====	=====	=====	===	===	=====	=====	=====	=====
ASBESTOS ABT-GEN 0.500	ALL			39.400	39.950	1.5	1.5	2.0	13.98	10.72	0.000	
ASBESTOS ABT-MEC 0.720	BLD			36.340	38.840	1.5	1.5	2.0	11.47	10.96	0.000	
BOILERMAKER 0.400	BLD			47.070	51.300	2.0	2.0	2.0	6.970	18.13	0.000	
BRICK MASON 1.030	BLD			43.780	48.160	1.5	1.5	2.0	10.05	14.43	0.000	
CARPENTER 0.630	ALL			44.350	46.350	1.5	1.5	2.0	11.79	16.39	0.000	
CEMENT MASON 0.480	ALL			43.750	45.750	2.0	1.5	2.0	13.05	14.45	0.000	
CERAMIC TILE FNSHER 0.770	BLD			36.810	0.000	1.5	1.5	2.0	10.55	9.230	0.000	
COMM. ELECT. 0.750	BLD			40.000	42.800	1.5	1.5	2.0	8.670	12.57	1.100	
ELECTRIC PWR EQMT OP 0.460	ALL			46.100	51.100	1.5	1.5	2.0	10.76	14.87	0.000	
ELECTRIC PWR GRNDMAN 0.370	ALL			37.050	52.500	1.5	2.0	2.0	8.630	12.28	0.000	
ELECTRIC PWR LINEMAN 0.480	ALL			47.500	52.500	1.5	2.0	1.5	11.06	15.75	0.000	
ELECTRICIAN 1.000	ALL			45.000	48.000	1.5	1.5	2.0	13.83	15.27	0.000	
ELEVATOR CONSTRUCTOR 0.600	BLD			50.800	57.150	2.0	2.0	2.0	13.57	14.21	4.060	
FENCE ERECTOR 0.300	ALL			37.340	39.340	1.5	1.5	2.0	13.05	12.06	0.000	
GLAZIER 0.940	BLD			40.500	42.000	1.5	2.0	2.0	13.14	16.99	0.000	
HT/FROST INSULATOR 0.720	BLD			48.450	50.950	1.5	1.5	2.0	11.47	12.16	0.000	
IRON WORKER 0.350	ALL			44.200	46.200	2.0	2.0	2.0	13.65	21.14	0.000	
LABORER 0.500	ALL			39.200	39.950	1.5	1.5	2.0	13.98	10.72	0.000	
LATHER 0.630	ALL			44.350	46.350	1.5	1.5	2.0	11.79	16.39	0.000	
MACHINIST 0.000	BLD			45.350	47.850	1.5	1.5	2.0	7.260	8.950	1.850	
MARBLE FINISHERS 0.620	ALL			32.400	34.320	1.5	1.5	2.0	10.05	13.75	0.000	
MARBLE MASON 0.780	BLD			43.030	47.330	1.5	1.5	2.0	10.05	14.10	0.000	

MATERIAL TESTER I 0.500	ALL	29.200	0.000	1.5	1.5	2.0	13.98	10.72	0.000
MATERIALS TESTER II 0.500	ALL	34.200	0.000	1.5	1.5	2.0	13.98	10.72	0.000
MILLWRIGHT 0.630	ALL	44.350	46.350	1.5	1.5	2.0	11.79	16.39	0.000
OPERATING ENGINEER 1.250	BLD 1	48.100	52.100	2.0	2.0	2.0	17.55	12.65	1.900
OPERATING ENGINEER 1.250	BLD 2	46.800	52.100	2.0	2.0	2.0	17.55	12.65	1.900
OPERATING ENGINEER 1.250	BLD 3	44.250	52.100	2.0	2.0	2.0	17.55	12.65	1.900
OPERATING ENGINEER 1.250	BLD 4	42.500	52.100	2.0	2.0	2.0	17.55	12.65	1.900
OPERATING ENGINEER 1.250	BLD 5	51.850	52.100	2.0	2.0	2.0	17.55	12.65	1.900
OPERATING ENGINEER 1.250	BLD 6	49.100	52.100	2.0	2.0	2.0	17.55	12.65	1.900
OPERATING ENGINEER 1.250	BLD 7	51.100	52.100	2.0	2.0	2.0	17.55	12.65	1.900
OPERATING ENGINEER 1.250	FLT 1	53.600	53.600	1.5	1.5	2.0	17.10	11.80	1.900
OPERATING ENGINEER 1.250	FLT 2	52.100	53.600	1.5	1.5	2.0	17.10	11.05	1.900
OPERATING ENGINEER 1.250	FLT 3	46.400	53.600	1.5	1.5	2.0	17.10	11.80	1.900
OPERATING ENGINEER 1.250	FLT 4	38.550	53.600	1.5	1.5	2.0	17.10	11.80	1.900
OPERATING ENGINEER 1.250	FLT 5	55.100	53.600	1.5	1.5	2.0	17.10	11.80	1.900
OPERATING ENGINEER 1.250	FLT 6	35.000	35.000	1.5	1.5	2.0	16.60	11.05	1.900
OPERATING ENGINEER 1.250	HWY 1	46.300	50.300	1.5	1.5	2.0	17.55	12.65	1.900
OPERATING ENGINEER 1.250	HWY 2	45.750	50.300	1.5	1.5	2.0	17.55	12.65	1.900
OPERATING ENGINEER 1.250	HWY 3	43.700	50.300	1.5	1.5	2.0	17.55	12.65	1.900
OPERATING ENGINEER 1.250	HWY 4	42.300	50.300	1.5	1.5	2.0	17.55	12.65	1.900
OPERATING ENGINEER 1.250	HWY 5	41.100	50.300	1.5	1.5	2.0	17.55	12.65	1.900
OPERATING ENGINEER 1.250	HWY 6	49.300	50.300	1.5	1.5	2.0	17.55	12.65	1.900
OPERATING ENGINEER 1.250	HWY 7	47.300	50.300	1.5	1.5	2.0	17.55	12.65	1.900
ORNAMNTL IRON WORKER 0.650	ALL	45.000	47.500	2.0	2.0	2.0	13.55	17.94	0.000
PAINTER 0.770	ALL	41.750	46.500	1.5	1.5	1.5	11.50	11.10	0.000
PAINTER SIGNS 0.000	BLD	33.920	38.090	1.5	1.5	1.5	2.600	2.710	0.000
PILEDRIIVER 0.630	ALL	44.350	46.350	1.5	1.5	2.0	11.79	16.39	0.000
PIPEFITTER 1.780	BLD	46.000	49.000	1.5	1.5	2.0	9.000	15.85	0.000

PLASTERER 1.020	BLD	43.430	46.040	1.5	1.5	2.0	13.05	14.43	0.000
PLUMBER 0.880	BLD	46.650	48.650	1.5	1.5	2.0	13.18	11.46	0.000
ROOFER 0.530	BLD	41.000	44.000	1.5	1.5	2.0	8.280	10.54	0.000
SHEETMETAL WORKER 0.720	BLD	42.230	45.610	1.5	1.5	2.0	10.53	20.68	0.000
SIGN HANGER 0.000	BLD	31.310	33.810	1.5	1.5	2.0	4.850	3.280	0.000
SPRINKLER FITTER 0.550	BLD	49.200	51.200	1.5	1.5	2.0	11.75	9.650	0.000
STEEL ERECTOR 0.350	ALL	42.070	44.070	2.0	2.0	2.0	13.45	19.59	0.000
STONE MASON 1.030	BLD	43.780	48.160	1.5	1.5	2.0	10.05	14.43	0.000
<del>SURVEY WORKER</del>	->NOT IN EFFECT		ALL	37.000	37.750	1.5	1.5	2.0	12.97
9.930 0.000 0.500									
TERRAZZO FINISHER 0.720	BLD	38.040	0.000	1.5	1.5	2.0	10.55	11.22	0.000
TERRAZZO MASON 0.940	BLD	41.880	44.880	1.5	1.5	2.0	10.55	12.51	0.000
TILE MASON 0.990	BLD	43.840	47.840	1.5	1.5	2.0	10.55	11.40	0.000
TRAFFIC SAFETY WRKR 0.500	HWY	32.750	34.350	1.5	1.5	2.0	6.550	6.450	0.000
TRUCK DRIVER 0.150	E ALL 1	35.480	35.680	1.5	1.5	2.0	8.350	10.50	0.000
TRUCK DRIVER 0.150	E ALL 2	34.100	34.500	1.5	1.5	2.0	8.150	8.500	0.000
TRUCK DRIVER 0.150	E ALL 3	34.300	34.500	1.5	1.5	2.0	8.150	8.500	0.000
TRUCK DRIVER 0.150	E ALL 4	34.500	34.500	1.5	1.5	2.0	8.150	8.500	0.000
TRUCK DRIVER 0.150	W ALL 1	35.600	35.800	1.5	1.5	1.5	8.250	9.140	0.000
TRUCK DRIVER 0.000	W ALL 2	32.700	33.100	1.5	1.5	2.0	6.500	4.350	0.000
TRUCK DRIVER 0.000	W ALL 3	32.900	33.100	1.5	1.5	2.0	6.500	4.350	0.000
TRUCK DRIVER 0.000	W ALL 4	33.100	33.100	1.5	1.5	2.0	6.500	4.350	0.000
TUCKPOINTER 0.670	BLD	43.800	44.800	1.5	1.5	2.0	8.280	13.49	0.000

Legend:

RG (Region)  
 TYP (Trade Type - All,Highway,Building,Floating,Oil & Chip,Rivers)  
 C (Class)  
 Base (Base Wage Rate)  
 FRMAN (Foreman Rate)  
 M-F>8 (OT required for any hour greater than 8 worked each day, Mon through Fri.  
 OSA (Overtime (OT) 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) Legend:

## Explanations

### COOK COUNTY

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day and Veterans Day in some classifications/counties. 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. If in doubt, please check with IDOL.

TRUCK DRIVERS (WEST) - That part of the county West of Barrington Road.

### EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.

ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

### CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed products; all composition materials, granite tiles, warning detectable tiles, cement tiles, epoxy composite materials, pavers, glass, mosaics, fiberglass, and all substitute materials, for tile made in tile-like units; all mixtures in tile like form of cement, metals, and other materials that are for and intended for use as a finished floor surface, stair treads, promenade roofs, walks, walls, ceilings, swimming pools, and all other places where tile is to form a finished interior or exterior. The mixing of all setting mortars including but not limited to thin-set mortars, epoxies, wall mud, and any other sand and cement mixtures or adhesives when used in the preparation, installation, repair, or maintenance of tile and/or similar materials. The handling and unloading of all sand, cement, lime, tile, fixtures, equipment, adhesives, or any other materials to be used in the preparation, installation, repair, or maintenance of tile and/or similar materials. Ceramic Tile Finishers shall fill all joints and voids regardless of method on all tile work, particularly and especially after installation of said tile work. Application of any and all protective coverings to all types of tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

## COMMUNICATIONS ELECTRICIAN

Installation, operation, inspection, maintenance, repair and service of radio, television, recording, voice sound vision production and reproduction, telephone and telephone interconnect, facsimile, data apparatus, coaxial, fibre optic and wireless equipment, appliances and systems used for the transmission and reception of signals of any nature, business, domestic, commercial, education, entertainment, and residential purposes, including but not limited to, communication and telephone, electronic and sound equipment, fibre optic and data communication systems, and the performance of any task directly related to such installation or service whether at new or existing sites, such tasks to include the placing of wire and cable and electrical power conduit or other raceway work within the equipment room and pulling wire and/or cable through conduit and the installation of any incidental conduit, such that the employees covered hereby can complete any job in full.

## MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all rigging for heavy work, the handling of all material that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters

cutting, use of tub saw or any other saw needed for preparation of material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installation of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and exteriors and customarily known as stone in the trade), carrara, sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior and exterior which are installed in a similar manner.

MATERIAL TESTER I: Hand coring and drilling for testing of materials; field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel, fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

## OPERATING ENGINEER - BUILDING

Class 1. Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson Attachment; Batch Plant; Benoto (requires Two Engineers); Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Conveyor (Truck Mounted); Concrete Paver Over 27E cu. ft; Concrete Paver 27E cu. ft. and Under; Concrete Placer; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Spider Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader, Elevating; Grouting Machines; Heavy Duty Self-Propelled Transporter or Prime Mover; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, One, Two and Three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Lubrication Technician; Manipulators; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes: Squeeze Cretes-Screw Type Pumps; Gypsum Bulker and Pump; Raised and Blind Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-Form Paver; Straddle Buggies; Operation of Tie Back Machine; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, Inside Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill (Self-Propelled);

Rock Drill (Truck Mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators (remodeling or renovation work); Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Low Boys; Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 4. Bobcats and/or other Skid Steer Loaders; Oilers; and Brick Forklift.

Class 5. Assistant Craft Foreman.

Class 6. Gradall.

Class 7. Mechanics; Welders.

## OPERATING ENGINEERS - HIGHWAY CONSTRUCTION

Class 1. Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines: ABG Paver; Backhoes with Caisson Attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Tower Cranes of all types: Creter Crane: Spider Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dredges; Elevators, Outside type Rack & Pinion and Similar Machines; Formless Curb and Gutter Machine; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Truck Mounted; Hoists, One, Two and Three Drum; Heavy Duty Self-Propelled Transporter or Prime Mover; Hydraulic Backhoes; Backhoes with shear attachments up to 40' of boom reach; Lubrication Technician; Manipulators; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Rock/Track Tamper; Roto Mill Grinder; Slip-Form Paver; Snow Melters; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Operation of Tieback Machine; Tractor Drawn Belt Loader; Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Traffic Barrier Transfer Machine; Trenching; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole Drills (Tunnel Shaft); Underground Boring and/or Mining Machines 5 ft. in diameter and over tunnel, etc; Underground Boring and/or Mining Machines under 5 ft. in diameter; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (Less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.; Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; Hydro Excavating (excluding hose work); Laser Screed; All Locomotives, Dinky; Off-Road Hauling Units (including articulating) Non Self-Loading Ejection Dump; Pump Cretes: Squeeze Cretes - Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotary Snow Plows; Rototiller, Seaman, etc., self-propelled; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper - Single/Twin Engine/Push and Pull; Scraper - Prime Mover in Tandem (Regardless of Size); Tractors pulling attachments, Sheeps Foot, Disc, Compactor, etc.; Tug Boats.



Class 3. Boilers; Brooms, All Power Propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer (Two Bag and Over); Conveyor, Portable; Farm-Type Tractors Used for Mowing, Seeding, etc.; Forklift Trucks; Grouting Machine; Hoists, Automatic; Hoists, All Elevators; Hoists, Tugger Single Drum; Jeep Diggers; Low Boys; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete Power Driven; Pug Mills; Rollers, other than Asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with "A" Frame; Work Boats; Tamper-Form-Motor Driven.

Class 4. Air Compressor; Combination - Small Equipment Operator; Directional Boring Machine; Generators; Heaters, Mechanical; Hydraulic Power Unit (Pile Driving, Extracting, or Drilling); Light Plants, All (1 through 5); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Vacuum Trucks (excluding hose work); Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 5. SkidSteer Loader (all); Brick Forklifts; Oilers.

Class 6. Field Mechanics and Field Welders

Class 7. Dowell Machine with Air Compressor; Gradall and machines of like nature.

#### OPERATING ENGINEER - FLOATING

Class 1. Craft Foreman; Master Mechanic; Diver/Wet Tender; Engineer; Engineer (Hydraulic Dredge).

Class 2. Crane/Backhoe Operator; Boat Operator with towing endorsement; Mechanic/Welder; Assistant Engineer (Hydraulic Dredge); Leverman (Hydraulic Dredge); Diver Tender.

Class 3. Deck Equipment Operator, Machineryman, Maintenance of Crane (over 50 ton capacity) or Backhoe (115,000 lbs. or more); Tug/Launch Operator; Loader/Dozer and like equipment on Barge, Breakwater Wall, Slip/Dock, or Scow, Deck Machinery, etc.

Class 4. Deck Equipment Operator, Machineryman/Fireman (4 Equipment Units or More); Off Road Trucks; Deck Hand, Tug Engineer, Crane Maintenance (50 Ton Capacity and Under) or Backhoe Weighing (115,000 pounds or less); Assistant Tug Operator.

Class 5. Friction or Lattice Boom Cranes.

Class 6. ROV Pilot, ROV Tender

SURVEY WORKER - Operated survey equipment including data collectors, G.P.S. and robotic instruments, as well as conventional levels and transits.

TERRAZZO FINISHER

The handling of sand, cement, marble chips, and all other materials that may be used by the Mosaic Terrazzo Mechanic, and the mixing, grinding, grouting, cleaning and sealing of all Marble, Mosaic, and Terrazzo work, floors, base, stairs, and wainscoting by hand or machine, and in addition, assisting and aiding Marble, Masonic, and Terrazzo Mechanics.

TRAFFIC SAFETY

Work associated with barricades, horses and drums used to reduce lane usage on highway work, the installation and removal of temporary lane markings, and the installation and removal of temporary road signs.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION - EAST & WEST

Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; Teamsters; Unskilled Dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-mix Plant Hopper Operator, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnatrailers or turnapulls when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, 1-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch trucks, 3 axles or more; Mechanic--Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

#### Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 217-782-1710 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.

#### MATERIAL TESTER & MATERIAL TESTER/INSPECTOR I AND II

Notwithstanding the difference in the classification title, the classification entitled "Material Tester I" involves the same job duties as the classification entitled "Material Tester/Inspector I". Likewise, the classification entitled "Material Tester II" involves the same job duties as the classification entitled "Material Tester/Inspector II".

**APPENDIX 2**

**MBE/WBE ASSIST AGENCIES**

**MBE/WBE ASSIST AGENCIES**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**

Bureau of Local Roads and Streets  
201 West Center Court  
Schaumburg, IL 60196  
847-705-4795  
847-705-4203 (Fax)  
[Moud.Ahmad@illinos.gov](mailto:Moud.Ahmad@illinos.gov)

Carnice Carey  
Executive Director  
Cosmopolitan Chamber of Commerce  
30 E. Adams Street, Suite 1050  
Chicago, IL 60603  
312-786-0212  
312-786-9079 (FAX)  
[ccarey@cosmochamber.com](mailto:ccarey@cosmochamber.com)

Mr. Miguel Nogueras  
Executive Director  
Puerto Rican Chamber of Commerce  
2450 West Division  
Chicago, IL 60622  
773-904-7996  
773-583-3118 (FAX)

**ILLINOIS ROAD BUILDERS**

500 Park Boulevard  
Itasca, IL 60143  
630-773-1220  
630-773-1231 (FAX)  
[Liz@irtba.org](mailto:Liz@irtba.org)  
[Annette@irtba.org](mailto:Annette@irtba.org)

**TARGET GROUP, INC.**

330 South Wells Street  
Suite 400  
Chicago, IL 60606  
312-873-0200  
312-873-0299 (FAX)  
[jwilliams@targetgroupinc.com](mailto:jwilliams@targetgroupinc.com)

Ms. Sheila Hill Morgan  
Executive Director  
CHICAGO MINORITY SUPPLIER DEVELOPEMTN COUNCIL  
(C.M.S.D.C.)  
105 West Adams  
Chicago, IL 60603  
312-755-8880  
312-755-8890 (FAX)  
[shillmorgan@chicagomsdc.org](mailto:shillmorgan@chicagomsdc.org)

Victor Davis  
Contractor Development Program  
CHICAGO URBAN LEAGUE  
4510 South Michigan Avenue  
Chicago, IL 60653  
773-451-3559  
773-285-7772 (FAX)  
twatley@thechicagourbanleague.org

Ms. Beth Doria  
FEDERATION of WOMEN CONTRACTORS  
5650 South Archer Avenue  
Chicago, IL 60638  
312-360-1122  
312-360-0239 (FAX)  
[fwcchicago@aol.com](mailto:fwcchicago@aol.com)

Ms. Joyce Shannahan  
Director  
INDUSTRIAL COUNCIL of NEARWEST  
2023 West Carroll Avenue  
Chicago, IL 60612  
312-421-3941  
312-421-1871 (FAX)  
[joyce@industrialcouncil.com](mailto:joyce@industrialcouncil.com)

D. Lorenzo Padron  
Director of Procurement  
LATIN AMERICAN CHAMBER of COMMERCE  
3512 West Fullerton Avenue  
Chicago, IL 60647  
773-252-5211  
773-252-7065 (FAX)  
[randrade@latinamericanchamberofcommerce.com](mailto:randrade@latinamericanchamberofcommerce.com)

Mr. Frank Aguilar  
President  
LITTLE VILLAGE 26<sup>th</sup> STREET AREA CHAMBER OF COMMERCE  
3610 West 26<sup>th</sup> Street  
Chicago, IL 60623  
773-521-5387  
312-521-5387 (FAX)  
[senortamale@msn.com](mailto:senortamale@msn.com)

Perry Gunn  
Executive Director  
NORTH RIVER COMMISSION/LADCOR  
3403 West Lawrence – Suite 201  
Chicago, IL 60625  
773-478-0202  
773-478-0282

Ms. Angela R. Johnson  
National Director of International Trade Bureau  
RAINBOW P.U.S.H.  
930 East 50<sup>th</sup> Street  
Chicago, IL 60615  
773-373-3366  
312-373-3571 (FAX)  
[mturner@rainbowpush.org](mailto:mturner@rainbowpush.org)

Ms. Patricia Showers  
Executive Director  
UPTOWN CENTER/HULL HOUSE  
4520 North Beacon  
Chicago, IL 60640  
773-561-3500  
312-561-3507 (FAX)  
[croeschley@hullhouse.org](mailto:croeschley@hullhouse.org)

Ms. Emilia DiMenco  
Chief Operating Officer  
WOMEN'S BUSINESS DEVELOPMENT CENTER  
8 South Michigan  
Suite 400  
Chicago, IL 60604  
312-853-3477  
312-853-0145 (FAX)  
[edimenco@wbdc.org](mailto:edimenco@wbdc.org)

○ Sarah Garrett  
American Council of Engineering Companies of Illinois (ACEC Illinois)  
5221 South 6<sup>th</sup> Street Road  
Suite 120  
Springfield, IL 62703  
217-529-7430  
[sharah@acecil.org](mailto:sharah@acecil.org)

**Cook County Departments**

Cook County Office of the Chief Procurement Officer  
118 N. Clark Street – Room 1018  
Chicago, Illinois 60602  
312-603-5370

Cook County Department of Transportation and Highways  
Contract Documents Administrator  
69 W. Washington Street – Suite 2400  
Chicago, Illinois 60602  
312-603-1830

○ Cook County Office of Contract Compliance  
118 North Clark Street  
10<sup>th</sup> Floor  
Chicago, Illinois 60602  
312-603-5502





**APPENDIX 3**

**ELECTRONIC PAYABLES PROGRAM**

**OFFICE OF THE COOK COUNTY COMPTROLLER**  
**ELECTRONIC PAYABLES PROGRAM ("E-PAYABLES")**

**FOR INFORMATION PURPOSES ONLY**

**This document describes the Office of the Cook County Comptroller's Electronic Payables Program ("E-Payables").**  
**If you wish to participate in E-Payables, please contact the Cook County Comptroller's Office, Accounts Payable, 118 N. Clark Street, Room 500, Chicago, IL 60602.**

**DESCRIPTION**

To increase payment efficiency and timeliness, we have introduced E-Payables program, a new payment initiative to our accounts payable model. This new initiative utilizes a Visa purchasing card and operates through the Visa payment network. This is County's preferred method of payment and your participation in our Visa purchasing card program will provide mutual benefits both to your organization and ours.

As a vendor, you may experience the following benefits by accepting this new payment type:

- Improved cash flow and accelerated payment
- Reduced paperwork and a more streamlined accounts receivable process
- Elimination of stop payment issues
- Reduced payment delays
- Reduced costs for handling paper checks
- Payments settled directly to your merchant account

There are two options within this initiative:

**1. Dedicated Credit Card – "PULL" Settlement**

For this option, you will have an assigned dedicated credit card to be used for each payment. You will provide a point of contact within your organization who will keep credit card information on file. Each time a payment is made, you will receive a remittance advice via email detailing the invoices being paid. Each time you receive a remittance advice, you will process payments in the same manner you process credit card transactions today.

**2. One-Time Use Credit Card – "SUGA" Settlement**

For this option, you will provide a point of contact within your organization who will receive an email notification authorizing you to process payments in the same manner you process credit card transactions today. Each time payment is made, you will receive a remittance advice, via email, detailing the invoices being paid. Also, each time you receive a remittance advice, you will receive a new, unique credit card number. This option is ideal for suppliers who are unable to keep credit card account information on file.

**REMAINDER OF PAGE INTENTIONALLY LEFT BLANK**

## EXHIBITS

<b><u>Exhibit</u></b>	<b><u>Subject</u></b>
<b>Exhibit 1</b>	<b>Checklist for Bid Submission</b>
<b>Exhibit 2</b>	<b>Addendum Receipt Acknowledgement</b>
<b>Exhibit 3</b>	<b>Veteran's Preference for VBE and SDVBE</b>
<b>Exhibit 4</b>	<b>Veteran's Workplace Preference Public Works Contracts</b>
<b>Exhibit 5</b>	<b>Joint Venture Forms</b>
<b>Exhibit 6</b>	<b>Contractor's and Subcontractor's Certification Concerning Labor Standards and Prevailing Wage Requirements</b>
<b>Exhibit 7</b>	<b>Responsible Bidder Requirement</b>
<b>Exhibit 8</b>	<b>Bidding Supplemental</b>
<b>Exhibit 9</b>	<b>County of Cook Proposal Bid Bond and Bid Deposit Form</b>
<b>Exhibit 10</b>	<b>IDOT Certificate of Eligibility and IDOT Affidavit of Availability – forms not supplied here</b>
<b>Exhibit 11</b>	<b>Identification of Subcontractor/Supplier/Sub-consultant Form</b>
<b>Exhibit 12</b>	<b>MBE/WBE Utilization Plan Form</b>
<b>Exhibit 13</b>	<b>Economic Disclosure Statement</b>
<b>Exhibit 14</b>	<b>Surety's Statement of Qualification for Bonding / Performance and Payment Bond</b>
<b>Exhibit 15</b>	<b>Insurance (ACORD) – form not supplied here</b>

**EXHIBIT 1**

**CHECKLIST FOR BID SUBMISSION**

**The following completed documents, if applicable are to be submitted with the Bid:**

Please review this checklist to ensure your bid package is completed and submitted correctly.

Incomplete bid packages will not be considered for award. If you have any questions about submitting your bid package, contact the Assistant Procurement Officer listed on the cover page. Be sure to allow enough time for us receive and reply to your inquiry.

In the bid package you are submitting, please be sure to:

- **INCLUDE** the following sections of the contract in the following order:

Schedule of Prices	1 original	2 copies
Addendum Receipts Acknowledgment, if applicable	1 original	2 copies
Veteran's Preference for VBE and SDVBE, if applicable	1 original	2 copies
Veteran's Workplace Preference Public Works Contract, if applicable	1 original	2 copies
Joint Venture Forms, if applicable	1 original	2 copies
Contractor's Certification Concerning Labor Standards and Prevailing Wage Requirements	1 original	2 copies
Subcontractor's Certification Concerning Labor Standards and Prevailing Wage Requirements	1 original	2 copies
Responsible Bidder Requirement	1 original	2 copies
Bidding Supplemental	1 original	2 copies
County of Cook Proposal Bid Bond and Bid Deposit Form	1 original	2 copies
Surety Statement of Qualifications	1 original	2 copies
IDOT Certificate of Eligibility*		1 copies
IDOT Affidavit of Availability*		1 copies
Identification of Subcontractor/Supplier/Sub-consultant Form (for all subs)	1 original	2 copies
MBE/WBE Utilization Plan Form	1 original	2 copies
Economic Disclosure Statement	1 original	2 copies

\*Forms are not supplied here.

**The following documents are to be subsequent to notice of acceptance within fourteen (14) calendar days:**

Performance and Payment Bond	1 original	2 copies
Insurance Requirements	1 original	2 copies

- **SIGN, ATTEST, AND NOTARIZE** all three (6) Execution pages
- **PRINT** bid label
- **COMPLETE** the name and address sections as indicated on the bid label
- **TAPE** the completed bid label to the front of your bid package

Be sure to submit your bid on or before the Bid Opening Date and Time indicated in the solicitation documents.

Be sure to deposit your bid at the location indicated in the solicitation documents. Bids submitted late will not be considered for award.

**EXHIBIT 2**

**ADDENDUM RECEIPT ACKNOWLEDGEMENT**

**ADDENDUM RECEIPT ACKNOWLEDGEMENT**

The receipt of the following addenda to the drawings and/or specification is acknowledged:

Addendum No. 1

Dated 8/25/16

Addendum No. \_\_\_\_\_

Dated \_\_\_\_\_

Addendum No. \_\_\_\_\_

Dated \_\_\_\_\_

Addendum No. \_\_\_\_\_

Dated \_\_\_\_\_

Addendum No. \_\_\_\_\_

Dated \_\_\_\_\_

NOTE: These Addenda form a part of the Bidding and Contract Documents and modify the Original Documents for this Contract. Receipt of these Addenda shall be acknowledged above. Failure to do so may subject the Bidder to disqualification.



OFFICE OF THE CHIEF PROCUREMENT OFFICER  
**SHANNON E. ANDREWS**  
 CHIEF PROCUREMENT OFFICER  
 118 North Clark Street, Room 1018 • Chicago, Illinois 60602 • (312) 603-5370

**TONI PRECKWINKLE**

PRESIDENT  
 Cook County Board  
 of Commissioners

RICHARD R. BOYKIN  
 1st District

ROBERT STEELE  
 2nd District

JERRY BUTLER  
 3rd District

STANLEY MOORE  
 4th District

DEBORAH SIMS  
 5th District

JOAN PATRICIA MURPHY  
 6th District

JESUS G. GARCIA  
 7th District

LUIS ARROYO, JR.  
 8th District

PETER N. SILVESTRI  
 9th District

BRIDGET GAINER  
 10th District

JOHN P. DALEY  
 11th District

JOHN A. FRITCHEY  
 12th District

LARRY SUFFREDIN  
 13th District

GREGG GOSLIN  
 14th District

TIMOTHY O. SCHNEIDER  
 15th District

JEFFREY R. TOBOLSKI  
 16th District

SEAN M. MORRISON  
 17th District

**ADDENDUM NO. 1**

**August 25, 2016**

**Electrical and Mechanical Item Maintenance Various Locations  
 For  
 Department of Transportation and Highways**

**Contract No. 1628-15554**

To: Interested Vendors of Record

**A. General:**

This addendum revises the above-referenced solicitation. This addendum is issued prior to execution of the contract, forms a part of contract documents and modifies previously issued documents. Insofar as previously issued contract documents are inconsistent with modifications indicated by this addendum, modifications indicated by this addendum shall govern. Where any part of the contract documents are modified by this addendum, all unaltered provisions shall remain in effect.

**B. Acknowledgement:**

Acknowledge receipt of this addendum in Exhibit 2 of the bid document. Failure to do so may subject bidder to disqualification.

**C. Attachments:**

The addendum includes attachments described in this addendum. One copy of each attachment is issued with this addendum, unless otherwise indicated. Insert the attachment(s) in the solicitation document in the correct sequence and location. Revise your response to this solicitation to reflect the modifications per this addendum, as applicable.

- Attachment 1: Pre-Bid Meeting Attendance Sheet (1 Pg.)
- Attachment 2: Revised Page SC-6A (1Pg.)
- Attachment 3: Pump Stations Information (1 Pg.)
- Attachment 4: Detection Equipment Information (1 Pg.)
- Attachment 5: Responses to Questions (5 Pages)

**D. Changes:**

1. Change #1 Replace Page SC-6 with attachment 2: Revised Page SC- 6A removed the word "certified".

**E. Responses to Questions:** See Attachment 5: Responses to Questions

  
 \_\_\_\_\_  
 ORIGINATED BY:  
 Cho Ng  
 Assistant Procurement Officer

  
 \_\_\_\_\_  
 SHANNON E. ANDREWS  
 CHIEF PROCUREMENT OFFICER

 Fiscal Responsibility Innovative Leadership Transparency & Accountability Improved Services



OFFICE OF THE CHIEF PROCUREMENT OFFICER

**Contract No. 1628-15564 - Addendum No. 1**

Attachment 1: Pre-Bid Meeting Attendance Sheet (1 Pg.)

Contract No. 1628-15554

ATTENDANCE SIGN-IN SHEET Addendum No. 1 Attachment No. 1

August 16, 2016 - Pre-Bid Meeting for  
1628-15554 - Electrical and Mechanical Item Maintenance

Please attach your business card or fill out your information

Attendee Name: Bob Nelson  
 Company Name: Taylor Electric Co  
 Company Address: 7811 S. Stony Island  
Chicago IL 60649  
 Telephone: 773 346 5658  
 Fax: 773 346 5659  
 E-Mail: bnelson@taylor-electric.com  
 Please print clearly



Michael K. Krutson  
Vice President  
Infrastructure

9560 W. 65th Street - Suite A  
McCook, Illinois 60826  
Direct (708) 688-2884  
Office (708) 688-2800  
Fax (708) 688-2601

Cell (708) 243-1775  
mik@meads100.com  
www.meads100.com



**TAYLOR ELECTRIC COMPANY**

7811 S. Stony Island Ave., Chicago, IL 60649

**KENDRA D. DINKINS**  
President

Phone: (773) 346-5768  
Fax: (773) 346-2659

E-mail: kddinkins@taylorelectrco.com

www.taylorelectrco.com  
MBE/DBE Certified



**John Burns**  
construction company

Matt Teschke  
Project Manager / Estimator

17801 SOUTHWEST HWY  
ORLAND PARK, ILLINOIS 60467  
(708) 828-3475 OFFICE PHONE  
(708) 670-1780 MOBILE PHONE  
(708) 828-3499 FAX  
mteschke@jbc.com

Attendee Name:

**Pagoda Electric  
& Construction Inc.**  
1733 Cornell Road • Homewood, IL 60422

**Corporate, Commercial  
& Industrial**  
MEB • DBE • SBA 8(a)

Martin Laredo, Jr.  
Senior Project Manager  
mlaredo@pagodaelectric.com

Phone: 708-263-9540  
Fax: 708-647-6368  
Cell: 630-478-3918

Company Name: \_\_\_\_\_

Company Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-Mail: \_\_\_\_\_

Please print clearly

Attendee Name:



**OMNI-PUMP REPAIRS, INC.**

**THE PUMP PEOPLE**  
PUMP & BLOWER REPAIR

**PETE MORAITIS**  
General Manager

9224 Chestnut Ave.  
Franklin Park, Illinois 60131

Bus: (847) 451-0300  
Fax: (847) 451-0119  
Cell: (847) 860-4700

Company Name: \_\_\_\_\_

Company Name: \_\_\_\_\_

Company Address: \_\_\_\_\_

Company Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-Mail: \_\_\_\_\_

Please print clearly

OFFICE OF THE CHIEF PROCUREMENT OFFICER

**Contract No. 1628-15554 - Addendum No. 1**

Attachment 2: Revised Page SC-6A (1Pg.)

**SC-12 BIDDING REQUIREMENTS AND CONDITIONS FOR CONTRACT PROPOSALS****Qualification of Bidders**

The Awarding Authority for contract construction work is the County Board of a County. Each prospective bidder, in evidence of competence, shall furnish the Awarding Authority a ~~written~~ copy of a "Certificate of Eligibility" issued by the Illinois Department of Transportation, and Contractor's Statement of Experience and Financial Condition" with their bid. Each prospective bidder shall furnish a sworn statement as to equipment owned and controlled, previous experience and construction work. The bidder shall have prior experience in all aspects of this project.

If the bidder to whom the award is made is a corporation organized under the laws of the State other than Illinois, the bidder shall furnish the Awarding Authority a copy of the corporation's Certificate of Authority to do business in the State of Illinois with the bid.

The bidder must provide the Awarding Authority a sworn Affidavit of Availability showing all uncompleted contracts awarded to them and all low bids pending award for Federal, State, County, Municipal and private work in the bid. The bidder should file two (2) copies of same with IDOT's District office.

**Examination of Plans, Specifications, Special Provisions, and Site of Work**

The bidder shall, before submitting a bid, carefully examine the provisions of the contract. The bidder shall inspect in detail the site of the proposed work, investigate and become familiar with all the local conditions affecting the contract and fully acquaint themselves with the detailed requirements of construction. Submission of a bid shall be a conclusive assurance and warranty the bidder has made these examinations and the bidder understands all requirements for the performance of the work. If the submitted bid is accepted, the bidder shall be responsible for all errors in the bid resulting from the bidder's failure or neglect to comply with these instructions. The Awarding Authority will, in no case, be responsible for any costs, expenses, losses, or change in anticipated profits resulting from such failure or neglect of the bidder to make these examinations.

The bidder shall take no advantage of any error or omission in the bid documents and advertised contract. Any prospective bidder who desires an explanation or interpretation of the plans, specification, or any of the contract documents shall request such in writing from the Awarding Authority in sufficient time to allow a written reply by the Awarding Authority that can reach all prospective bidders before the submission of their bids. Any reply given a prospective bidder concerning any of the contract documents, plans, and specifications will be furnished to all prospective bidders in the form determined by the Awarding Authority including, but not limited to, an addendum, if the information is deemed by the Awarding Authority to be necessary in submitting bids or if the Awarding Authority concludes the information would aid competition. Oral explanations, interpretations, or instructions given before the submission of bids unless at a prebid conference will not be binding on the Awarding Authority.

**Changes in Improvement**

The undersigned agrees that in case the Superintendent of Cook County Department of Transportation and Highways decides either to extend or decrease the area of the proposed improvement or to do both or otherwise alter it by extras or deductions including the elimination of any one or more of the quantities listed in the Schedule of Prices the undersigned will make such change in the contract price by adding or subtracting there from as the case may be by applying the respective unit prices to the quantities of the several items of work that may be involved by reason of such change.

OFFICE OF THE CHIEF PROCUREMENT OFFICER

**Contract No. 1628-15554 - Addendum No. 1**

Attachment 3: Pump Stations Information (1 Pg.)

**PUMP STATIONS**

**Pump Station 101**

4 Fairbanks-Morse 150HP, 15,000 gpm, 480 volt, vertical motor line shaft with Fairbanks-Morse Pump No P2D5563.

1 ABS Pump Company 500 gpm, with 6 inch discharge submersible pump

**Pump Station 102**

4 General Electric 40HP, 4200 gpm, 230/460 volt, vertical motor line shaft with Cascade Pump No. 12HMF

**Pump Station 103**

3 Westinghouse 10HP, 2000 gpm, 460 volt, vertical motor line shaft with Cascade Pump size 6MB

**Pump Station 104**

3 General Electric 50HP, 4200 gpm, 460 volt, vertical motor line shaft with Fairbanks Morse Pump No. 8132

**Pump Station 105**

3 US Electrical 15HP, 2160 gpm, 460 volt, vertical line shaft, with Cascade Pump Size 8MF

**Pump Station 106**

2 Flyght 3HP, 650 gpm 480 volt submersible pumps

2 Flyght 25HP, 2160 gpm, 480 volt submersible pumps

**Pump Station 107**

2 Weil 2531 2HP, 4 inch discharge, 208/230 volt submersible pumps

OFFICE OF THE CHIEF PROCUREMENT OFFICER

**Contract No. 1628-15554 - Addendum No. 1**

Attachment 4: Detection Equipment Information (1 Pg.)

Street Name	Street Name	Detection equipment
127th Street	I-355 Ramp A+B(West Ramp)	AUTOSCOPE
127th Street	I-355 Ramp C+D(East Ramp)	AUTOSCOPE
175th Street	Oak Park Avenue	Iteris
Shoe Factory Road	Beverly Road	VIDEO
Shoe Factory Road	Rohrssen Road	VIDEO
Lake Cook Road	Rt 41 NB Ramps	AUTOSCOPE
Lake Cook Road	Rt 41 SB Ramps	AUTOSCOPE
Roselle Road	Northwest Toll Road Ramps	AUTOSCOPE
Euclid Avenue	Sycamore Lane	AUTOSCOPE
Sanders Road	Lindenwood Lane	FLIR
Roselle Road	Elgin - O'Hare Ramp A & D	AUTOSCOPE
Roselle Road	Elgin - O'Hare Ramp B & C	AUTOSCOPE
Old Orchard Road	Lavergne Street	Wavetronics
Old Orchard Road	Lawler	Wavetronics
94th Ave	Boardwalk Lane	Interceptor
87th Ave	Roberts Road	Sensys
Lake Cook Road	Buffalo Grove Road	Video Encoder-Optelecom
Lake Cook Road	Weiland Ave	Video Encoder-Optelecom
Lake Cook Road	Waukegan(IL43)	Video Encoder-Optelecom
Lake Cook Road	Red Oak Ln	Video Encoder-Optelecom
Lake Cook Road	east of Old Hicks	Video Encoder-Optelecom
Lake Cook Road	Arlington Height Road	Video Encoder-Optelecom
Lake Cook Road	Tri-State Toll Road(I-294) Ramp	Video Encoder-Optelecom
Lake Cook Road	Rt 41 SB Ramps	Video Encoder-Optelecom
Potter Road	Church Street	Smartmicro
Buffalo Grove Road	Buffalo Grove Plaza	FLIR
Sauk Trail	Central Ave	Smartmicro
Vollmer Road	Tradition Drive	Iteris



OFFICE OF THE CHIEF PROCUREMENT OFFICER

**Contract No. 1628-15554 - Addendum No. 1**

Attachment 5: Responses to Questions (5 Pages)

Responses to Questions

Item	Question	Response
1	<p>Concerning specification Page 85 – C. – minimum of 5 dedicated patrol persons plus 1 general foreman shall be assigned to this contract exclusively. Can you please clarify what is meant by dedicated as to the # of hours required to be assigned, etc. for each of the required (6) personnel?</p>	<p>“A minimum of five (5) dedicated patrol persons plus one (1) General Foreman shall be assigned to work exclusively on this Contract” means that above contractor personnel must be devoted to this contract only.</p> <p>The exception is stated under section C page S-20, “The Contractor may use dedicated personnel for emergency situations of others provided that he first gets approval from the Engineer. The emergency use for others shall not be sufficient grounds to not do routine and non-routine duties in the prescribed time frames.”</p>
2	<p>Concerning the 24% MBE / 10% WBE requirement, have any waivers been granted in the past for not being able to meet those MBE or WBE requirements?                      a. If yes, can you supply us an example of such waiver(s)?                      b. If no, can you explain how those requirements are currently being met?</p>	<p>We are unaware of waiver provided in the past for this particular service. Information associated with petition for waiver is located on page 523 of the solicitation under “Petition for reduction/waiver of MBE/WBE participation – Form 3”</p>
4	<p>Approximately how many JULIE utility locates are there on an annual basis?</p>	<p>Year 2014: 199                      Year 2015: 288                      Year 2016 as of July: 183</p>
5	<p>In subject bid package, SC-12 Bid Requirements. It indicates a ‘certified’ copy of an IDOT “Certificate of eligibility” is required. Can you confirm that a “certified copy” is not required? Certificate is available but certified copies are not issued by IDOT.</p>	<p>Under the first paragraph of Section SC-12 on page SC-6, it is to be revised from “a certified copy” to be “a copy”. See attachment No. 2.</p>
6	<p>Please clarify how M/WBE Participation is counted towards the contract goals (i.e. Subcontractors count 100%, Suppliers count 60%, etc.)</p>	<p>Direct Labor is at 100% and supplies at 60%</p>
7	<p>Page S-15, Section B.2 notes “following repair work, the associated area restoration shall be equal to or better than the original area condition.”                      a. Please clarify how the Contractor is compensated for restoration.</p>	<p>It will be the Contractor’s responsibility to include compensate for restoration within their bid. There are no extra line items.</p>
8	<p>Page S-28, Section F. VEHICLE notes that “two bucket trucks shall be assigned to the County dedicated patrolmen to use daily.”</p>	<p>a. The “County dedicated patrolmen” are referring to employees of the Contractor.</p>

Responses to Questions

	<p>a. Are the "County dedicated patrolmen" you are referring to employees of the Contractor or the County?                  b. Is the intent of this specification to have two bucket trucks fully dedicated to the contract, in addition to the patrol vehicles?                  c. Do the bucket trucks require the same "VEHICLE EQUIPMENT" per Section F.3?</p>	<p>b. The two bucket trucks are to be fully dedicated to the dedicated patrolmen, it is not in addition to the patrol vehicles. As stated Section F on page S-28: Two bucket trucks shall be assigned to the County dedicated patrolmen to use daily.                  c. The bucket trucks require the same "VEHICLE EQUIPMENT" per Section F.3.</p>
9	<p>Page S-33, Section I. COMMUNICATION SETUP: Is the County wide wireless field communication system implemented via use of cellular phones (Nextel-type to allow push-to-talk communication) or are there requirements to have truck mounted two-way radios?</p>	<p>Cellular phones which have push-to-talk feature are to be used.</p>
10	<p>Page S-35, Section I. COMMUNICATION SETUP requires the implementation of a live web-based program to document arrival and departure time of the routine patrol schedule. Does the County have a preferred program for implementation by the Contractor?</p>	<p>The County does not have a preferred program.</p>
11	<p>Page S-41, Section 6 REIMBURSEMENT FROM THIRD PARTY FOR REPAIR OF DAMAGES states the "Contractor shall make all repairs under ROUTINE MAINTENANCE and at no additional cost to the County." Please confirm the Contractor is only capable of being reimbursed for these costs by invoicing the offending party.</p>	<p>Contractor shall make all repairs under ROUTINE MAINTENANCE and at no additional cost to the County. The Contractor is paid for ROUTINE MAINTENANCE as contract pay items. The Contractor can collect damages from a third party if there is damage to underground conduit, handhole, pull point or cable inflicted by a third party.</p>
12	<p>Beginning on Page S-109, do the requirements of the SPECIAL PROVISION FOR TRAFFIC SIGNAL WORK GENERAL only apply to NEW traffic signal installations installed under this contract?</p>	<p>No. "SPECIAL PROVISION FOR TRAFFIC SIGNAL WORK GENERAL" applies to all proposed traffic signal work.</p>
13	<p>TRAFFIC SIGNAL INSTALLATIONS ROUTINE MAINTENANCE, states, "The Contractor shall at all times maintain stock of sufficient materials and equipment to make temporary and permanent repairs". Is this "stock" in addition to the County's stock? If so, please define "sufficient stock" by providing a list of materials with quantities.</p>	<p>Equipment used for repairs shall be the Contractor's equipment. It is Contractor's responsibility to ascertain and determine the equipment needed to maintain the County system property.</p>
14	<p>RELAMP TRAFFIC SIGNAL SECTIONS AND CLEAN LENS, states, "Change all 135 watt and 90 watt signal lamps and wash all signal lenses including a LED once during the even contract year of this contract in</p>	<p>Please refer to page S-64 of the solicitation, Section 6: Relamp Traffic Signal Sections and Clean Lens. All LED signals shall be relamped every eight (8) years from date of</p>

Responses to Questions

	<p>APRIL and wash video detector lenses four times a year or more often if so directed by the Engineer at specific locations. All remaining incandescent lamps shall be relamped annually. All LED signals and LED street name signs to be relamped every eight (8) years from date of installation. Refer to Article X, List of LED Locations with installation date. This work is NOT to be done by the five (5) patrolmen, but is to be done by a separate crew". Based on the information provided in Tables IV (CCDOOTH MAINTENANCE LIST) and Table VI (LIST OF LED TRAFFIC SIGNAL LOCATIONS), please confirm that all 345 intersections are LED signal heads and that no incandescent intersections exists? Please provide the quantity of LED Signal Sections that will need to be replaced, per intersection, since several LED locations will need to be relamped in this contract.</p>	<p>installation. All LED street name signs shall be relamped every thirteen (13) years from the date of installation. The bidder may compare both Table IV and Table VI for the types of lamp. County does not have a list of LED signal sections for each intersection. The bidder may also inspect in detail of all of the locations as stated in the solicitation.</p>
15	<p>RELAMP TRAFFIC SIGNAL SECTIONS AND CLEAN LENS, states, "Steam clean and wash all painted components exposed to weather in even contract year or more often if so directed by the Engineer at specific locations". Is power washing an acceptable alternate?</p>	<p>No.</p>
16	<p>RELAMP TRAFFIC SIGNAL SECTIONS AND CLEAN LENS, states, "All LED lamps shall be tested each year to determine the need for replacement". Please provide acceptable testing levels. Please clarify if this work can be completed by patrolmen during ROUTINE MAINTENANCE.</p>	<p>We are unable to verify this statement in the solicitation.</p>
17	<p>VEHICLE DETECTOR MAINTENANCE AND REPLACEMENT, states, "The Contractor shall provide licensed software for each of the Patrolmen who have video detection and/or radar detection in their respective area". Please provide a list of all video detection and/or radar detection intersections, with manufacture/operating system.</p>	<p>See Attachment 4.</p>
18	<p>TRAFFIC SIGNAL ROUTINE PAY ITEMS, states, "Purchase and maintain up to date licensed software to operate and maintain all Closed Loop Traffic-Signal Systems, Video and Detection Systems, and related management systems". Please provide a list of all software that is required.</p>	<p>The software to operate and maintain all Closed Loop Traffic-Signal Systems, Video and Detection Systems, and related management systems are Aries, MarcNX, AutoScope, Iteris, Sensys, Wavetronics, Flir, Interceptor, and Smartmicro.</p>
19	<p>STREET AND ROADWAY LIGHTING SYSTEM ROUTINE</p>	<p>Equipment used for repairs shall be the Contractor's</p>

Responses to Questions

	<p>MAINTENANCE, states, "Maintain in stock at all times sufficient assorted new Light Standards, Transformer Bases, Couplings, Mast Arms, Luminaires, Lamps, Breakers, Fuses, Switches, Timers, Relays, Splicing Materials, Cable, Cable-In-Duct, Conduits and Fittings, and other parts in order that all malfunctions from any cause whatsoever, can be temporarily or permanently corrected, and all defective or damaged components, except Light Standard Foundations, can be replaced". Is this "stock" in addition to the County's stock? If so, please define "sufficient stock" by providing a list of materials with quantities.</p>	<p>equipment. It is Contractor's responsibility to ascertain and determine the equipment needed to maintain the County system properly.</p>
20	<p>REPLACE LIGHTING EQUIPMENT, states, "Under this item, as listed in the Schedule of Prices, lighting equipment damaged by traffic shall be repaired by the Contractor. The labor under this item shall be paid for either as listed in the Schedule of Prices or as Regular Work under Article III Item 10 of this Contract when authorized by the Engineer". Please confirm that the replacement of damaged lighting equipment will be paid for separately.</p>	<p>Yes, Any street lighting items not listed as routine maintenance will be paid for separately.</p>
21	<p>NAVIGATION LIGHTING SYSTEM ROUTINE MAINTENANCE, states, "Maintain in stock at all times sufficient assorted new Navigation Lights, Lenses, Lamps, Breakers, Fuses, Switches, Timers, Relays, Splicing Materials, Cable, Conduit and Fittings, and other parts in order that all malfunctions from any cause whatsoever, can be temporarily or permanently corrected, and all defective or damaged components, can be replaced". Is this "stock" in addition to the County's stock? If so, please define "sufficient stock" by providing a list of materials with quantities.</p>	<p>Equipment used for repairs shall be the Contractor's equipment. It is Contractor's responsibility to ascertain and determine the equipment needed to maintain the County system properly.</p>
22	<p>PUMPING STATION ROUTINE MAINTENANCE, states, "The Contractor shall maintain one AEGIS Silent Knight 8526 receiver in the Contractor's Dispatch Center, and all existing alarm transmitter units at each pump station including any new units added during the contract year, and all associated equipment". Does the County provide this equipment or is it the Contractor responsibility?</p>	<p>The equipment is the Contractor's responsibility.</p>
23	<p>PUMPING STATION ROUTINE MAINTENANCE, states, "The Contractor shall perform vibration analysis on all pumps semiannually". Does the County have a list of acceptable testing agencies?</p>	<p>No, The County does not have a list of acceptable testing agencies. The selected testing agency must be competent to perform testing.</p>

Responses to Questions

24	<p>PUMPING STATION ROUTINE MAINTENANCE, states that oil samples are to be taken from the pump motors and submitted for testing. Does the County have a list of acceptable testing agencies?</p>	<p>No, The County does not have a list of acceptable testing agencies. The selected testing agency must be competent to perform testing.</p>
25	<p>Please provide a budgetary history of the dollars awarded under "ROUTINE", "NON-ROUTINE" and/or "SPECIALTY ITEM" work.</p>	<p>2014 Routine:\$2,261,482.60, Non-Routine: \$95,368.93                  2015: Contract has not been finalized.</p>
26	<p>Page SC-7, REJECTION OF BIDS, states, "The Awarding Authority reserves the right to reject any bids for any of the conditions listed below:                  (c) Unbalanced bids in which the bid prices for some items are, in the judgment of the Awarding Authority, out of proportion to the bid prices for other items". Based on previous information provided by the County, is it fair to assume that the County will award Unbalanced Bids? A couple of Unit Price examples of Unbalanced Bids, from a previously awarded contract, are:                  a. AY-2 TEMPORARY TRAFFIC SIGNAL INSTALLATION TYPE-2 \$300/EACH (Specifications for AY-2 call for the Contractor to furnish and install a complete temporary traffic signal installation which when completed and accepted shall become the Property of Cook County. The installation further states that the Controller and cabinet to meet all requirement of AZ-2, FULL ACTUATED CONTROLLER IN TYPE IV CABINET, which was priced at \$2,000/EACH. This example only represents one component of the complete installation, yet it exceeds the Contract Unit Price for Item AY-2 by 650%).                  b. AZ-82 STEEL MAST ARM ASSEMBLY AND POLE (MAST ARM 56' TO 65') \$100/EACH (Specifications for AZ-82 call for the Contractor to furnish and install the Steel Mast Arm Assembly and Pole, stroud, anchor bolts, nuts, washers and connected to a ground rod as shown on the Standard, complete. Current pricing for a similar Steel Mast Arm Assembly and Pole is in excess of \$5,500, for just the Arm and Pole, exceeding the Contract Unit Price by 5500%.</p>	<p>The County Award Committee reviews the bids to ascertain their validity. When the bid is accepted, the Contractor is responsible for providing services for the costs as bid in the Contract.</p>
27	<p>Could you provide the pump information?</p>	<p>See Attachment 3</p>

**EXHIBIT 3**

**VETERAN'S PREFERENCE FOR VBE AND SDVBE**

VETERAN'S PREFERENCE FOR VBE AND SDVBE

INSTRUCTIONS

In accordance with Section 34-236(b) of the Cook County Procurement Code, the Chief Procurement Officer ("CPO") shall give a preference of five percent of the amount of the Contract to a Responsible and Responsive Veterans Owned Business Enterprise (VBE) and Service Disabled Veterans Business Enterprise (SDVBE) requesting a preference for Bids. All Bidders who are requesting this preference must complete the form, and attach a copy of its certification. Prior to applying the five percent preference, the CPO must receive approval from the Contract Compliance Director (CCD) that the Bidder is a qualified VBE or SDVBE.

DEFINITIONS

*Veteran-owned Business Enterprise (VBE)* means a small business (i) that is at least 51 percent owned, controlled and managed by one or more Eligible Veterans or in the case of a corporation, at least 51 percent or more of the stock of which is owned, controlled and managed by one or more Eligible Veterans; (ii) that has its home office in Illinois, as certified by the Contract Compliance Director (CCD) under policies and procedures promulgated by the CCD.

*Eligible Veteran* means a person who (i) has been either a member of the armed forces of the United States or, while a citizen of the United States, was a member of the armed forces of allies of the United States in time of hostilities with a foreign country and (ii) has served under one or more of the following conditions: (a) the veteran served a total of at least 6 months; (b) the veteran served for the duration of hostilities regardless of the length of the engagement; (c) the veteran was discharged on the basis of hardship; or (d) the veteran was released from active duty because of a service connected disability and was discharged under honorable conditions.

*Armed forces of the United States* means the United States Army, Navy, Air Force, Marine Corps, Coast Guard or service in active duty as defined under 38 U.S.C. Section 101. Service in the Merchant Marine that constitutes active duty under Section 401 of federal Public Act 95-202 shall also be considered service in the armed forces for purposes of this Division.

*Service-Disabled Veteran-owned Business Enterprise (SDVBE)* means a small business (i) that is at least 51 percent owned, controlled, and managed by one or more qualified service disabled veterans or in the case of a corporation, at least 51 percent or more of the stock of which is owned, controlled and managed by one or more Service Disabled Veterans; (ii) that has its home office in Illinois, as certified by the CCD under policies and procedures promulgated by the CCD.

*Service-Disabled Veteran* means an Eligible Veteran who has been found to have 10 percent or more service connected disability by the United States Department of Veterans Affairs or the United States Department of Defense.

*Service-connected disability* means a disability incurred in the line of duty in the active military, naval or air service as described in 38 U.S.C. 101(16).

*Small Business* means a small business as defined by the U.S. Small Business Administration, pursuant to the business size standards found in 13 CFR Part 121, as related to the nature of the work the Person seeks to perform on Contracts. A Person is not an eligible small business enterprise in any calendar fiscal year in which its gross receipts, averaged over the Person's previous five fiscal years, exceed the size standards of 13 CFR Part 121.

REQUEST FOR PREFERENCE

\_\_\_\_\_ Bidder is requesting to receive a preference as a VBE. By requesting this preference, Bidder certifies that it meets the definition of a VBE, as set forth above and has included a copy of its certification.

\_\_\_\_\_ Bidder is requesting to receive a preference as a SDVBE. By requesting this preference, Bidder certifies that it meets The definition of a SDVBE, as set forth above and has included a copy of its certification.

\_\_\_\_\_  
Bidder (please print or type)

\_\_\_\_\_  
Title

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
E-mail address

\_\_\_\_\_  
Phone Number

Subscribed to and sworn before me  
this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

My commission expires:

\_\_\_\_\_  
Notary Public Signature

\_\_\_\_\_  
Notary Seal



**EXHIBIT 4**

**VETERAN'S WORKPLACE PREFERENCE PUBLIC WORKS CONTRACTS**

**AFFIDAVIT  
VETERAN'S WORKPLACE PREFERENCE PUBLIC WORKS CONTRACTS**

**INSTRUCTIONS**

In accordance with Section 34-236(a) of the Cook County Procurement Code, the Chief Procurement Officer ("CPO") shall give a preference of **one percent of the amount of the Contract** to a Responsible and Responsive Contractor for a Public Works Contract when such Contractor has committed by affidavit to utilize Eligible Veterans for at least five percent of the hours worked under such Contract. Failure to utilize Eligible Veterans in accordance with the affidavit will result in breach of contract. **All Bidders who are requesting this preference must complete this Affidavit.**

**DEFINITIONS**

*Eligible Veteran* means a person who (i) has been either a member of the armed forces of the United States or, while a citizen of the United States, was a member of the armed forces of allies of the United States in time of hostilities with a foreign country and (ii) has served under one or more of the following conditions: (a) the veteran served a total of at least 6 months; (b) the veteran served for the duration of hostilities regardless of the length of the engagement; (c) the veteran was discharged on the basis of hardship; or (d) the veteran was released from active duty because of a service connected disability and was discharged under honorable conditions.

*Armed forces of the United States* means the United States Army, Navy, Air Force, Marine Corps, Coast Guard or service in active duty as defined under 38 U.S.C. Section 101. Service in the Merchant Marine that constitutes active duty under Section 401 of federal Public Act 95-202 shall also be considered service in the armed forces for purposes of this Division.

*Public Works* means all fixed works constructed or demolished by the County, or paid for wholly or in part out of public funds administered by the County. "Public Works" as defined herein includes all projects financed in whole or in part with bonds, grants, loans, or other funds made available by or through federal or State government, or the County. "Public Works" does not include projects undertaken by the owner at an owner-occupied single-family residence or at an owner-occupied unit of a multifamily residence. "Public Works" includes any maintenance, repair, assembly, or disassembly work performed on equipment whether owned, leased, or rented.

I, \_\_\_\_\_, being first duly sworn, do depose and state as follows:

1. I am the authorized representative and I have the authority to make this Affidavit for and on behalf of the Bidder.
2. The Bidder is requesting the CPO grant a preference of one percent of the amount of the Contract in accordance with Section 34-236(a) of the Cook Procurement Code, as set forth above.
3. In accordance with the Cook County Procurement Code, the Bidder shall commit to utilize Eligible Veterans for at least five percent of the hours worked under the Contract. The Eligible Veterans must be employed directly by the Bidder.
4. The Bidder shall be solely responsible for requesting all persons to provide Bidder with appropriate documentation to ensure that such person(s) is an Eligible Veteran, as defined above. Bidder certifies, that by seeking this preference, it shall maintain appropriate documentation, including payroll records, which show the number of hours worked by Eligible Veterans.
5. The Bidder certifies, affirms and acknowledges that the failure to utilize Eligible Veterans in accordance with this Affidavit will result in a breach of contract, which will allow the County to seek all rights and remedies as set forth in the Contract and any other appropriate remedies available in equity or at law.

\_\_\_\_\_  
Bidder (please print or type)

\_\_\_\_\_  
Title

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
E-mail address

\_\_\_\_\_  
Phone Number

Subscribed to and sworn before me  
this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

My commission expires:

X  
\_\_\_\_\_  
Notary Public Signature

\_\_\_\_\_  
Notary Seal

**EXHIBIT 5**

**JOINT VENTURE FORMS**

**JOINT VENTURE FORMS**

**Qualified contractors wishing to combine bidding capacity and bid items as joint ventures must submit the appropriate properly completed forms and include them in their bid. The required joint venture forms include: (1) the ORIGINAL *Affidavit of Availability* (BC 57); (2) the ORIGINAL *Joint Venture Minimum Declaration of Work*; and (3) the ORIGINAL *Joint Venture Certificate of Explanation and Justification*.**



Firm #3 \_\_\_\_\_

73) Fifty-one percent (51%) common controlling ownership between firms.

Firm #1 \_\_\_\_\_ Firm #2 \_\_\_\_\_ Firm #3 \_\_\_\_\_

has attached statement indicating the relationship of the firms.

74) Estimated quantity of asphalt for this item exceeds 10,000 tons.

75) Estimated quantity of concrete exceeds 5,000 cubic yards.

76) Estimated costs of project are less than \$1,000,000.

I/WE being duly sworn do hereby declare the explanation and justification to be a true and correct statement.

I, WE being duly sworn, do hereby declare the explanation and justification to be a true and correct statement.

**Firm #1**  
Name \_\_\_\_\_ Title \_\_\_\_\_  
(Print)

Signature (Proprietor, Partner, Officer or Director)

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_. (Notary Seal)

\_\_\_\_\_  
My commission expires on \_\_\_\_\_  
Notary Public

**Firm #2**  
Name \_\_\_\_\_ Title \_\_\_\_\_  
(Print)

Signature (Proprietor, Partner, Officer or Director)

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_. (Notary Seal)

\_\_\_\_\_  
My commission expires on \_\_\_\_\_  
Notary Public

**Firm #3**  
Name \_\_\_\_\_ Title \_\_\_\_\_  
(Print)

Signature (Proprietor, Partner, Officer or Director)

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_. (Notary Seal)

\_\_\_\_\_  
My commission expires on \_\_\_\_\_  
Notary Public

This form must be submitted with the bid.



**COOK COUNTY DEPARTMENT OF  
TRANSPORTATION AND HIGHWAYS  
Joint Venture Minimum Declaration of Work**

Bid Proposal Submission Date: \_\_\_\_\_  
 Item No.: \_\_\_\_\_  
 Joint Venture Name: \_\_\_\_\_  
 Managing Party: \_\_\_\_\_

**Firm #1**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

**Firm #2**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

**Firm #3**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

**Instructions:**

Indicate the percentage of work to be performed by each firm with their own forces.

	Firm #1	Firm #2	Firm #3
Earthwork	_____	_____	_____
Portland Cement Concrete Paving	_____	_____	_____
Bituminous Plant Mix	_____	_____	_____
Bituminous Aggregate Mixtures	_____	_____	_____
Miscellaneous Bituminous Paving	_____	_____	_____
Cleaning and Sealing Cracks & Joints	_____	_____	_____
Soil Stabilization and Modification	_____	_____	_____
Aggregate Bases and Surfaces	_____	_____	_____
Highway, Railroad & Waterway Structures	_____	_____	_____
Drainage	_____	_____	_____
Electrical	_____	_____	_____
Cover & Seal Coats	_____	_____	_____
Slurry Applications	_____	_____	_____
Miscellaneous Concrete Construction	_____	_____	_____
Landscaping	_____	_____	_____
Seeding & Sodding	_____	_____	_____
Vegetation Spraying	_____	_____	_____
Tree Trimming & Selective Tree Removal	_____	_____	_____

Fencing	_____	_____	_____
Guardrail	_____	_____	_____
Grouting	_____	_____	_____
Painting	_____	_____	_____
Signing	_____	_____	_____
Paint Pavement Marking	_____	_____	_____
Thermoplastic Pavement Marking	_____	_____	_____
Epoxy Pavement Marking	_____	_____	_____
Installation of Raised Pavement Markers	_____	_____	_____
Pavement Texturing & Surface Removal	_____	_____	_____
Cold Milling, Planning & Rototilling	_____	_____	_____
Erection	_____	_____	_____
Demolition	_____	_____	_____
Other	_____	_____	_____

I, WE being duly sworn, do hereby declare the explanation and justification to be a true and correct statement.

**Firm #1**

Name \_\_\_\_\_ Title \_\_\_\_\_  
(Print)

Signature (Proprietor, Partner, Officer or Director) \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_. (Notary Seal)

My commission expires on \_\_\_\_\_  
Notary Public

**Firm #2**

Name \_\_\_\_\_ Title \_\_\_\_\_  
(Print)

Signature (Proprietor, Partner, Officer or Director) \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_. (Notary Seal)

My commission expires on \_\_\_\_\_  
Notary Public

**Firm #3**

Name \_\_\_\_\_ Title \_\_\_\_\_  
(Print)

Signature (Proprietor, Partner, Officer or Director) \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_. (Notary Seal)

My commission expires on \_\_\_\_\_  
Notary Public

This form must be submitted with the bid.



**EXHIBIT 6**

**CONTRACTOR'S AND SUBCONTRACTOR'S CERTIFICATION CONCERNING LABOR  
STANDARDS AND PREVAILING WAGE REQUIREMENTS**

**CONTRACTOR'S**  
**CERTIFICATION CONCERNING LABOR STANDARDS**  
**AND**  
**PREVAILING WAGE REQUIREMENTS**

**To Contractor:**

Date: 9/2/16  
 Project Number: Contract 1628-15554  
 Project Name: Electrical and Mechanical Item Maintenance Various Locations  
                   Section 17-8EMIm-00-GM  
                   Route: Various Locations

1. If awarded the contract with the County of Cook for the construction of the above identified project, the undersigned agrees that:

- (a) The Labor Standards provisions of the Contract for Construction are included in the aforesaid contract.
- (b) Correction of any infractions of the aforesaid conditions, including infractions by any of his Subcontractors and any lower tier subcontractors, is his responsibility.

2. He certifies that:

- (b) Neither he nor any firm, corporation, partnership or association in which he has a substantial interest is designated as an ineligible contractor by the Comptroller General of the United States pursuant to Section 5.6(b) of the Regulations of the Secretary of Labor, Part 5 (29CFR Part 5) or pursuant to the Section 3(a) of the Davis-Bacon Act, as amended [40 U.S.C. 276a-2(a)]
- (c) No part of the aforementioned Contract has been or will be subcontracted to any Subcontractor if such Subcontractor or any firm, corporation, partnership or association in which such Subcontractor has a substantial interest is designated as an ineligible Contractor pursuant to any of the aforementioned regulatory or statutory provisions.

3. He agrees to obtain and forward to the aforementioned recipient within ten days after the execution of any subcontract, including those executed by his Subcontractor any lower tier subcontractor, a Subcontractor's Certification Concerning Labor Standards and Prevailing Wages Requirements executed by the Subcontractors.

4. He certifies that:

- (a) The legal name and the business address of the undersigned are:
- (b) The undersigned is (check one):
  - Sole Proprietorship
  - Partnership
  - Corporation
  - Other Organization (Describe)
- (c) The name, title and address of the owner, partners or officers of the undersigned are:

NAME	TITLE	ADDRESS
Frank J. Lizzadro	CEO	6850 West 62nd Street, Chicago, IL 60638
Frank A. Lizzadro	President	Same as above

Michael K. Knutson	Vice President	Same as above
Joe Van Gundy III	Vice President	Same as above
David A. Leali	Vice President & Ass't Sec'y	Same as above

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John S. Lizzadro	Sec'y & Treas.	2215 York Rd., Ste 304, Oakbrook, IL 60523
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(d) The name and address of all other persons, both natural and corporate, having a substantial interest in the undersigned, and the nature of the interest are (if none, so state):

NAME	ADDRESS	NATURE OF INTEREST
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None

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(e) The names and addresses and trade classifications of all other building construction contractors in which the undersigned has a substantial interest is (if none, so state):

NAME	ADDRESS	TRADE CLASSIFICATION
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None

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DATE 9/2/16

Meade, Inc.  
CONTRACTOR

X [Signature]  
SIGNATURE



**EXHIBIT 7**

**RESPONSIBLE BIDDER REQUIREMENT**

**RESPONSIBLE BIDDER REQUIREMENT**

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 approved 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 centered, 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 is accounted for and listed.

International Brotherhood of Electrical Workers

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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.

**EXHIBIT 8**

**BIDDING SUPPLEMENTAL**

## BIDDING SUPPLEMENTAL

Each bidder shall furnish a financial statement and experience questionnaire and otherwise comply with all of the requirements of Article 102.01 of the Standard Specifications. Should the bidder not already have the required vehicles, equipment, personnel, shops and storage areas, the proposal shall include a plan for acquiring the necessary resources and conducting the work.

The prospective bidder shall, before submitting his bid, carefully examine the proposal form, plans, specifications, special provisions and form of contract and bond. He shall inspect in detail all of the locations to be maintained under this contract and familiarize himself with all the local conditions affecting the contract and the detailed requirements of maintenance. In order to assist the Contractor with this requirement, site inspections can be conducted by Department personnel and the Contractor.

He shall be responsible for any preexisting maintenance deficiencies that may exist at the time this contract is awarded and his bid shall reflect these deficiencies. If the Department knows of any discrepancies, the Contractor will be notified by addendums. If this bid is accepted, he will be responsible for all errors in his proposal resulting from his failure or neglect to comply with these instructions. The Department will, in no case, be responsible for any change in anticipated profits resulting from such failure or neglect.

Quantities included for bidding are only estimated and actual quantities may vary. The pace of construction activities within the County as well as a numbers of other unpredictable factors will cause variances from these indicated quantities, both for routine maintenance pay items and non-routine pay items.

The Contractor's unit prices are expected to be realistic and no additional compensation will be allowed due to a variance in quantities; however the Engineer retains the right to seek a revised unit price where quantities exceed estimated quantities to the extent that additional economies of scale would be normal.

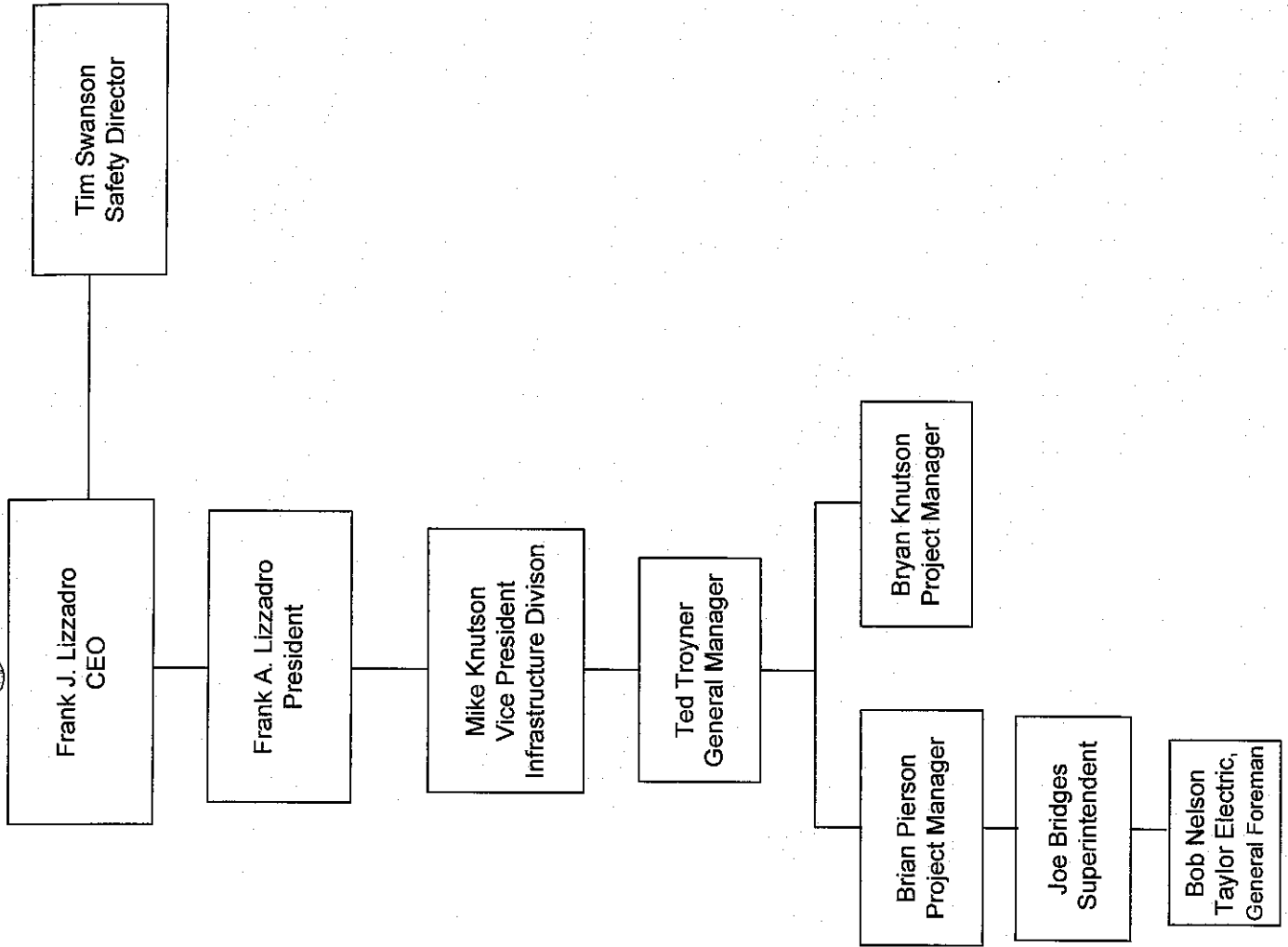
The bidder shall prepare an affidavit, to be included with his bid, that he has examined the contract proposal and has familiarized himself with all of the requirements of said contract, as well as all of the electrical and mechanical equipment, installations and systems covered by said contract, and that he has sufficient knowledge of the operational features of the equipment, installations and systems and the maintenance requirements to recognize fully the responsibilities conveyed by the award of said contract, and that if awarded to him he will be fully prepared to implement any and all provisions of said contract beginning January 1, 2017 at 12:01 a.m. without delay or interruption.

The bidder shall also attach hereto the following items demonstrating his ability to fulfill the requirements of said contract:

- Name of the bidding company and its owners and/or officers
- An organizational chart that illustrates the structure of the organization, and relationship to the Contract, including proposed work units, divisions, and departments, with named Electrical Maintenance Contract positions and/or roles and the responsibilities of each in order to administer and perform the work as required herein.



- Resumes of each individual shall be provided to support their position qualifications.
- A list of the categories and number of persons including qualifications in his employ who will be used exclusively for the prosecution of this contract.
- A description, including square footage, and location of the bidder's current headquarters, the spaces to be utilized for this Contract and any shop and storage facilities available for the prosecution of this contract and whether such facilities are owned or are to be leased. (See "CONTRACT FACILITY REQUIREMENTS") ✓
- The name of the proposed Patrol Tracing software for this Contract and details of its operations to meet the Contract requirements herein. ✓
- A report which provides the number, type, year of manufacture of vehicles in use in the bidder's current operations, and the number of any additional vehicles to be purchased or leased for work on this Contract. ✓
- A report which summarizes the number and types of maintenance/construction equipment currently owned or leased by the bidder and quantity and name of additional. ✓
- A report which details the bidder's in-house familiarity and capability in installing and maintaining Closed-Circuit Television (CCTV) and video distribution systems. ✓
- A report which describes the bidder's in-house familiarity with Programmable Logic Controller (PLC) equipment and troubleshooting of ladder logic used in the pump systems. ✓
- A report which describes the bidder's in-house work on fiber optic systems.
- A description of his two-way mobile communication system and staffing plan for the dispatch center. ✓
- A description of the test facilities available within his Company to overhaul and bench test all electromechanical, solid state, microprocessor, analog and digital control equipment.
- A description of the qualifications of the personnel who will be engaged in the testing and overhaul of the control equipment. ✓
- A report which provides the number of Patrol Vehicles in use in the bidder's current operations, and the number of new Patrol Vehicles to be purchased or leased to meet the requirements of this Contract. ✓
- A report which describes the bidder's experience in maintaining and operating Eagle and Econolite closed loop systems and Centracs central monitoring systems. This report should also include a list of software license for above systems. ✓





## Frank A Lizzadro

### Work Experience

#### Present:

President Meade, Inc. responsible for all Infrastructure and Utility Division operations.

#### 2001-2013:

Vice President responsible for managing utility and civil operations to a broad based and rapidly changing energy and telecommunications utilities market, including engineering, procurement, installation and maintenance of both existing and new facilities.

#### 1999-2001:

Operations Manager responsible for overseeing construction and maintenance operations, bidding, contract negotiations, man power and equipment scheduling, and asset management.

#### 1997-1999:

Project Manager responsible for estimating and managing natural gas and telecommunications projects.

#### 1993-1997:

Field Personnel on crews performing underground construction.

#### 1989-1992:

Yard Hand

### Education

University of Iowa, B.A. English, B.A. Communication Studies, Minor Classics  
Continuing Education Classes from DePaul University and University of Illinois Chicago  
FMI's Strategic Planning  
FMI's Contractor Performance management  
FMI's Improving Construction Productivity  
FMI's Strategic Alliances  
FMI's Equipment Executive Develop Institute  
Excavation and Trenching Competent Person Training  
Three Rivers Manufacturing Safety Training  
OSHA 10 Hour  
Confined Space Training

### Affiliations

NECA Board of Directors Northern Indiana Chapter  
NECA Board of Directors Eastern Illinois Chapter  
Middle State Contractors Board of Directors  
Trustee NECA IBEW 176 Health and Welfare  
Trustee Middle States Pension, H&W  
Voices for Illinois Children



**Tim Swanson**

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**OBJECTIVE:**

Safety Professional and Insurance Manager to oversee Safety and Insurance for Meade Electric Company, Inc.

**QUALIFICATIONS:**

Competent Person in the following areas:

Confined Space	Excavations	Fall Protection
Hazardous Waste	Scaffolding	Respirator Use
Lockout/Tagout	Lead Abatement	Asbestos

**EMPLOYMENT:**

- 1999-Present Risk Manager, Meade Electric Company*  
Incorporated both the insurance and the safety aspects of the company into one department to work to prevent and eliminate all claims within the areas of service.
- 1994-1999 Safety Director, Meade Electric Company*  
Managed company safety program for Meade Electric throughout Illinois and Indiana with an average of 550 union electricians at 50+ jobsites.
- 1992-1994 Site Safety Representative, Meade Electric Company*  
Managed on-site safety for Meade Electric at Mobil Oil Refinery in Joliet, Illinois. Manpower varied from 12 to 365 union electricians.
- 1991-1992 Industrial Hygiene Technician, Carnow, Conibear & Associates*  
Managed Industrial Air monitoring of airborne contaminants in downtown Chicago for Tishman - Spier Properties

**EDUCATION**

- 1993-1998* Masters of Science, Indiana State University
- 1986-1991* Bachelor of Science, Indiana State University



**Michael K. Knutson**  
Vice President

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**Work Experience:**

**2001 to Present: Meade / L & H Company, Inc.**

Vice President Infrastructure Division with average annual sales of \$65,000,000.

Manage outside electrical operations for six Chicago area Meade office locations and Indianapolis.

Responsible for the day to day operation of installation and maintenance of:

Traffic Signals, SCADA controlled street lighting (Expressway, Arterial and Residential), Highway storm water pumping stations, Expressway Surveillance, Cameras, Reversible Lanes, Message Signs, Vehicle Detection, Fiber Optic System, Highway/Railroad interconnected Traffic Signal systems.

Responsible for electrical portion of CTA Wells/Van Buren Loop Track Renewal Project - \$10,000,000.

Managed \$24,000,000 NICTD Catenary Rehabilitation Project.

Infrastructure responds to approximately 17,000 immediate response electrical emergency calls for IDOT, 200 municipalities, ISTHA and the 6 Chicago Metro Area County Highway Departments.

**1999 through 2000: Contracting & Material Co. / L & H Company, Inc.**

Vice President responsible for managing Infrastructure Division including electrical construction and maintenance operations with average annual revenues of \$40,000,000 per year.

**1998 through 1999:**

Manager of electrical construction and maintenance division, responsible for oversight of bidding, contract negotiations, manpower and equipment scheduling, and financial performance. Division revenues of approximately \$20,000,000 per year.

**1996 through 1998:**

Traffic Signal Manager for Illinois Department of Transportation (IDOT), District 1 Electrical Maintenance Contract (EMC), responsible for supervising maintenance of all state owned intersections in 5 county area around metropolitan Chicago. Annual contract billings of approximately \$16,000,000 per year.

**1995 through 1996:**

Project Manager for IDOT District 1 EMC, responsible for supervising the maintenance of traffic signals, pumping stations, street lighting and traffic monitoring systems on state owned highways in 5 county area around metropolitan Chicago. Annual Contract billings of approximately \$15,000,000 per year.

Michael K. Knutson  
Resume  
Page 2

1993 through 1994:

South Area Supervisor for IDOT District 1 EMC, responsible for supervising the maintenance of traffic signals, pumping stations, street lighting and traffic monitoring systems on state owned highways in southern Cook and Will counties.

**1987 through 1992 Roadway Signal and Lighting Co. / L & H Company, Inc.:**

Patrolman responsible for maintaining traffic signals, pumping stations, street lighting and traffic monitoring systems.

1978 through 1987 Meade Electric Co.:

Shop Technician responsible for repair of solid state and electromechanical traffic signal control equipment.

1973 through 1978 Commercial Light Co.:

Journeyman Lineman responsible for installing streetlights and traffic signals.

1971 through 1973A & A Electric Co.:

Apprentice Lineman responsible for installation of ComEd transmission lines.

1969 through 1970 Brennan McNichols Construction Co.:

Summer helper for lineman responsible for assisting with installation of streetlights and traffic signals.

**Professional Memberships:**

I.B.E. W. Local #9 (since 1973)  
I.M.S.A. Level II Traffic Signal Technician (since 1996)  
IBEW Local 9 Apprenticeship Board

**Education:**

DeVry Institute of Technology (Electronic Technician Degree 1978)  
I.B.E. W. Local #9 Apprenticeship (completed 1975)  
Glenbard East High School Lombard, IL. (Graduated 1970)



Ted Troyner

Phone: 708-588-2544 / Cell: 708-243-1684

E-mail: tmt@meade100.com

**Areas of Expertise:**

CCTV Design, Implementation and Maintenance

Communications Systems / Wireless and Wireline

ITS Design and Maintenance

Power Distribution Testing

IBEW Local 9 Certified Instructor for CCTV Installation and Preventative Maintenance

**HIGHLIGHTS OF EXPERIENCE (18 YEARS):** 18 years experience in the construction, design and maintenance of electrical and technology systems. Primary responsibilities included managing and mentoring a group of field technicians in the ongoing maintenance of ITS systems. Lead CCTV and security engineer in support of all Meade Electric customers, including but not limited to IDOT, ISTHA, Exxon-Mobil, Dow Chemical, AON. Re-designed tower attachment methods for MG-Squared Camera Lowering devices.

**2000 – PRESENT      Meade – McCook, IL**

**CTA Wells/Van Buren Loop Track Renewal Project:** General Foreman

**ISTHA Traffic and Security Monitoring and Management Systems Maintenance (RFP #08-001):** Project Manager and General Foreman responsible for maintaining, providing technical support, establishing preventive and predictive maintenance programs for various technology systems throughout the entire ISTHA Network. System components covered, but not limited to, include CCTV Cameras, Dynamic Message Signs, Microwave Radar Detector Stations, Portable Changeable Message Signs, and Weigh-in-Motion Stations.

**IDOT Advanced Systems Maintenance Contract:** Lead Field Engineering Technician and General Foreman responsible for maintaining, providing technical support, establishing preventive and predictive maintenance programs for various technology systems deployed by IDOT. System components covered in the ASMC contract included CCTV cameras, CMS, REVLAC reversible lane control system, fiber backbone communication systems, IDOT District Operations Network – DON (CISCO Sonet based communications), PLC controllers, various redundant communication paths. Managed the field construction activities to establish and expand the Advanced Vehicle Location system, Homeland Security Ramp Gate Project, Homeland Security CCTV expansion on Kennedy Expressway, along with the power and communications for Arterial DMS installations.

**IDOT Electrical Maintenance Contract:** Field engineer responsible for supporting various maintenance initiatives. Provided technical support and design expertise in the implementation of fiber optic communications and CCTV expansion.

**INDOT I-465 ITS Advanced Traffic Management Systems Phase 3 and 4:** Field support engineer responsible for training and certifying Meade construction crews in the installation and commissioning of CCTV and wireless communications.

**Great Lakes Naval Training Center, Boiler #4 Controls Modification and Boiler House Network Enhancement:** Oversaw the fabrication and installation of custom mechanical interfaces for boiler automation project. Assisted with startup and commissioning services in support of engineering staff.

**DOW Chemical:** Designed, installed and commissioned CCTV installation for compliance to US Waterways Homeland Security initiatives.

**Exxon Mobil:** Designed, installed and commissioned CCTV and access control for pipeline and tank farm facilities for local and remote monitoring for Midwest region.

**Seneca Petroleum, Automated Truck Loading Rack:** Startup and testing support of automated loading and billing system for asphalt loading system.

**Commonwealth Edison, Mid-Circuit Recloser Program:** Lead testing engineer for expansion of Mid-Circuit recloser network. Provides real-time data and switching to increase responsiveness and reduce down-time to customers.

**Commonwealth Edison, Distribution Center SCADA:** Testing engineer for multi-firm design/build team responsible for designing, permitting, installing and commissioning SCADA remote terminal units (RTUs) at 407 utility power distribution substations across northern Illinois. Responsibilities included testing communications paths, on-site control testing, as-built documentation, device interface to existing equipment, providing technical support to other testing engineers.

**1997 – 2000 Chicago Transit Authority – Chicago, IL**

**Revenue Equipment Lineman:** Install and maintain automated fare collection devices. Responsible for preventative maintenance on fare collection system.

**1993 – 1995 Aldridge Electric Company – Libertyville, IL**

**Underground Distribution Installations:** Performed commercial and residential electrical service installation.

**Professional Affiliations:** IBEW Local #9 Foreman Lineman, Intelligent Transportation Society (ITS) of America – ITS Midwest Chapter Member

**Specialized Computer Knowledge:** AutoCAD, Rockwell Software PLC Programming, Rockwell Software RSView, RSView SE, Wonderware, Pelco Control Software, NKF Control and Configuration, CISCO ONS Management, Impath Control and Configuration, Harris FarSCAN, EXFO Fiber Splicing and Testing

**Specialized Training:** ITS Standards Training Courses, National Electric Code Courses, National Fire Protection Training Courses, Wi-Fi Certified Engineer, Harris Microwave Certified Communications Engineer Courses, Blonder Tongue CCTV Distribution Courses, Predictive Maintenance Training and Analysis Courses, AutoCAD Programming Courses, Rockwell Software Certified Programming Engineer for Logic Controllers, Motorola MOSCAD Controller Programming Courses, Wonderware Graphical User Interface Courses, Square-D PLC Programmer Courses, Instructor for IBEW Local 9 CCTV Installation and Preventative Maintenance, Comtrain Certified Tower Climber, and OSHA 30 Hour

**Education**

B.A., 1996, Sound Technologies – Columbia College – Chicago, IL  
Specialty in environmental acoustics and wave propagation.





BRIAN PIERSON

**EXPERIENCE**

**Meade (October, 1997 to Present)**

***Superintendent***

**CTA Loop Track Replacement Project**

- Manage, supervise, oversee and coordinate field labor crews and day-to-day construction activities for the following items:
  - Signal System Component Removal and Re-Installation
  - Signal Construction of New Emergency Crossover
  - Running Rail Joint Bonding and Special Trackwork Bonding
  - Traction Power Cable Removal and Installation
- Oversee and coordinate field labor crews from subcontractors for the following items:
  - Contact Rail Removal and Replacement
  - SIG Rail Bonding
- Coordinate material handling with General Contractor and other subcontractors

**IDOT I-90/94 Dan Ryan Expressway Lighting & Surveillance Project (\$25M) – Chicago, IL**

Manage, supervise, oversee, and coordinate the field labor crews and day-to-day construction activities for installation of the following items:

- Temporary lighting, CCTV camera, and surveillance systems
- Permanent underground conduit infrastructure via trenching and directional bore construction installation methods to support lighting and communications systems
- Permanent lighting system using conventional light poles, high mast light towers, underpass luminaries, and radio/SCADA based controllers
- Over 300,000 feet of single mode fiber optic cable for a backbone and distribution communications system
- An Intelligent Transportation System (ITS) consisting of communications shelters with generators, CCTV cameras, changeable message signs (CMS), highway advisory radio (HAR), ramp metering system, and microloops, sawcut and preformed loop detector stations
- CTA Orange Line Traction Power signal installation
- CTA Green Line Traction power signal installation



***Foreman***

**Illinois State Toll Highway Authority Road Runner Project**

Constructed and installed foundations and poles, which included mounting solar panels, RTMS units, cabinets for the batteries, charger units, and cellular modems, for use by the Tollway, Mobility Technologies, and other media outlets to broadcast live traffic data to the public.

**IDOT District 1 Advanced System and Electrical Maintenance Contracts**

Managed and constructed several roadway lighting, surveillance, and electrical related construction projects. Installations included trenching or plowing conduit infrastructure and pulling electric and/or fiber optic cables through existing conduit as well as the installation of numerous CCTV cameras on lowering units along with underpass lights for homeland security type applications.

**McLeodUSA**

Managed and constructed via a directional boring construction method an underground fiber optic cable communications backbone from downtown Chicago to Oak Park, Illinois.

**Level 3 Communications, Inc.**

Managed and constructed via a directional boring construction method an underground fiber optic cable communications backbone at five (5) different locations throughout the surrounding Chicago suburbs.

**SunStrand Electric Company – Communications Division (October to December, 1997)**

***Journeyman Lineman***

Installation through existing conduit, splicing, terminating, and testing of fiber optic cable for Unicom billing system in the Chicago loop.

**Divane Brothers Electric Company (January to September, 1997)**

***Journeyman Lineman***

Assembly and installation of all electrical aspects of traffic signals and street lighting systems such as on the State Street Revitalization Project for the City of Chicago Department of Transportation that often entailed operation of various heavy construction equipment.



**Walker Electric (January to December, 1996)**

Assembly and installation of all electrical aspects of traffic signals and street lighting systems that often entailed operation of various heavy construction equipment.

**Utility Dynamics (5/91 to 9/91 & 5/92 to 9/92 & 9/95 to 5/96)**

CTA Orange Line Traction Power signal installation Contractor

CTA Green line Tracion power signal installation Contractor Utility Dynamics

**EDUCATION: B.A., 1994, Art – Illinois State University**

**SPECIALIZED TRAINING:**

- Union Pacific Railroad Safety School
- OSHA 40 Hour certification
- IMSA Certified
- CPR/First Aid Training
- OSHA Competent Person Excavation & Confined Space
- Operating Heavy Construction Equipment: Elliot's/Bucket Trucks, Excavators, Plows, Direction Bore Machines, Line Tamers, Cable Trailers/Pullers/Blowers, Etc.
- IBEW Local Union # 9 Journeyman & Apprentice Fiber Optics



# Bryan M. Knutson

bknutson@meade100.com

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## WORK EXPERIENCE:

**2012:** IDOT ELECTRICAL MAINTENANCE CONTRACT  
IMSA LEVEL 2 TRAFFIC CERTIFIED

**2001 to 2012:** PROJECT MANAGER/ESTIMATOR  
MEADE, MCCOOK, ILLINOIS

- Bidding and managing electrical construction jobs.
- General electrical contracting work

**6/96 to 2000:** ELECTRICAL APPRENTICE  
(SUMMER WORK) CONTRACTING AND MATERIAL, CHICAGO, ILLINOIS

- Electrical construction work to finance college expenses
- General electrical contracting work
- Assisted in supplying information for bids
- Vacation relief for system administrator

**12/98 to 01/00:** SHIPPING AND RECEIVING  
(WINTER WORK) TRAFFIC CONTROL CORPORATION, ADDISON, ILLINOIS

- Pulled orders and prepared them to be shipped out
- Made deliveries
- Wired control boxes

## ACTIVITIES/ACCOMPLISHMENTS:

- Member of Benedictine University Business Club (1999-2000)
- Financed college education through loans, scholarships, grants and employment
- Four year member of Benedictine University Men's Varsity Baseball team
- Working proficiency of Microsoft Word, Access, Excel, and Power Point

## EDUCATION:

Bachelor of Business Administration: December 2000  
Major: Management and Organizational Behavior  
Benedictine University, Lisle, Illinois  
Willowbrook High School, Villa Park, Illinois June 1996

- **RELATED COURSES**
- Accounting I and II, Managerial Finance
- Marketing, Consumer Behavior
- Management, Organizational Behavior, Human Resource
- Production and Operations, Strategic Management
- International Business
- Various Computer Courses

## BIDDER AFFIDAVIT

Bidder has furnished a financial statement and experience questionnaire and otherwise complied with all of the requirements of Article 102.01 of the Standard Specifications. Such document is a part of a complete Prequalification on file with Cook County.

Bidder has the required vehicles, equipment, personnel, shops and storage areas, required by the proposal.

Bidder has examined the contract proposal and has familiarized himself with all of the requirements of said contract, as well as all of the electrical and mechanical equipment, installations and systems covered by said contract, and that he has sufficient knowledge of the operational features of the equipment, installations and systems and the maintenance requirements to recognize fully the responsibilities conveyed by the award of said contract, and that if awarded to him he will be fully prepared to implement any and all provisions of said contract beginning January 1, 2017 at 12:01 a.m. without delay or interruption.

Name of bidding company and its owners and/or officers are identified on the Corporate Resolution included with this proposal.

Organizational Chart included with supporting resumes.

Patrol Tracing software name is Twig.


Bidder experience in maintaining the operating Eagle and Econolite closed loop systems and Centracs central monitoring systems.

**Contractor currently holds this contract and certifies there will be no changes to items listed below:**

- Number, type, and size of each item of mobile equipment, including maximum service height on lift type vehicles, which will be used exclusively for this contract, whether this equipment is owned or is to be leased. All equipment has two-way radios installed.
- The categories and number of persons in Meade employ will be used exclusively for the prosecution of this contract.
- Square footage, and location of the bidder's current headquarters, the spaces to be utilized for this Contract and any shop and storage facilities available for the prosecution of this contract and such facilities are owned or leased.
- Two-way mobile communication system and staffing plan for the dispatch center.
- The test facilities available within his Company to overhaul and bench test all electromechanical, solid state, microprocessor, analog and digital control equipment
- The qualifications of the personnel who will be engaged in the testing and overhaul of the control equipment.
- The number and types maintenance/construction equipment required are currently owned or leased.
- Familiarity with and capability in installing and maintaining Closed-Circuit Television (CCTV) and video distribution systems
- Familiarity with Programmable Logic Controller (PLC) equipment and troubleshooting of ladder logic used in the pump systems
- The number of Patrol Vehicles in use in the bidder's current operations, and the number of new Patrol Vehicles to be purchased or leased to meet the requirements of this Contract.

CONTRACTOR: Meade, Inc.

BY:

  
Michael K. Knutson  
Vice President



Subscribed and sworn to before me this 2nd day of September, 2016.

*Shalma Richards*

(Notary Signature)

(Notary Seal)



**General Questions**

1. Has the Applicant's representative responsible for the completion of this application read the rules for Prequalification of Contractors?  Yes  No

2. What is the form of business organization of the Applicant?

Sole Proprietorship

Partnership

Corporation

LLC

3. How many years has the Applicant been in business under the business name? List any prior name or assumed name and years in business.

93 YEARS

4. Is the Applicant an outgrowth, result or reorganization of a predecessor business?  Yes  No  
If yes, list the name and address of each predecessor business and indicate whether any is still in business.

5. Will an assumed name be used for bidding purposes? If so, indicate the name.

NO

6. If the Applicant is a corporation, indicate the state or commonwealth and the date of incorporation.

DELAWARE

DATE OF INCORPORATION: 11/26/1980

6a. Indicate whether the Applicant is a parent or subsidiary corporation and the name and address of each such related company.

SEE ATTACHED

6b. Indicate whether the Applicant has affiliates and the name and address of each such related company.

SEE ATTACHED

6c. Indicate whether any of the related companies listed are engaged in similar or related business as that of the Applicant.

SEE ATTACHED

6d. Indicate whether the Applicant's owners have ownership in other prequalified construction companies and the name and address of each such owned company.

SEE ATTACHED

L & H COMPANY, INC.  
GENERAL QUESTIONS  
 December 31, 2015

GENERAL QUESTIONS 6a, 6b and 6c and 6d

Name and Address	Percentage Owned	Business	Similar / Related Yes / No
Meade Electric Company, Inc. 9550 W. 55th Street, Suite A McCook, IL 60525	100	Electrical Contractor	Yes
Meade, Inc. 9550 W. 55th Street, Suite A McCook, IL 60525	100	Electrical Contractor	Yes
Meade Industries, Inc. 9550 W. 55th Street, Suite A McCook, IL 60525	100	Electrical Contractor	Yes
Traffic Control Corporation 10435 Argonne Woods Drive Woodridge, IL 60517	100	Resale of Traffic Control Equipment	Yes
Lizzadro Properties 2215 York Road, Suite 304 Oak Brook, IL 60523	100	Property Management	No
Security Analysts, Inc. 2215 York Road, Suite 304 Oak Brook, IL 60523	100	Professional Accounting Services	No
SPEC Construction, Inc 4720 Salisbury Road Jacksonville, Fl 32256	75	Railroad Crossing Construction	Yes



7. If not a corporation, does the Applicant conduct its business in connection with any other company or firm?  
 Yes     No  
If yes, indicate the business name and address of each such related company.

N/A

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8. Is the Applicant a Disadvantaged Business Enterprise certified by any recipient of federal funds provided by any Administration of the United States Department of Transportation?     Yes     No  
If yes, indicate the certifying recipient.

9. Section 650.110 of the rules for Prequalification of Contractors lists reasons for denial of prequalification ratings. Does the Applicant have any information or knowledge relevant to any of the listed reasons that has not been disclosed otherwise with this application?     Yes     No  
If yes, indicate this information.
- 
- 
- 
- 

10. List the name of each owner, shareholder, partner, member, beneficiary or any other person expected to have a direct pecuniary interest in a contract awarded by the Department who holds an elective office in the State of Illinois; who is appointed to or employed in any office or agency of State government; or who is the spouse or minor child of any such person and explain.

N/A

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11. Does the Contractor possess all permits or licenses to operate equipment?     Yes     No  
If no, explain fully.
- 
- 
- 
-

## Experience

Check the work Categories the contractor desires for prequalification. See Appendix A for the rules for prequalification for definitions. For each category of work checked, indicate the dollar amount of work performed (1,000's) by the contractor's own forces. Do not include work performed by subcontractors. New applications should list work for the previous three (3) fiscal years if available. Renewal applications should list work for the previous fiscal year only.

	Available Work Categories	Year : 2015	Year :	Year :
<input checked="" type="checkbox"/>	1 Earthwork	176,215	_____	_____
<input type="checkbox"/>	2 Portland Cement Concrete Paving	_____	_____	_____
<input type="checkbox"/>	3 Bituminous Plant Mix	_____	_____	_____
<input type="checkbox"/>	4 Bituminous Aggregate Mixtures	_____	_____	_____
<input type="checkbox"/>	5 Miscellaneous Bituminous Paving	_____	_____	_____
<input type="checkbox"/>	6 Cleaning and Sealing Cracks & Joints	_____	_____	_____
<input type="checkbox"/>	7 Soil Stabilization and Modification	_____	_____	_____
<input type="checkbox"/>	8 Aggregate Bases and Surfaces ( <input type="checkbox"/> A, <input type="checkbox"/> B,)	_____	_____	_____
<input type="checkbox"/>	9 Structures ( <input type="checkbox"/> Highway, <input type="checkbox"/> Railroad, <input type="checkbox"/> Waterway)	_____	_____	_____
<input type="checkbox"/>	10 Structures Repair	_____	_____	_____
<input type="checkbox"/>	11 Anchors and Tiebacks	_____	_____	_____
<input checked="" type="checkbox"/>	12 Drainage	3,250	_____	_____
<input type="checkbox"/>	13 Drainage Cleaning	_____	_____	_____
<input checked="" type="checkbox"/>	14 Electrical	199,141	_____	_____
<input type="checkbox"/>	15 Cover and Seal Coats ( <input type="checkbox"/> A, <input type="checkbox"/> B,)	_____	_____	_____
<input type="checkbox"/>	16 Slurry Applications	_____	_____	_____
<input checked="" type="checkbox"/>	17 Miscellaneous Concrete Construction	750	_____	_____
<input type="checkbox"/>	18 Landscaping	_____	_____	_____
<input type="checkbox"/>	19 Seeding and Sodding	_____	_____	_____
<input type="checkbox"/>	20 Vegetation Spraying	_____	_____	_____
<input type="checkbox"/>	21 Tree Trimming and Selective Tree Removal	_____	_____	_____
<input type="checkbox"/>	22 Fencing	_____	_____	_____
<input type="checkbox"/>	23 Guardrail	_____	_____	_____
<input type="checkbox"/>	24 Grouting	_____	_____	_____
<input type="checkbox"/>	25 Painting	_____	_____	_____
<input type="checkbox"/>	26 Signing	_____	_____	_____
<input type="checkbox"/>	27 Paint Pavement Marking	_____	_____	_____
<input type="checkbox"/>	28 Thermoplastic Pavement Marking	_____	_____	_____
<input type="checkbox"/>	29 Epoxy Pavement Marking	_____	_____	_____
<input type="checkbox"/>	30 Installation of Raised Pavement Markers	_____	_____	_____
<input type="checkbox"/>	31 Pavement Texturing and Surface Removal	_____	_____	_____
<input type="checkbox"/>	32 Cold Milling, Planning and Rotomilling	_____	_____	_____
<input type="checkbox"/>	33 Erection	_____	_____	_____
<input type="checkbox"/>	34 Demolition	_____	_____	_____
<input type="checkbox"/>	35 Fabrication	_____	_____	_____
<input type="checkbox"/>	36 Tunnel Excavation	_____	_____	_____
<input type="checkbox"/>	37 Expressway Cleaning	_____	_____	_____
<input type="checkbox"/>	38 Railroad (Track) Construction	_____	_____	_____
<input type="checkbox"/>	39 Marina Construction	_____	_____	_____
<input type="checkbox"/>	40 Hydraulic Dredging	_____	_____	_____
<input type="checkbox"/>	41 Hot (in-place) Recycling	_____	_____	_____
<input type="checkbox"/>	42 Cold (in-place) Recycling	_____	_____	_____
(a) Total of the above		379,356	_____	_____
(b) Amount of sublet		28,355	_____	_____
(c) Total annual volume of work		407,711	_____	_____

Record of Past Experience

New Applications - List major projects performed by the contractor's own forces for the previous three (3) fiscal years. Including Federal, State, County, City and private work. The total dollar amounts and work category dollar amounts must be listed for each project. Do not include work performed by subcontractors.

Renewal Applications - List major projects performed by the contractor's own forces for the previous fiscal year. Including Federal, State, County, City and private work. The total dollar amounts and work category dollar amounts must be listed for each project. Do not include work performed by subcontractors.

Please see Appendix "A" of the rules for prequalification to determine the appropriate category for completed work.

Category Number	Name, Address and Phone Number of Reference	Year	Total in (1000's) (\$)	Earth-work (\$)	PCC Paving (\$)	Blt. Plant Mix (\$)	BAM (\$)	Agg., Bases & Surf. (\$)	Struct. (\$)	Drain. (\$)	Elect. (\$)	Misc. Conc. (\$)	(\$)
1731.00	COM ED 500 JOLIET ROAD WILLOWBROOK, IL. 60521	2015	116,000								116,000		
1794.02	PEOPLES GAS, 130 E. RANDOLPH, CHICAGO, IL. 60601 (312) 240-4715	2015	1,353	1,353									
1794.02	WE ENERGIES 231 W. MICHIGAN STREET MILWAUKEE, WI. 53290	2015	1617	1,617									
1794.02	WE ENERGIES 231 W. MICHIGAN STREET MILWAUKEE, WI. 53290	2015	1105	1,105									
1794.02	WE ENERGIES 231 W. MICHIGAN STREET MILWAUKEE, WI. 53290	2015	3301	3,301									
1794.02	WE ENERGIES 231 W. MICHIGAN STREET MILWAUKEE, WI. 53290	2015	649	649									
1731.00	IDOT 2400 S. DIRKSEN PARKWAY SPRINGFIELD, IL. 62764	2015	23,762							3,250	19,762	750	
	Sub-Total		147,787	8,025						3,250	135,762	750	
	Sub-Total (pg 6-(1-13))		#REF!	#REF!						#REF!	#REF!	0	
	Total(s)		#REF!	#REF!						#REF!	#REF!	750	

Record of Past Experience

New Applications - List major projects performed by the contractor's own forces for the previous three (3) fiscal years. Including Federal, State, County, City and private work. The total dollar amounts and work category dollar amounts must be listed for each project. Do not include work performed by subcontractors.

Renewal Applications - List major projects performed by the contractor's own forces for the previous fiscal year. Including Federal, State, County, City and private work. The total dollar amounts and work category dollar amounts must be listed for each project. Do not include work performed by subcontractors.

Please see Appendix "A" of the rules for prequalification to determine the appropriate category for completed work.

Category Number	Name, Address and Phone Number of Reference	Year	Total in (1000's) (\$)	Earth-work (\$)	PCC Paving (\$)	Bit. Plant Mix (\$)	BAM (\$)	Agg., Baseses & Surf. (\$)	Struct. (\$)	Drain. (\$)	Elect. (\$)	Misc. Conc. (\$)	(\$)
1794.02	WE ENERGIES 231 W. MICHIGAN STREET MILWAUKEE, WI. 53290	2015	649	649									82153700000 x
1794.02	WE ENERGIES 231 W. MICHIGAN STREET MILWAUKEE, WI. 53290	2015	1,303	1,303									82153750000 x
1794.02	WE ENERGIES 231 W. MICHIGAN STREET MILWAUKEE, WI. 53290	2015	1,188	1,188									82153760000 x
1794.02	WE ENERGIES 231 W. MICHIGAN STREET MILWAUKEE, WI. 53290	2015	640	640									82153770000 x
1794.02	WE ENERGIES 231 W. MICHIGAN STREET MILWAUKEE, WI. 53290	2015	869	869									82153780000 x
1731.00	ILLINOIS TOLLWAY 2700 W. OGDEN AVE., DOWNERS GROVE, IL. 60602	2015	1,715								1,715		32016100000 x
1794.02	WE ENERGIES 231 W. MICHIGAN STREET MILWAUKEE, WI. 53290	2015	11,803	11,803									82155440000 x
1794.02	NICOR (630) 983-8888 1844 FERRY ROAD NAPERVILLE, IL. 60563	2015	10,727	10,727									82157610000 X
	Sub-Total		28,894	27,179							1,715		
	Sub-Total (pg 6)												
	Total(s)												

Record of Past Experience

New Applications - List major projects performed by the contractor's own forces for the previous three (3) fiscal years. Including Federal, State, County, City and private work. The total dollar amounts and work category dollar amounts must be listed for each project. Do not include work performed by subcontractors.

Renewal Applications - List major projects performed by the contractor's own forces for the previous fiscal year. Including Federal, State, County, City and private work. The total dollar amounts and work category dollar amounts must be listed for each project. Do not include work performed by subcontractors.

Please see Appendix "A" of the rules for prequalification to determine the appropriate category for completed work.

Category Number	Name, Address and Phone Number of Reference	Year	Total in (1000's) (\$)	Earth-work (\$)	PCC Paving (\$)	Bit. Plant Mix (\$)	BAM (\$)	Agg. Bases & Surf. (\$)	Struct. (\$)	Drain. (\$)	Elect. (\$)	Misc. Conc. (\$)	
	IDOT												
1731.00	2400 S. DIRKSEN PARKWAY SPRINGFIELD, IL 62764	2015	731								731		32043070000 X
	COOK COUNTY DEPT OF TRANS. 118 N. CLARK STREET, ROOM 914 CHICAGO, ILLINOIS TOLLWAY 2700 W.	2015	2,114	0							2,114		32044040000 X
1731.00	OGDEN AVE., DOWNERS GROVE, IL. 60602	2015	851								851		32043090000 X
1731.00	COOK COUNTY DEPT OF TRANS. 118 N. CLARK STREET, ROOM 914 CHICAGO, VARIOUS OTHER ELECTRICAL CONTRACTS EACH UNDER \$600,000	2015	805								805		32041780000 X
1731.00	City of Naperville, 400 S. EAGLE STREET P.O. BOX 3020 NAPERVILLE, IL. 60566	2015	17,082								17,082		X
1731.00	ILLINOIS TOLLWAY 2700 W. OGDEN AVE., DOWNERS GROVE, IL. 60602	2015	1,812								1,812		32038840000 X
1794.02	PEOPLES GAS, 130 E. RANDOLPH, CHICAGO, IL. 60601 (312) 240-4715	2015	657	657							7087		32044390000 X
	Sub-Total (pg 6)		31,139	657							30,482	0	82154660000 X
	Total(s)												

0

Record of Past Experience

New Applications - List major projects performed by the contractor's own forces for the previous three (3) fiscal years. Including Federal, State, County, City and private work. The total dollar amounts and work category dollar amounts must be listed for each project. Do not include work performed by subcontractors.

Renewal Applications - List major projects performed by the contractor's own forces for the previous fiscal year. Including Federal, State, County, City and private work. The total dollar amounts and work category dollar amounts must be listed for each project. Do not include work performed by subcontractors.

Please see Appendix "A" of the rules for prequalification to determine the appropriate category for completed work.

Category Number	Name, Address and Phone Number of Reference	Year	Total in ('1000's) (\$)	Earth-work (\$)	PCC Paving (\$)	Blt. Plant Mix (\$)	BAM (\$)	Agg. Bases & Surf. (\$)	Struct. (\$)	Drain. (\$)	Elect. (\$)	Misc. Conc. (\$)	
1794.02	KINDER MORGAN 23725 W. COUNTY FARM ROAD SHOREWOOD, IL. 60431	2015	9,950	9,950									82157750000 X
1794.02	NORTH SHORE GAS 3001 GRAND AVE., WAUKEGAN, IL 60015 (847) 263-4658	2015	703	703									82158780000 X
1794.02	PEOPLES GAS, 130 E. RANDOLPH, CHICAGO, IL. 60601 (312) 240-4715	2015	746	746									82151690000 X
1731.00	DuPage County Div. Of Trans. 421 N. County Farm Road, Wheaton, IL. 60187	2015	1,346								1,346		3204200xxxx x
1794.02	NORTH SHORE GAS 3001 GRAND AVE., WAUKEGAN, IL 60015 (847) 263-4658	2015	1,187	1,187									82157100000 x
1794.02	NORTH SHORE GAS 3001 GRAND AVE., WAUKEGAN, IL 60015 (847) 263-4658	2015	899	899									82157160000 x
1794.02	NIPSCO	2015	1211	1,211									82157870000 X
1794.02	TRANSCANADA P.O. BOX 2446 HOUSTON, TX. 77262	2015	2175	2,175									82156860000 x
	Sub-Total		18,217	16,871							1,346		
	Sub-Total (pg 6)												
	Total(s)												

Record of Past Experience

New Applications - List major projects performed by the contractor's own forces for the previous three (3) fiscal years. Including Federal, State, County, City and private work. The total dollar amounts and work category dollar amounts must be listed for each project. Do not include work performed by subcontractors.

Renewal Applications - List major projects performed by the contractor's own forces for the previous fiscal year. Including Federal, State, County, City and private work. The total dollar amounts and work category dollar amounts must be listed for each project. Do not include work performed by subcontractors.

Please see Appendix "A" of the rules for prequalification to determine the appropriate category for completed work.

Category Number	Name, Address and Phone Number of Reference	Year	Total in (1000's) (\$)	Earth-work (\$)	PCC Paving (\$)	Blt. Plant Mix (\$)	BAM (\$)	Aggr. Bases & Surf. (\$)	Struct. (\$)	Drain. (\$)	Elect. (\$)	Misc. Conc. (\$)	
1731.00	LAKE COUNTY DEPT OF TRANS. 18 N. COUNTY STREET WAUKEGAN, IL. 60085	2015	1,075								1,075		32042990000 x
1794.02	NORTH SHORE GAS 3001 GRAND AVE., WAUKEGAN, IL 60015 (847) 263-4658	2015	2,009	2,009									82154090000 x
1794.02	VECTREN 16000 ALLISONVILLE ROAD, NOBLESVILLE, IN 46060	2015	1,264	1,264									82158800000 X
1794.02	NORTH SHORE GAS 3001 GRAND AVE., WAUKEGAN, IL 60015 (847) 263-4658	2015	905	905									82155260000 x
1794.02	PEOPLES GAS ,130 E. RANDOLPH, CHICAGO, IL. 60601 (312) 240-4715	2015	822	822									82158150000 x
1794.02	WE ENERGIES 231 W. MICHIGAN STREET MILWAUKEE, WI. 53290	2015	3,618	3,618									82157510000 X
1794.02	WE ENERGIES 231 W. MICHIGAN STREET MILWAUKEE, WI. 53290	2015	2057	2,057									82157110000 x
1794.02	EXPLORER PIPELINE COMPANY 6120 S. YALE AVE., SUITE 1100 TULSA, OK. 74136	2015	24,036	24,036									82157200000 X
	Sub-Total		35,786	34,711							1,075		
	Sub-Total (pg 6)												
	Total(s)												

0

Record of Past Experience

New Applications - List major projects performed by the contractor's own forces for the previous three (3) fiscal years. Including Federal, State, County, City and private work. The total dollar amounts and work category dollar amounts must be listed for each project. Do not include work performed by subcontractors.

Renewal Applications - List major projects performed by the contractor's own forces for the previous fiscal year. Including Federal, State, County, City and private work. The total dollar amounts and work category dollar amounts must be listed for each project. Do not include work performed by subcontractors.

Please see Appendix "A" of the rules for prequalification to determine the appropriate category for completed work.

Category Number	Name, Address and Phone Number of Reference	Year	Total in (1000's) (\$)	Earth-work (\$)	PCC Paving (\$)	Bit. Plant Mix (\$)	BAM (\$)	Aggr. Bases & Surf. (\$)	Struct. (\$)	Drain. (\$)	Elect. (\$)	Misc. Conc. (\$)	
1794.02	BUCKEYE PIPELINE CO, GLP. P.O. BOX 368 EMMAUS, PA. 18049	2015	2,341	2,341									82157600000 X
1794.02	PEOPLES GAS, 130 E. RANDOLPH, CHICAGO, IL. 60601 (312) 240-4715	2015	795	795									82156030000 X
1731.00	500 JOLIET ROAD WILLOWBROOK, IL. 60521	2015	21,079								21,079		32030150000 x
1794.02	PEOPLES GAS, 130 E. RANDOLPH, CHICAGO, IL. 60601 (312) 240-4715	2015	874	874									82156420000 X
1794.02	PEOPLES GAS, 130 E. RANDOLPH, CHICAGO, IL. 60601 (312) 240-4715	2015	3,988	3,988									82156660000 X
1794.02	KINDER MORGAN 23725 W. COUNTY FARM ROAD SHOREWOOD, IL. 60431 (815)	2015	1,047	1,047									82157080000 x
1794.02	PEOPLES GAS, 130 E. RANDOLPH, CHICAGO, IL. 60601 (312) 240-4715	2015	1,642	1,642									82157120000 X
1794.02	VARIOUS OTHER UNDERGROUND CONTRACTS EACH LESS THAN \$600,000	2015	50,743	50,743									
	Sub-Total		82,509	61,430							21,079		
	Sub-Total (pg 6)												
	Total(s)												

0



Record of Past Experience

New Applications - List major projects performed by the contractor's own forces for the previous three (3) fiscal years. Including Federal, State, County, City and private work. The total dollar amounts and work category dollar amounts must be listed for each project. Do not include work performed by subcontractors.

Renewal Applications - List major projects performed by the contractor's own forces for the previous fiscal year. Including Federal, State, County, City and private work. The total dollar amounts and work category dollar amounts must be listed for each project. Do not include work performed by subcontractors.

Please see Appendix "A" of the rules for prequalification to determine the appropriate category for completed work.

Category Number	Name, Address and Phone Number of Reference	Year	Total in (1000's) (\$)	Earth-work (\$)	PCC Paving (\$)	Bit. Plant Mix (\$)	BAM (\$)	Agg., Baseses & Surf. (\$)	Struct. (\$)	Drain. (\$)	Elect. (\$)	Misc. Conc. (\$)	
1794.02	NIPSCO	2015	726	726									82158230000 X
1794.02	TRANSCANADA P.O. BOX 2446 HOUSTON, TX. 77262	2015	0	0									82156810000
1794.02	PEOPLES GAS, 130 E. RANDOLPH, CHICAGO, IL. 60601 (312) 240-4715	2015	8,650	8,650									82155510000 X
1731.00	INDIANAPOLIS POWER & LIGHT 1230 W. MORRIS STREET, INDIANAPOLIS, IN. 46221 (317)	2015	7,682								7,682		3212015XXX X
1794.02	PEOPLES GAS, 130 E. RANDOLPH, CHICAGO, IL. 60601 (312) 240-4715	2015	13,787	13,787									82157300000 X
1794.02	PEOPLES GAS, 130 E. RANDOLPH, CHICAGO, IL. 60601 (312) 240-4715	2015	2,501	2,501									82157650000 X
1794.02	PEOPLES GAS, 130 E. RANDOLPH, CHICAGO, IL. 60601 (312) 240-4715	2015	1,678	1,678									82154470000 X
	Sub-Total		35,024	27,342							7,682		
	Sub-Total (pg 6)												
	Total(s)												



**Resume**

Contractors prequalifying with the Department for the first time are required to submit a resume of technical, supervisory and key personnel who would manage a project. Provided below is a sample resume for the contractor's use. Personalized resumes are also accepted. In addition, this form may be used for the appraiser of equipment or real estate.

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Dates: \_\_\_\_\_ Current Position: \_\_\_\_\_  
Job Duties: \_\_\_\_\_

Dates: \_\_\_\_\_ Previous Position: \_\_\_\_\_  
Job Duties: \_\_\_\_\_

Dates: \_\_\_\_\_ Previous Position: \_\_\_\_\_  
Job Duties: \_\_\_\_\_

**Education**

Diploma(s)/Degree(s) Held: \_\_\_\_\_

Additional Education (include any follow-up or self-improvement courses, programs or seminars): \_\_\_\_\_

Professional Affiliations, Licenses or Registrations: \_\_\_\_\_

Other (any pertinent information that would be beneficial in considering this prequalification application): \_\_\_\_\_

References (required for equipment or real estate appraiser only): \_\_\_\_\_

### Schedule of Contractor's Equipme

(Include new, used and fully depreciated equipment)

See Appendix A of the rules for prequalification for equipment required.

No of Item	Description of Equipment List Make, Model, Year and Size or Capacity Show: Serial Numbers on Major Production Items	Purchase	Depreciation	Book Value	Appraised Value	Encumbrance
	SEE DETAIL ATTACHED					

**Affidavit of Equipment Availability**  
(Attach copy of leases)

I N/A \_\_\_\_\_,  
Name of Responsible Contractor Official Title

of \_\_\_\_\_  
Company Name

certify that the equipment indicated below is available for use by the company. I further certify that this affidavit is given for purposes of establishing the prequalification rating of the company in accordance with 44 ILL.Adm.Code 650, and the equipment availability confirmed hereby shall be maintained for the duration of the period of prequalification. The said equipment is normally stored or may be located for purposes of inspection at

\_\_\_\_\_  
Address

\_\_\_\_\_  
Contractor Official

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_

\_\_\_\_\_  
Notary Public

My Commission expires \_\_\_\_\_

(NOTARY SEAL)

\_\_\_\_\_  
Description of Equipment. List Make, Model, Year and Size or Capacity.  
Show: Serial Numbers on Major Production Items

**Certificate of Accountant**  
(For audited reports only)

I/We have audited the balance sheet of L & H COMPANY, INC.

as of DECEMBER 31, 2015

(Date)

The balance sheet is the responsibility of the contractor's management. Our responsibility is to express an opinion on these financial statements based on our audit.

I/We conducted the audit in accordance with generally accepted auditing standards. Those standards require the audit to be planned and performed to obtain reasonable assurance as to whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statement. An audit also includes assessing the accounting principles used and significant estimates made by management of the contractor, as well as evaluating the overall financial statement presentation. I/We believe that the audit provides a reasonable basis for the opinion.

In my/our opinion, the accompanying balance sheet presents fairly the financial position of L & H COMPANY, INC.

as of December 31, 2015

(Date)

and are in conformity with generally accepted accounting principles.

Also in my/our opinion, the accompanying financial schedules (pages 13 through 19) are stated fairly in all material respects when considered in conjunction with the balance sheet taken as a whole.

\_\_\_\_\_  
Certified Public Accountant(s)

By: SEE ATTACHED AUDITED FINANCIAL STATEMENTS

1901 SOUTH MEYERS ROAD

Address

OAKBROOK TERRACE, IL 60181

\_\_\_\_\_  
License Number

\_\_\_\_\_  
Expiration Date

630 282-9500

Telephone

ILLINOIS

State

\_\_\_\_\_  
Date

BKD, LLP

Type or Print Name

**Contractor's Balance Sheet**

Condition at Close of Business

December 31, 2015

**ASSETS**

**Current Assets**

Cash	12,621,303	
Notes Receivable		
Certified & Cashier's Checks & Deposit		
Accounts Receivable - - Contracts	76,307,619	
Other Accounts Receivable	3,339,078	
Stocks and Bonds		
Material in Stock	9,230,437	
Cash Surrender Value - - Life Insurance		
Prepaid Items	10,969,600	
Costs in Excess of Billings	8,818,666	
Other Current Assets	0	

**Total Current Assets**

121,286,703

**Fixed Assets**

Equipment	50,947,816	
Real Estate	1,450,850	
Leasehold Improvements	1,785,989	

**Total Fixed Assets**

54,184,655

Other Assets

**NON-QUALIFIED PLAN INVESTMENTS**

36,642,082

**OTHER**

5,370,291

**Total Assets**

217,483,731

**LIABILITIES & NET WORTH**

**Current Liabilities**

Notes Payable		
Accounts Payable - - Subcontractors		
Other Accounts Payable	22,182,489	
Miscellaneous Current Liabilities	19,402,684	
Mortgages - - Equipment (current)	4,660,500	
Billings in Excess of Costs	37,290,877	

**Total Current Liabilities**

83,536,550

**Fixed & Other Liabilities**

Mortgages - - Real Estate (long term)		
Mortgages - - Equipment (long term)	9,542,885	
Notes Payable - - Officers - Stockholders	41,238,724	

**Total Fixed & Other Liabilities**

50,781,609

**Net Worth**

Capital Stock - - Corporation	5,296,896	
Paid-in Capital		
Retained Earnings	77,868,676	
Individual or Partnership Capital		

**Total Liabilities & Net Worth**

217,483,731

**A - Cash**

Institution	Location	Type of Account	Name or Depositor	Amount		Pledged	
				Yes	No.	Yes	No.
SEE ATTACHED				12621303			X

**B - Notes Receivable**

Receivable From: Name and Address	Relationship to Company	For What	How Secured	Amount
NONE				

**C - Certified and Cashier's Checks on Deposit**

Receivable From: Name and Address	For What	Amount	Refundable		Date Recoverable
			Yes	No	
NONE					

**D - Accounts Receivable -- Contracts**

Designation of Contract and for Whom Performed	Government Contract *		Transportation Contract **		Amount Due Including Amount Retained
	Yes	No	Yes	No	
SCHEDULE ATTACHED					76307619

**E - Other Accounts Receivable** \* Government Contract - Federal, State, County, Township or Municipality.  
 \*\* Transportation Contract - Roadways, Railways, Airports or Waterways.



L & H COMPANY, INC.  
CASH BALANCES  
 December 31, 2015

SCHEDULE A.  
 PAGE 13

<u>Institution</u>	<u>Location</u>	<u>Type of Account</u>	<u>Name of Depositor</u>	<u>Amount</u>	<u>Pledged</u>
The Northern Trust	Oakbrook Terrace, Illinois	Employee Welfare	L & H Company, Inc.	\$10,787,794	No
The Northern Trust	Oakbrook Terrace, Illinois	Money Market	L & H Company, Inc.	999	No
The Northern Trust	Oakbrook Terrace, Illinois	Employee Welfare	Traffic Control Corp.	250	No
The Northern Trust	Chicago, Illinois	Basic Checking	Traffic Control Corp.	365,846	No
Wells Fargo	Afton, Minnesota	Checking	Traffic Control Corp.	617	No
The Northern Trust	Chicago, Illinois	Interim Checking	Meade Electric	(39,042)	No
Key Bank	Chicago, Illinois	Interim Checking	Meade Electric	25,000	No
Chemical Bank	South Haven, MI	Interim Checking	Meade Electric	-	No
Associated Bank	Green Bay, Wisconsin	Interim Checking	Meade Electric	9,751	No
First Midwest	Hammond, Indiana	Interim Checking	Meade Electric	1,077	No
Harris Bank	Chicago, Illinois	Interim Checking	Meade Electric	9,583	No
F&M Bank & Trust	Burlington, Iowa	Interim Checking	Meade Electric	-	No
Midland Bank	Effingham, Illinois	Interim Checking	Meade Electric	-	No
National Bank & Trust Co	Sycamore, Illinois	Interim Checking	Meade Electric	-	No
Hometown National Bank	Joliet, Illinois	Interim Checking	Meade Electric	19,970	No
St Charles Bank and Trust	St. Charles, Illinois	Interim Checking	Meade Electric	50,000	No
Wells Fargo	Afton, Minnesota	General Checking	Meade Electric	50,505	No
		Petty Cash	Meade Electric	5,564	No
The Northern Trust	Chicago, Illinois	Interim Checking	Meade, Inc.	642,041	No
The Northern Trust	Chicago, Illinois	Interim Checking	Meade Industries, Inc.	79,771	No
The Northern Trust	Oakbrook Terrace, Illinois	Checking	Lizzadro Properties, Inc.	53,007	No
The Northern Trust	Oakbrook Terrace, Illinois	Checking	Security Analysts, Inc.	539,167	No
The Northern Trust	Oakbrook Terrace, Illinois	Escrow	Security Analysts, Inc.	6,000	No
First Bank & Trust - East Texas	Tyler, Texas	Checking	SPEC Construction, Inc.	13,403	No
				<u>\$12,621,303</u>	

**L H Company, Inc.**  
**ACCOUNTS RECEIVABLE**  
**AS OF 12/31/15**

**SCHEDULE D**  
**PAGE 13**

<u>CUSTOMER NAME</u>	<u>AMOUNT</u> <u>RETAINED</u>	<u>AMOUNT DUE</u>	<u>AMOUNT DUE</u>
		<u>EXCLUDING</u> <u>AMOUNT RETAINED</u>	<u>INCLUDING</u> <u>AMOUNT RETAINED</u>
COMMONWEALTH EDISON	0	30,402,452	30,402,452
PEOPLES GAS LIGHT & COKE	3,594,200	5,006,922	8,601,122
EXPLORER PIPELINE CO.	0	4,310,186	4,310,186
ILLINOIS STATE TOLL HIGHWAY	1,183,031	1,780,467	2,963,498
WE ENERGIES INC.	0	2,790,491	2,790,491
IL DEPT. OF TRANSPORTATION	0	2,124,644	2,124,644
NIPSCO	60,092	1,481,976	1,542,068
BP AMOCO WBU	0	1,461,481	1,461,481
INDIANAPOLIS POWER & LIGHT CO.	0	1,441,402	1,441,402
POWER CONSTRUCTION CO.	720,554	364,031	1,084,585
NORTH SHORE GAS	0	1,078,833	1,078,833
PRAXAIR, INC.	58,165	880,395	938,560
WHITING TURNER @ UNILEVER	58,793	702,012	760,805
LYONDELL BASELL	0	748,419	748,419
HAYES MECHANICAL, INC.	78,779	635,715	714,494
WALSH CONSTRUCTION	117,992	536,000	653,992
AT&T	0	645,782	645,782
LASER ELECTRIC	0	524,752	524,752
F.H. PASCHEN & ASSOC. INC.	4,783	519,567	524,350
EXXON/MOBIL OIL CORPORATION	0	504,305	504,305
VECTREN ENERGY DELIVERY OF IND	0	472,719	472,719
PETRO GAS TERMINALS LLC	0	454,766	454,766
HOME TOWNE ELECTRIC, INC	0	434,310	434,310
AIRGAS MERCHANT GASES LLC	0	428,068	428,068
COOK COUNTY HIGHWAY DEPT.	0	390,542	390,542
VERIZON COMMUNICATIONS, INC	0	353,200	353,200
MIDCO ELECTRIC SUPPLY	0	342,581	342,581
POWER ONE SUPPLY INC	0	339,763	339,763
H & H ELECTRIC COMPANY	0	320,321	320,321
CHICAGO MERCANTILE EXCHANGE	0	295,778	295,778
ABBVIE	0	293,016	293,016
RAUHORN ELECTRIC INC	0	277,262	277,262
NAPERVILLE	0	269,801	269,801
TRI-TECH ELECTRIC INC	0	227,328	227,328
PEOPLES ELECTRICAL CONTR	0	215,155	215,155
DU PAGE COUNTY	0	214,239	214,239
RAILWORKS TRACK SERVICES, INC.	0	205,882	205,882
MIRGIL COOK & SON INC	0	202,790	202,790
BLACK & MCDONALD	0	201,055	201,055
ELECTRICO	0	199,065	199,065
EGAN-MCKAY ELECTRICAL CO	0	198,360	198,360

**L H Company, Inc.**  
**ACCOUNTS RECEIVABLE**  
**AS OF 12/31/15**

**SCHEDULE D**  
**PAGE 13**

ABBOTT LAB	0	195,887	195,887
VAN MACK ELECTRIC	0	188,707	188,707
TransCanada	2,617	184,857	187,474
MASTER ENTERPRISES	0	183,003	183,003
WISDOT DISTRICT 8	0	180,548	180,548
MIDWESTERN ELECTRIC COMP	0	178,124	178,124
BMW CONSTRUCTORS	3,562	173,200	176,762
INEOS STYROLUTION AMERICA LLC	0	176,294	176,294
INGERSOLL RAND	0	174,330	174,330
AGL RESOURCES	148,832	25,052	173,884
TAYLOR ELECTRIC COMPANY	0	169,557	169,557
MARK ONE ELECTRIC COMPAN	0	169,266	169,266
TUSCANY CONSTRUCTION, INC.	0	163,889	163,889
LIVE WIRE INC	0	162,975	162,975
GRANITE LEDGE ELECTRICAL	0	159,156	159,156
SUPERIOR CONSTRUCTION CO INC	0	154,275	154,275
VALENTI BUILDERS	0	152,317	152,317
MICHIANA CONTRACTING, INC	0	151,775	151,775
JOHN BURNS ELECTRIC COMP	0	145,591	145,591
ILLINOIS TOLLWAY	0	138,550	138,550
TAG - THE AMERICAN GROUP	0	135,500	135,500
AUX SABLE LIQUID PRODUCTS, INC	0	132,331	132,331
HAWK ENTERPRISES INC	0	131,205	131,205
LAKE COUNTY	21,085	107,521	128,607
PREMESIS CONTROL (ADV CAB TECH	0	128,500	128,500
MARTELL ELECTRIC LLC	0	124,854	124,854
WALSH / II NI-ONE	124,081	0	124,081
TGB	0	123,405	123,405
BODINE ELECTRIC	0	123,101	123,101
T-MOBILE	0	120,625	120,625
ANOKA COUNTY HIGHWAY DEP	0	119,213	119,213
HOOSIER CO INC	0	114,571	114,571
ELMWOOD PARK	14,821	97,154	111,975
SAFESPEED LLC	0	105,229	105,229
HENNEPIN COUNTY PUBLIC WORKS	0	104,989	104,989
THORNE ELECTRIC	0	102,353	102,353
KANSAS CITY, CITY OF	0	97,222	97,222
ILLINOIS DEPT. OF CENTRAL MGMT	0	95,563	95,563
JAMES H DREW CORPORATION	0	95,297	95,297
GE INTERNATIONAL, INC	0	95,287	95,287
ONES LANG LASALLE	0	91,967	91,967
SHELL OIL PRODUCTS	0	84,478	84,478
MOORHEAD ELECTRIC	0	84,406	84,406
RAPID CITY, CITY OF	0	83,210	83,210

**L H Company, Inc.**  
**ACCOUNTS RECEIVABLE**  
**AS OF 12/31/15**

**SCHEDULE D**  
**PAGE 13**

CENTREX ELECTRICAL SUPPLY	0	81,450	81,450
EPCO	0	79,674	79,674
LIGHTING SOLUTIONS OF IL	0	75,214	75,214
SUBTOTAL	6,191,386	70,237,502	76,428,888
BALANCES UNDER 75,000 EACH	149,171	(270,440)	(121,269)
Company Total	\$ 6,340,557	\$ 69,967,062	\$ 76,307,619





**L - Other Current or Fixed Assets**

Description	Current or Fixed	Amount
DEPOSITS AND EMPLOYEE ADVANCES		365319
PARTNERSHIP INTERESTS		773172
INVESTMENTS - LAND & OTHER		1294329
DEFERRED INCOME TAXES		2935840
OTHER		1631

**M - Notes Payable**

Payable To: Name	How Secured	Current Amount	Total Amount	Date Due
LINE OF CREDIT	ASSETS		0	9/1/2017

**N - Accounts Payable - - Subcontractors**

Payable To: Name	Contract Price	Amount Retained	Amount	Date Due
INCLUDED IN ACCOUNTS PAYABLE				

**O - Other Accounts Payable**

Payable To: Name	Type of Account	Amount	Date Due
SCHEDULE ATTACHED		22182489	12/31/2016

**L H COMPANY, INC.**  
**ACCOUNTS PAYABLE**  
**AS OF 12/31/15**

**SCHEDULE O**  
**PAGE 16**

<b>VENDOR NAME</b>	<b>PAYABLE</b>
ROBERT B. MCMANUS, INC.	1,539,059.00
LOCAL NO.9 IBEW & OUTSIDE	1,313,471.73
LOCAL 697 ADMIN. FUND	970,949.51
SANCHEZ CONSTRUCTION SERVICES	793,335.72
NECA-IBEW LC 176 DISTRIBUTION	647,909.83
TOPPERT JETTING SERVICES	644,417.50
M&J ASPHALT PAVING COMPANY	459,385.14
JPMORGAN CHASE BANK NA	443,062.86
BIGANE PAVING CO.	429,500.00
US BANK VOYAGER FLEET SYSTEMS	421,113.40
GRAYBAR ELECTRIC CO. INC.	394,592.28
ELECTRICAL INS. TRUSTEES	345,348.62
BADGER DAYLIGHTING CORP	310,170.00
TRI-ANGLE FABRICATION & BODY	296,468.37
TRAFFIC CONTROL CORP	292,450.00
LOCAL 701 TRUSTEES	251,912.05
STEINER ELECTRIC CO.	250,949.68
CCMSI	249,336.15
I.B.E.W. LOCAL 150	241,622.91
H.J. MOHR & SONS CO.	231,351.51
L & H COMPANY, INC.	209,658.70
TAYLOR ELECTRIC COMPANY	206,996.54
L.J. KEEFE CO.	205,670.95
LOCAL 531 ADMIN. FUND	200,997.48
HOUSTON WIRE & CABLE COMPANY	187,889.09
SUNRISE ELECTRIC SUPPLY, INC.	187,440.66
ALB RECEIVING FUND	186,581.09
VERMEER-ILLINOIS, INC.	183,469.22
IMAGE SENSING SYSTEM, INC	179,274
PETROMEX, INC.	174,728.63
UTILITY PIPE SUPPLY INC	173,926.54
MOXA AMERICA, INC	158,676
SONOMA UNDERGROUND SERVICES I	155,294.50
INDIANA W/H TAX PAYMENTS	132,793.76
PULLARA, INC.	129,699.22
HBK ENGINEERING INC	127,573.50
NECA-IBEW PENSION TRUST FUND	106,107.06
GE LIGHTING SYSTEMS	96,095
GRAINGER INC.	93,934.41
MIDCO ELECTRIC SUPPLY	90,447.64
PIPE FITTERS' LOCAL #597	88,724.45
RAUSCH CONSTRUCTION CO., INC.	86,858.79



**L H COMPANY, INC.**  
**ACCOUNTS PAYABLE**  
**AS OF 12/31/15**

**SCHEDULE O**  
**PAGE 16**

CRESCENT ELECTRIC SUPPLY CO.	84,674.67
ROADSAFE TRAFFIC SYSTEMS, INC	83,890.00
LITGEN CONCRETE CUTTING & COR	83,293.00
SOUTHLAKE ELECTRIC SUPPLY, IN	82,467.54
ADI	82,124.41
LEOTEK ELECTRONICS USA	77,689
GLOBAL RENTAL CO., INC.	77,520.00
BRAND ENERGY SERVICES, LLC	77,000.00
AT&T DATACOMM	75,625.50
CAMPELL COMPANY	73,451
WORK ZONE SAFETY, INC.	72,885.88
CHICAGO & COOK COUNTY EBB #16	71,797.56
STATE GRP INDUSTRIAL (USA) LT	67,270.63
HAYES MECHANICAL, INC.	67,115.00
GEXPRO	66,449.38
CARDI ASPHALT PAVING CO	62,482.70
SUNBELT RENTALS, INC.	61,555.23
THERMO BOND BUILDINGS, LLC	57,960.00
FREY MANUFACTURING CORPORATION	55,151
O'LEARYS CONTRACTORS EQUIPMEN	53,272.77
GPS INSIGHT, LLC	50,268.20
ANIXTER INC.	47,898.88
SAFWAY SERVICES LLC	47,681.79
PATTEN INDUSTRIES, INC.	46,495.30
NTI FIBER OPTICS	44,562.50
NORTHERN IL STEEL SUPPLY CO.	42,879.37
FINANCIAL SECRETARY	41,882.11
HI-LINE UTILITY SUPPLY CO.	41,630.88
PELCO PRODUCTS	41,582
RAIN FOR RENT	41,146.01
XTREME POWERLINE CONSTR., INC	40,000.00
WEST SIDE EXCHANGE	38,457.60
UTILITY CONCRETE PRODUCTS, LL	38,139.64
RAM CONSTRUCTION	37,955.61
OZINGA READY MIX CONCRETE, IN	35,497.93
EMERGENT SAFETY	34,700.34
DITCH WITCH MIDWEST	34,519.89
LEDKO AMERICA L.L.C.	32,945.36
WISCONSIN DEPT OF REVENUE	32,880.24
ELECTRIC COMPANY	32,565.35
HEARTLAND RECYCLING AURORA LL	31,741.65
LIZZADRO, FRANK J.	31,641.69
LAGRANGE CRANE SERVICE, INC.	30,197.50

**L H COMPANY, INC.**  
**ACCOUNTS PAYABLE**  
**AS OF 12/31/15**

**SCHEDULE O**  
**PAGE 16**

SUBTOTAL	16,220,188
BALANCES UNDER \$30,000 EACH	5,962,301
	22,182,489

**P - Miscellaneous Current Liabilities**

Payable To: Name	Item	Amount	Date Due
PAYROLL ACCRUALS		371443	12/31/16
NON QUALIFIED PLAN		3480161	12/31/16
PROFIT SHARING PLAN		2047536	12/31/16
SALARIES		7628367	12/31/16
INTEREST		28524	12/31/16
INSURANCE		5505304	12/31/16
REAL ESTATE AND OTHER TAXES		341349	12/31/16

**Q - Mortgages - - Equipment**

Payable To: Name	How Secured	Current Amount	Total Amount	Date Due
NORTHERN TRUST COMPANY	EQUIPMENT	2000004	8833331	4/1/2020
VARIOUS	EQUIPMENT	2660496	5370054	

**R - Notes Payable: Officers - Stockholders - Directors - Partners - Members - Managers**

Payable To: Name	Current Amount	Total Amount	Date Due
NON-QUALIFIED PLAN LIABILITY		40953643	
DEFERRED REVENUE		285081	

**S - Capital Stock:**

Complete the following schedule:

Preferred Stock: Class and Par Value	Authorized		Treasury Stock		Outstanding	
	Shares	Amount	Shares	Cost	Shares	Amount
Common Stock: Class and Par Value						
SEE ATTACHED SCHEDULE						

L & H COMPANY, INC.  
CAPITAL STOCK  
 December 31, 2015

SCHEDULE S.  
 PAGE 17

Description	Par Value	Authorized		Treasury		Outstanding	
		Shares	Amount	Shares	Amount	Shares	Amount
Class A Stock	-	450,000	-	27,564	4,139,649	125,459	2,975,312
Class B Stock	-	400,000	-	-	-	40,937	2,321,584
						Less: Unearned ESOP Shares	-
							<u>5,296,896</u>



L & H COMPANY, INC.  
PARTNERSHIP INTEREST  
 December 31, 2015

SCHEDULE U.  
 PAGE 18

<u>Partner Name and Address</u>	<u>Type General / Limited</u>	<u>Percent Ownership</u>	<u>Profit / Loss Allocation Percentage</u>
2250 LLC 2215 York Road, Suite 304 Oak Brook, IL 60523	Limited	30%	30%
6057 Churchman LLC 2215 York Road, Suite 304 Oak Brook, IL 60523	Limited	19%	19%
Lizzadro Real Estate LLC 2215 York Road, Suite 304 Oak Brook, IL 60523	Limited	75%	75%
3170 MacArthur, LLC 2215 York Road, Suite 304 Oak Brook, IL 60523	Limited	51%	51%
1997 Ohio Investments, LLC 2215 York Road, Suite 304 Oak Brook, IL 60523	Limited	29%	29%
Argonne Woods 10435 Argonne Woods Drive Woodridge, IL 60517	Limited	15%	15%
1441 Branding, LLC 2215 York Road - Suite 304 Oak Brook, IL 60523	General	19%	19%
2200 Ogden, LLC 2215 York Road - Suite 304 Oak Brook, IL 60523	General	17%	17%



To:  
Engineer of Construction  
Illinois Department of Transportation  
2300 South Dirksen Parkway  
Springfield, Illinois 62764

To improve the financial prequalification rating of \_\_\_\_\_  
\_\_\_\_\_, I agree that I will not request or withdraw the money due  
me as shown on the \_\_\_\_\_, \_\_\_\_\_, Contractor's Statement of Experience and Financial  
Condition, amounting to \$ \_\_\_\_\_, during the life of this prequalification rating.

Very truly yours,



**AFFIDAVIT FOR INDIVIDUAL**

STATE OF \_\_\_\_\_

County of \_\_\_\_\_

ss.

\_\_\_\_\_ being duly sworn, deposes and says:

That the foregoing statement of experience and all statements therein contained are true and correct and that the foregoing financial statement, taken from his/her books, is a true and accurate statement of his/her financial condition as of the date thereof and that the answer to the foregoing interrogatories are true; that this statement is for the express purpose of inducing the party to whom it is submitted to award the submitter a contract; and that any depository, vendor or other agency herein named is hereby authorized to supply such party with any information necessary to verify this statement. The signatory further agrees to abide by the rules and regulations of the Illinois Department of Transportation relative to the submission of bids and execution of contracts.

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_

\_\_\_\_\_  
Applicant must sign here

\_\_\_\_\_  
Notary Public

My Commission expires \_\_\_\_\_

(NOTARY SEAL)

**AFFIDAVIT FOR PARTNERSHIP**

STATE OF \_\_\_\_\_

County of \_\_\_\_\_

ss.

\_\_\_\_\_ being duly sworn, deposes and says:

That they are members of the firm of \_\_\_\_\_ that the foregoing statement of experience and all statements therein contained are true and correct and that they are familiar with the books of the said firm showing its financial conditions, that the foregoing financial statement, taken from the books of the said firm, is a true and accurate statement of the financial condition of the said firm as of the date thereof and that the answers to the foregoing interrogatories are true; that this statement is for the express purpose of inducing the party to whom it is submitted to award the submitter a contract; and that any depository, vendor or other agency herein named is hereby authorized to supply such party with any information necessary to verify this statement. These signatories further agree to abide by the rules and regulations of the Illinois Department of Transportation relative to the submission of bids and execution of contracts.

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_

\_\_\_\_\_  
All partners must sign

\_\_\_\_\_  
Notary Public

My Commission expires \_\_\_\_\_

(NOTARY SEAL)

AFFIDAVIT FOR LIMITED LIABILITY COMPANY (L)

STATE OF \_\_\_\_\_  
County of \_\_\_\_\_ ss.

The undersigned being duly sworn, depose and state:

That they are members/managers (select one) of the firm of \_\_\_\_\_ that the foregoing statement of experience and all statements therein contained are true and correct and that they are familiar with the books of the said firm showing its financial conditions, that the foregoing financial statement, taken from the books of said firm, is a true and accurate statement of the financial condition of the said firm as of the date thereof and that the answers to the foregoing interrogatories are true; that this statement is for the express purpose of inducing the party to whom it is submitted to award the submitter a contract; and that any depository, vendor or other agency herein named is hereby authorized to supply such party with any information necessary to verify this statement. These signatories further agree to abide by the rules and regulations of the Illinois Department of Transportation relative to submission of bids and execution of contracts.

That the following persons are authorized to execute contracts binding to the company.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_

\_\_\_\_\_  
All members/managers must sign

\_\_\_\_\_  
Notary Public

My commission expires \_\_\_\_\_

(NOTARY SEAL)

A certified copy of the action of the members authorizing such managers to execute this affidavit on behalf of the company may be required.



**Financial Information Release  
(Unaudited Statement Only)**

**Instructions:** Submit this form directly to your bank. The verification of an account must be as of the date of the balance sheet.

\_\_\_\_\_ Date

**To The** \_\_\_\_\_  
 Name of Bank

\_\_\_\_\_ Address  
 \_\_\_\_\_

Please give the Illinois Department of Transportation the following information in connection with my or our account as of

\_\_\_\_\_ Balance Sheet Date

\_\_\_\_\_ Type or Print Name of Company

**By** \_\_\_\_\_  
 Type or Print Name of Individual Title

\_\_\_\_\_ Signature

**Information below to be furnished by the above bank.**

Our records show the following information in connection with the account of the above named depositor as of \_\_\_\_\_ . (Must correspond with second date shown above.)

\_\_\_\_\_ Balance Sheet Date

Commercial Account	\$	_____
Savings Account	\$	_____
Indebtedness to Bank	\$	_____
Secured? _____	How?	_____
Certificate of Deposit	\$	_____
Pledged? _____	Detail	_____

\_\_\_\_\_ Type or Print Name of Bank

**By** \_\_\_\_\_  
 Type or Print Name of Individual Title

\_\_\_\_\_ Signature

( ) \_\_\_\_\_  
 Telephone Number

\_\_\_\_\_ Date

Prompt return of this form to the Illinois Department of Transportation, Bureau of Construction, 2300 South Dirksen Parkway, Springfield, Illinois 62764 expedites a service to a client.

**Checklist for Contractor's Statement of Experience and Financial Condition**

- Have all questions been answered completely?

**For Audited Statements:**

- Opinion Letter with accountant license information or Certificate of Accountant  
 Income Statement  
 Notes to the Financial Statement

**For Unaudited Statements:**

- Page 25, Financial Information Release, signed and with the same date as the balance sheet

**For Corporations:**

- Page 22, Affidavit for Corporation

**For General Partnerships:**

- Partnership Agreement  
 Page 21, Affidavit for Partnership  
 Financial Statements / Income Tax Forms for General Partners

**For Individuals**

- Page 21, Affidavit for Individuals

**For LLC**

- Page 23, Affidavit for Limited Liability Company

**For Statements with Appraisals:**

- Letter requesting appraisals be used in ratings determination  
 Copy of Appraisal which is less than 24 months old  
 Resume of Appraiser  
 Certificate of Appraiser

# **L & H Company, Inc. and Subsidiaries**

**Independent Auditor's Report and Consolidated  
Financial Statements**

**December 31, 2015 and 2014**

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**BKD**<sub>LLP</sub>  
**CPAs & Advisors**

**L & H Company, Inc. and Subsidiaries**  
**December 31, 2015 and 2014**

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## Independent Auditor's Report

Illinois Department of Transportation  
Bureau of Construction  
Springfield, Illinois

Board of Directors  
L & H Company, Inc.  
Oak Brook, Illinois

We have audited the accompanying consolidated financial statements of L & H Company, Inc. and Subsidiaries, which comprise the consolidated balance sheets as of December 31, 2015 and 2014, and the related consolidated statements of equity, income and cash flows for the years then ended, and the related notes to the financial statements.

### Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of the consolidated financial statements that are free from material misstatement, whether due to fraud or error.

### Auditor's Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit includes performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting principles used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

Illinois Department of Transportation  
Bureau of Construction

Board of Directors  
L & H Company, Inc.  
Page 2

We believe the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

**Opinion**

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of L & H Company, Inc. and Subsidiaries as of December 31, 2015 and 2014, and the results of their operations and their cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

**Restrictions on Use of Report**

This report is intended solely for the information and use of the Illinois Department of Transportation Bureau of Construction and the Board of Directors of L & H Company, Inc. and is not intended to be and should not be used by anyone other than these specified parties.

**BKD, LLP**

Oakbrook Terrace, Illinois  
April 14, 2016



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David M. Kot  
Certified Public Accountant  
Conducting Examination

Holder of Illinois  
License No. 065.038751  
Expiration Date September 30, 2018



**L & H Company, Inc. and Subsidiaries**  
**Consolidated Balance Sheets**  
**December 31, 2015 and 2014**

**Assets**

	<u>2015</u>	<u>2014</u>
<b>Current Assets</b>		
Cash and cash equivalents	\$ 12,621,303	\$ 10,350,070
Accounts receivable	76,307,619	78,362,633
Costs and estimated earnings in excess of billings on uncompleted contracts	8,818,666	5,957,871
Other receivables	3,339,078	1,107,332
Inventory	9,230,437	8,331,463
Prepaid contract costs	2,202,268	2,739,190
Unexpired insurance	2,666,611	3,115,751
Refundable income taxes	4,162,619	1,324,060
Deferred income taxes	1,938,102	2,107,520
	<u>121,286,703</u>	<u>113,395,890</u>
<b>Property and Equipment, at Cost</b>		
Land	1,422,751	1,422,751
Land improvements	119,111	119,111
Buildings and improvements	8,224,415	5,116,375
Vehicles	98,563,772	88,559,870
Construction equipment	84,422,634	77,779,394
Furnishings and office equipment	5,088,747	4,942,562
Leasehold improvements	4,822,439	4,825,503
Rental equipment	18,711	18,711
	<u>202,682,580</u>	<u>182,784,277</u>
Less accumulated depreciation and amortization	<u>148,497,925</u>	<u>134,984,811</u>
Net property and equipment	<u>54,184,655</u>	<u>47,799,466</u>
<b>Other Assets</b>		
Investments - land	1,294,329	1,268,112
Employee advances	2,000	3,000
Partnership interest	773,172	812,116
Deposits and other	363,319	346,278
Deferred income taxes	2,935,840	3,304,061
Non-qualified plan investments	36,642,082	35,617,591
Goodwill, net	-	432,900
Other	1,631	64,951
	<u>42,012,373</u>	<u>41,849,009</u>
	<u>\$ 217,483,731</u>	<u>\$ 203,044,365</u>

See Notes to Consolidated Financial Statements

## Liabilities and Equity

	<u>2015</u>	<u>2014</u>
<b>Current Liabilities</b>		
Current portion of long-term debt	\$ 4,660,500	\$ 4,671,344
Accounts payable	22,182,489	24,171,743
Billings in excess of costs and estimated earnings on uncompleted contracts	37,290,877	31,127,824
Payroll accruals	371,443	303,784
Dividends payable	-	1,507,503
Accruals		
Non-qualified plan	3,480,162	3,113,958
Profit sharing plan	2,047,537	2,145,452
Salaries	7,628,365	6,946,102
Interest	28,524	23,037
Insurance	5,505,304	5,480,846
Real estate and other taxes	341,349	605,494
	<u>83,536,550</u>	<u>80,097,087</u>
	285,081	283,432
<b>Deferred Income</b>		
<b>Notes Payable</b>	9,542,885	4,690,150
<b>Non-qualified Plan Liability</b>	<u>40,953,643</u>	<u>40,304,581</u>
	<u>134,318,159</u>	<u>125,375,250</u>
<b>Equity</b>		
L & H Company, Inc. stockholders' equity		
Capital stock - Class A - 450,000 shares authorized, 125,459 and 131,935 shares issued and outstanding in 2015 and 2014, respectively	7,114,961	7,482,215
Capital stock - Class B - 400,000 shares authorized; 40,937 and 46,185 shares issued and outstanding in 2015 and 2014, respectively	2,321,584	2,619,213
Retained earnings	78,214,679	72,074,409
Treasury stock - 17,632 shares in 2015 and 21,088 shares in 2014 owned by non-qualified plan	<u>(4,139,649)</u>	<u>(4,484,545)</u>
	83,511,575	77,691,292
Total L & H Company, Inc. stockholders' equity		
Noncontrolling interest	<u>(346,003)</u>	<u>(22,177)</u>
	<u>83,165,572</u>	<u>77,669,115</u>
Total equity		
	<u>\$ 217,483,731</u>	<u>\$ 203,044,365</u>

**L & H Company, Inc. and Subsidiaries**  
**Consolidated Statements of Equity**  
**Years Ended December 31, 2015 and 2014**

	Common Stock				Retained Earnings	Treasury Stock	Noncontrolling Interest	Total Equity
	Class A Shares		Class B Shares					
	Shares	Amount	Shares	Amount				
<b>Balance, December 31, 2013</b>	133,677	\$ 7,581,004	50,470	\$ 2,862,225	\$ 67,025,348	\$ (4,108,341)	\$ 73,360,236	\$ 73,361,858
Net income (loss)	-	-	-	-	9,061,754	-	9,061,754	9,037,955
Class A shares retired	(1,742)	(98,789)	-	-	(356,992)	-	(455,781)	(455,781)
Class B shares purchased and retired	-	-	(4,285)	(243,012)	(2,148,198)	-	(2,391,210)	(2,391,210)
Purchase of L & H Company, Inc. Class A shares	-	-	-	-	-	(376,204)	(376,204)	(376,204)
Less dividends declared	-	-	-	-	(1,507,503)	-	(1,507,503)	(1,507,503)
<b>Balance, December 31, 2014</b>	131,935	7,482,215	46,185	2,619,213	72,074,409	(4,484,545)	77,691,292	77,669,115
Net income (loss)	-	-	-	-	12,562,431	-	12,562,431	12,238,605
Class A shares retired	(6,476)	(367,254)	-	-	(2,392,674)	-	(2,759,928)	(2,759,928)
Class B shares purchased and retired	-	-	(5,248)	(297,629)	(2,579,045)	-	(2,876,674)	(2,876,674)
Purchase of L & H Company, Inc. Class A shares	-	-	-	-	-	(637,520)	(637,520)	(637,520)
Sale of L & H Company, Inc. Class A shares	-	-	-	-	-	982,416	982,416	982,416
Less dividends declared	-	-	-	-	(1,450,442)	-	(1,450,442)	(1,450,442)
<b>Balance, December 31, 2015</b>	125,459	\$ 7,114,961	40,937	\$ 2,321,584	\$ 78,214,679	\$ (4,139,649)	\$ 83,511,575	\$ 83,165,572

**L & H Company, Inc. and Subsidiaries**  
**Consolidated Statements of Income**  
**Years Ended December 31, 2015 and 2014**

	2015	2014	Increase (Decrease)
<b>Revenues</b>	\$ 543,699,729	\$ 527,507,440	\$ 16,192,289
<b>Cost of Revenues</b>			
Material	77,594,213	82,479,290	(4,885,077)
Labor	163,225,194	154,277,269	8,947,925
Subcontracts	37,438,844	34,961,614	2,477,230
Freight	652,572	630,896	21,676
Fringe benefits	117,518,751	110,769,672	6,749,079
Other direct charges	39,166,167	48,289,158	(9,122,991)
Total cost of revenues	435,595,741	431,407,899	4,187,842
<b>Gross Profit</b>	108,103,988	96,099,541	12,004,447
<b>Operating Expenses</b>	79,838,558	75,017,259	4,821,299
<b>Operating Income</b>	28,265,430	21,082,282	7,183,148
<b>Other Income</b>			
Non-qualified plan income	972,372	4,628,938	(3,656,566)
Interest income	108,737	129,961	(21,224)
Rental income	153,354	95,137	58,217
Sundry	4,040	328,484	(324,444)
Total other income	1,211,271	5,182,520	(3,971,249)
<b>Other Expenses</b>			
Donations	307,773	97,860	209,913
Goodwill impairment loss	432,900	-	432,900
Profit sharing plan expense	2,047,537	2,145,452	(97,915)
Non-qualified plan contribution	3,480,162	3,661,115	(180,953)
Non-qualified plan expense	1,190,955	4,943,368	(3,752,413)
Interest expense	346,503	259,294	87,209
Oil and gas expense	2,470	7,299	(4,829)
401(k) match	379,406	378,734	672
Total other expenses	8,187,706	11,493,122	(3,305,416)
<b>Income before Taxes</b>	21,288,995	14,771,680	6,517,315
<b>Provision for Income Taxes</b>	9,050,390	5,733,725	3,316,665
<b>Net Income</b>	12,238,605	9,037,955	3,200,650
<b>Net Loss Attributable to Noncontrolling Interest</b>	323,826	23,799	300,027
<b>Net Income Attributable to L &amp; H Company, Inc.</b>	\$ 12,562,431	\$ 9,061,754	\$ 3,500,677

See Notes to Consolidated Financial Statements

**L & H Company, Inc. and Subsidiaries**  
**Consolidated Statements of Cash Flows**  
**Years Ended December 31, 2015 and 2014**

	2015	2014
<b>Operating Activities</b>		
Net income	\$ 12,238,605	\$ 9,037,955
Items not requiring (providing) cash		
Depreciation and amortization	22,840,018	20,309,638
Goodwill impairment loss	432,900	-
Gain on sale of property and equipment	(1,154,508)	(421,960)
Deferred income taxes	537,639	(1,694,573)
(Increase) decrease in assets		
Accounts receivable	2,055,014	(19,656,028)
Costs and estimated earnings in excess of billings on uncompleted contracts	(2,860,795)	(975,340)
Other receivables	(2,231,746)	(251,453)
Inventory	(898,974)	294,368
Prepaid contract costs	536,922	(86,474)
Unexpired insurance	449,140	(1,273,219)
Employee advances	1,000	500
Deposits and other	(17,041)	82,882
Refundable income taxes	(2,838,559)	(1,215,439)
Other assets	63,320	(64,052)
Increase (decrease) in liabilities		
Accounts payable	(1,989,254)	3,003,339
Income taxes payable	-	(437,590)
Billings in excess of costs and estimated earnings on uncompleted contracts	6,163,053	8,284,444
Payroll accruals	67,659	(746,652)
Profit sharing and non-qualified plans' accruals	268,289	2,128,430
Accrued salaries	682,263	(2,288,843)
Accrued interest	5,487	(6,344)
Accrued insurance	24,458	987,611
Accrued real estate and other taxes	(264,145)	48,197
Deferred income	1,649	(16,934)
Non-qualified plan	(30,533)	9,006
	34,081,861	15,051,469
Net cash provided by operating activities		

**L & H Company, Inc. and Subsidiaries**  
**Consolidated Statements of Cash Flows**  
**Years Ended December 31, 2015 and 2014**

	<b>2015</b>	<b>2014</b>
<b>Investing Activities</b>		
Proceeds from sale of investments - land	\$ -	\$ 740,000
Increase in investments - land	(26,217)	(77,013)
Partnership interest, net	38,944	68,816
Proceeds from sale of property and equipment	2,397,968	872,201
Purchase of property and equipment	(20,468,667)	(17,725,029)
	(18,057,972)	(16,121,025)
Net cash used in investing activities		
<b>Financing Activities</b>		
Dividends paid	(2,957,945)	(1,089,859)
Borrowings on line of credit	25,600,000	-
Repayments on line of credit	(25,600,000)	-
Net payments on long-term debt	(5,158,109)	(8,665,147)
Stock repurchased from ESOP - Class B	(2,876,674)	(2,391,210)
Stock repurchase - Class A	(2,759,928)	(455,781)
	(13,752,656)	(12,601,997)
Net cash used in financing activities		
<b>Net Increase (Decrease) in Cash and Cash Equivalents</b>	2,271,233	(13,671,553)
<b>Cash and Cash Equivalents, Beginning of Year</b>	10,350,070	24,021,623
<b>Cash and Cash Equivalents, End of Year</b>	\$ 12,621,303	\$ 10,350,070
<b>Supplemental Cash Flows Information</b>		
Interest paid	\$ 341,016	\$ 265,638
Income taxes paid	\$ 17,144,833	\$ 9,066,960
Purchase of property and equipment financed by notes payable	\$ 10,000,000	\$ 6,372,283
Dividends payable	\$ -	\$ 1,507,503
Treasury stock purchase for non-qualified plan	\$ 637,520	\$ 376,204

**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

**Note 1: Nature of Operations and Summary of Significant Accounting Policies**

The consolidated financial statements include the accounts of L & H Company, Inc., the Parent Company and its six wholly owned subsidiaries, Meade Electric Company, Inc.; Meade Industries, Inc.; Meade, Inc.; Traffic Control Corporation; Lizzadro Properties, Inc. and Security Analysts, Inc. and its majority owned subsidiary, SPEC Construction, Inc. (collectively, the Company).

Significant intercompany items have been eliminated in consolidation. L & H Company, Inc. provides professional services to its subsidiaries. Meade Electric Company, Inc. is an electrical contractor engaged in maintenance as well as mechanical, highway lighting, traffic signal and pipeline installation. Meade Industries, Inc. is an electrical contractor engaged in commercial, industrial and institutional construction. Meade, Inc. is an electrical contractor engaged in municipal construction and maintenance as well as mechanical, highway lighting, traffic signal and pipeline installation. Traffic Control Corporation is a reseller of traffic control signals and related control equipment. Lizzadro Properties, Inc. is a property management corporation. Securities Analysts, Inc. is a professional services company. SPEC Construction, Inc., which ceased operations in 2015, was a contractor engaged in railroad crossing construction.

***Cash Equivalents***

For the purposes of cash flows, the Company considers interest-bearing deposits with a maturity of three months or less at the date of purchase to be cash equivalents.

***Revenue and Cost Recognition***

Revenues from construction contracts are recognized on the percentage-of-completion method. The percentage of completion is determined by taking into account the cost, estimated gross profit, engineer's estimated percentage-of-completion and revenue to date of contracts not yet completed.

The amount of revenue recognized at the statement date is the estimated revenue on the contract multiplied by the engineer's estimated percentage of completion for the contract. The engineer's estimated percentage-of-completion takes into account the cost expended in relation to the anticipated final total cost as well as other factors specific to the individual contract. In all circumstances, the revenue recognized is not related to the progress billings to customers.

Contract cost includes all direct labor and benefits, materials, subcontract costs and allocations of indirect construction cost. General and administrative costs are charged to expenses as incurred.

If long-term contracts extend over one or more years, revisions in estimates of total cost and gross profit during the course of the work are reflected in the current accounting period.

At the time a loss on a contract becomes known, the entire amount of the estimated ultimate loss is recognized in the financial statements.

Uncompleted contracts includes jobs in process and contracts which are substantially complete with unresolved contingency items. Contracts are considered complete when all contingency items are resolved. Costs and estimated earnings in excess of billings on uncompleted contracts

**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

(underbillings) are classified as current assets. Billings in excess of costs and estimated earnings on uncompleted contracts (overbillings) are classified as current liabilities.

Assets and liabilities related to long-term contracts are included in current assets and current liabilities in the accompanying consolidated balance sheets as they will be liquidated in the normal course of the contract completion, although this may require more than one year.

***Non-qualified Plan Investments***

The investments are held in the non-qualified deferred compensation plan. Changes in fair value of these investments increase or decrease the non-qualified plan liability as participants are entitled to investment earnings or losses in accordance with the plan provisions.

***Inventory***

Inventory is stated at the lower of cost or market on a first-in, first-out basis. Inventory includes traffic control equipment available for sale by Traffic Control Corporation and parts to be used on construction jobs by Meade, Inc.

***Property and Equipment***

Depreciation and amortization of property and equipment has been provided principally on the straight-line and declining balance methods over the estimated useful lives of the assets or, for leasehold improvements, the lease term if shorter. Methods vary based on the nature of the asset and its expected productive life.

Expenses for maintenance, repairs and minor replacements are charged to operations, and expenses for major replacements and betterments are added to the property and equipment accounts. The cost and accumulated depreciation and amortization of property and equipment retired or sold are eliminated from the accounts at the time of retirement or sale and the resulting gain or loss is recorded in income.

***Use of Estimates***

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts and disclosures. Accordingly, actual results could differ from those estimates.

***Concentration of Credit Risk***

The Company maintains cash in demand deposit and money market accounts with federally insured banks. At December 31, 2015, the balances of these accounts in excess of federally insured limits was approximately \$18,930,000.



**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

***Impairment of Long-lived Assets***

The Company evaluates the recoverability of the carrying value of long-lived assets whenever events or circumstances indicate the carrying amount may not be recoverable. If a long-lived asset is tested for recoverability and the undiscounted estimated future cash flows expected to result from the use and eventual disposition of the asset is less than the carrying amount of the asset, the asset cost is adjusted for fair value and an impairment loss is recognized as the amount by which the carrying amount of a long-lived asset exceeds its fair value.

No asset impairment was recognized during the years ended December 31, 2015 and 2014.

***Fair Market Value of Financial Instruments***

The carrying amounts of financial instruments including cash, cash equivalents, receivables, accounts payable, accrued expenses and short-term borrowings approximate fair value due to the short-term maturity of these instruments. The carrying amount of long-term debt approximates fair value because the interest rates fluctuate with market interest rates.

***Noncontrolling Interest***

The noncontrolling interest represents the portion of equity ownership in SPEC Construction, Inc. which is not attributable to L&H Company, Inc.

***Advertising***

The Company expenses advertising costs as they are incurred. Advertising expense for the years ended December 31, 2015 and 2014, was \$14,278 and \$25,094, respectively.

***Goodwill***

The Company accounts for goodwill using the accounting alternative provided in Accounting Standards Update 2014-02, *Intangibles – Goodwill and Other (Topic 350): Accounting for Goodwill*. Under this alternative, goodwill is amortized on a straight-line basis over 10 years. The Company evaluates the recoverability of the carrying value of goodwill at the reporting unit level whenever events or circumstances indicate the carrying amount may not be recoverable.

In testing goodwill for impairment, the Company has the option first to perform a qualitative assessment to determine whether it is more likely than not that the goodwill is impaired or the entity can bypass the qualitative assessment and proceed directly to the quantitative test by comparing the carrying amount, including goodwill, of the reporting unit with its fair value. The goodwill impairment loss, if any, is measured as the amount by which the carrying amount of a reporting unit, including goodwill, exceeds its fair value. Subsequent increases in goodwill value are not recognized in the financial statements. See Note 14.

**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

**Note 2: Costs and Estimated Earnings on Uncompleted Contracts**

Components of costs and estimated earnings on uncompleted contracts are summarized below as of December 31, 2015 and 2014:

	<u>2015</u>	<u>2014</u>
Costs incurred on uncompleted contracts	\$ 2,027,397,882	\$ 1,879,433,734
Estimated earnings	<u>519,497,016</u>	<u>327,513,957</u>
	2,546,894,898	2,206,947,691
Less billings to date	<u>(2,575,367,109)</u>	<u>(2,232,117,644)</u>
	<u>\$ (28,472,211)</u>	<u>\$ (25,169,953)</u>

Included in the accompanying balance sheets under the following captions as of December 31, 2015 and 2014:

	<u>2015</u>	<u>2014</u>
Costs and estimated earnings in excess of billings on uncompleted contracts	\$ 8,818,666	\$ 5,957,871
Billings in excess of costs and estimated earnings on uncompleted contracts	<u>(37,290,877)</u>	<u>(31,127,824)</u>
	<u>\$ (28,472,211)</u>	<u>\$ (25,169,953)</u>

The asset, "costs and estimated earnings in excess of billings on uncompleted contracts," represents revenues recognized in excess of amounts billed. The liability, "billings in excess of costs and estimated earnings on uncompleted contracts," represents billings in excess of revenues recognized.

**Note 3: Fair Value Measurements**

Generally accepted accounting principles provide a uniform framework for the definition, measurement and disclosure of fair value measurements. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Such accounting guidance also establishes a fair value hierarchy which requires an entity to maximize the use of observable inputs and minimize the use

**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

of unobservable inputs when measuring fair value. The standard describes three levels of inputs that may be used to measure fair value:

- Level 1** Quoted prices (unadjusted) for identical assets or liabilities in active markets that the entity has the ability to access as of the measurement date.
- Level 2** Significant other observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active and other inputs that are observable or can be corroborated by observable market data.
- Level 3** Significant unobservable inputs that reflect an entity's own assumptions about the assumptions that market participants would use in pricing an asset or liability.

The asset's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs.

***Recurring Measurements***

Following is a description of the valuation methodologies used for assets measured at fair value on a recurring basis. There have been no changes in the methodologies used at December 31, 2015 and 2014.

Investment securities in the Company's non-qualified deferred compensation plan (Note 9) are recorded at fair value on a recurring basis. Fair value measurement is based upon quoted market prices for identical assets or quoted prices for similar assets, if available. If quoted prices are not available, fair values are measured using matrix pricing models, or other model-based valuation techniques requiring observable inputs other than quoted prices such as yield curves, prepayment speeds and default rates.

The fair value of money market funds are carried at amortized cost which approximates fair value (Level 2). The fair value of fixed income securities, common stock and mutual funds is determined by obtaining quoted market prices on nationally recognized securities exchanges (Level 1). The fair value of the L & H Company, Inc. Class A shares is determined by the Capitalized Cash Flow Method (Level 3). An independent advisor valued the stock as of January 1, 2015 and 2014. The dividends and contributions receivable are carried at cost, which approximates fair value at December 31, 2015 and 2014 (Level 3.)

**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

Fair value of assets measured on a recurring basis at December 31, 2015 and 2014, is as follows:

	Fair Value Measurements at December 31, 2015 Using			
	Fair Value	Quoted Prices in Active Markets for Identical Assets/ Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Non-qualified plan investments				
Money market funds	\$ 5,559,647	\$ -	\$ 5,559,647	\$ -
Fixed income securities	1,094,168	1,094,168	-	-
Common stock	8,708,794	8,708,794	-	-
Mutual funds				
International funds	663,445	663,445	-	-
Small cap funds	201,334	201,334	-	-
Mid cap funds	263,973	263,973	-	-
Large cap funds	1,780,471	1,780,471	-	-
Bond funds	314,498	314,498	-	-
Equity funds	14,423,723	14,423,723	-	-
Real estate fund	140,969	140,969	-	-
L & H Company, Inc. Class A shares	4,139,649	-	-	4,139,649
Dividends and contributions receivable	3,662,972	-	-	3,662,972
Total	40,953,643	27,591,375	5,559,647	7,802,621
L & H Company, Inc. Class A shares presented as treasury stock	(4,139,649)	-	-	(4,139,649)
Dividends and contributions receivable eliminated in consolidation	(171,912)	-	-	(171,912)
Total, as presented on accompanying consolidated balance sheets	<u>\$ 36,642,082</u>	<u>\$ 27,591,375</u>	<u>\$ 5,559,647</u>	<u>\$ 3,491,060</u>

**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

	Fair Value Measurements at December 31, 2014 Using			
	Fair Value	Quoted Prices in Active Markets for Identical Assets/ Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Non-qualified plan investments				
Money market funds	\$ 776,292	\$ -	\$ 776,292	\$ -
Fixed income securities	1,130,551	1,130,551	-	-
Common stock	7,169,353	7,169,353	-	-
Mutual funds				
International funds	1,220,782	1,220,782	-	-
Small cap funds	1,692,962	1,692,962	-	-
Mid cap funds	1,124,338	1,124,338	-	-
Large cap funds	1,676,399	1,676,399	-	-
Bond funds	640,367	640,367	-	-
Equity funds	16,475,186	16,475,186	-	-
Developing market funds	476,650	476,650	-	-
Real estate fund	110,319	110,319	-	-
L & H Company, Inc.				
Class A shares	4,484,545	-	-	4,484,545
Dividends and contributions receivable	3,326,837	-	-	3,326,837
Total	40,304,581	31,716,907	776,292	7,811,382
L & H Company, Inc. Class A shares presented as treasury stock	(4,484,545)	-	-	(4,484,545)
Dividends and contributions receivable eliminated in consolidation	(202,445)	-	-	(202,445)
Total, as presented on accompanying consolidated balance sheets	<u>\$ 35,617,591</u>	<u>\$ 31,716,907</u>	<u>\$ 776,292</u>	<u>\$ 3,124,392</u>

**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

Changes in fair value of assets measured on a recurring basis using significant unobservable inputs (Level 3) for the years ended December 31, 2015 and 2014, are as follows:

	<b>2015</b>	<b>2014</b>
Beginning balance	\$ 7,811,382	\$ 5,928,622
Purchases of L & H Company, Inc. Class A shares	637,520	376,204
Sales of L & H Company, Inc. Class A shares	(982,416)	-
Change in dividends and contributions receivable	336,135	1,506,556
Ending balance	7,802,621	7,811,382
L & H Company, Inc. Class A shares presented as treasury stock	(4,139,649)	(4,484,545)
Dividends and contributions eliminated in consolidation	(171,912)	(202,445)
	<b>\$ 3,491,060</b>	<b>\$ 3,124,392</b>

**Note 4: Accounts Receivable**

Accounts receivable include amounts billed for completed work, contract retentions and progress billings on contracts in progress. Retentions withheld at December 31, 2015 and 2014, were \$6,340,557 and \$8,850,219, respectively.

Accounts receivable have been adjusted for all known uncollectible amounts. No allowance for doubtful accounts was considered necessary as of December 31, 2015 and 2014. The Company considers receivables that are at least 30 days past due to be delinquent. Accounts are written off when all attempts at collection have been made.

**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

**Note 5: Notes Payable**

The Company has the following notes payable at December 31:

	<b>2015</b>	<b>2014</b>
Notes payable with various equipment companies requiring monthly installments ranging from \$7,081 to \$303,718. Secured by equipment.	\$ 3,880,108	\$ 5,212,230
Notes payable to equipment financing companies, due in monthly principal installments through January 2019 ranging from \$783 to \$7,011 with interest from 2.27% to 5.00%. Secured by equipment. Repaid in 2015.	-	912,666
Note payable to bank, dated September 4, 2012, monthly principal installments of \$300,000. Interest at prime rate (3.25% at December 31, 2014) plus 0.50% was payable monthly. Secured by equipment. Repaid in 2015.	-	1,700,000
Note payable to bank, dated May 4, 2015, due April 2020, in monthly principal installments of \$166,667. Interest at the prime rate (3.50% at December 31, 2015), plus 0.25% is payable monthly. Secured by equipment.	8,833,331	-
Premium Financing Specialists, Inc. insurance premium financing due in equal monthly installments of \$297,989 through May 2016. Secured by all unearned premiums.	<u>1,489,946</u>	<u>1,536,598</u>
	14,203,385	9,361,494
Less current portion	<u>4,660,500</u>	<u>4,671,344</u>
	<u>\$ 9,542,885</u>	<u>\$ 4,690,150</u>

**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

Following are maturities of long-term debt for the next five years:

<u>Year</u>	<u>Amount</u>
2016	\$ 4,660,500
2017	3,170,554
2018	3,170,554
2019	2,368,462
2020	<u>833,315</u>
	<u>\$ 14,203,385</u>

**Note 6: Credit Facility**

The Company and six affiliated companies are co-obligors of a syndicated bank credit facility entered into on September 4, 2012. The credit facility provides for an aggregate revolving loan commitment of \$35,000,000, a term loan in the original amount of \$18,000,000 and an equipment loan in the amount of \$10,000,000 dated May 4, 2015. The revolving credit line matures on September 1, 2017. Interest is accrued and paid monthly at the prime rate (3.50% at December 31, 2015) minus 0.50% or a fixed rate equal to the LIBOR rate in effect on the borrowing date plus the LIBOR rate margin for periods up to one year. As of December 31, 2015 and 2014, no amount was outstanding on the revolving credit line. The term loan had a final maturity of August 31, 2017, and was payable in monthly principal installments of \$300,000. Interest was accrued and paid monthly at the prime rate plus 0.50%. At December 31, 2014, there was \$1,700,000 outstanding on the term loan, which was recorded by one of the affiliated co-obligors and reflected in these consolidated financial statements. The loan was repaid in 2015 (Note 5). The equipment loan has a final maturity of April 1, 2020, and is payable in monthly installments of \$166,667. At December 31, 2015, there was \$8,833,331 outstanding on the equipment loan, which was recorded by one of the affiliated co-obligors and reflected in these consolidated financial statements. The equipment loan is collateralized by certain equipment.

The Company along with the affiliated co-obligors must meet certain financial covenants regarding consolidated net worth, consolidated net income and leverage and debt ratios.

Additionally, the Company has \$4,881,746 of outstanding letters of credit at December 31, 2015.

**Note 7: Income Taxes**

Each member of the consolidated group provides for income taxes on a separate return basis and is charged or credited by the Parent with the tax or tax benefit shown in a separate return. Separate federal and state income tax returns are filed for SPEC Construction, Inc. The consolidated provision for income taxes is based on amounts reported in the consolidated statement of income adjusted for differences that do not enter into the computation of taxes payable under applicable laws. The Company recognizes deferred tax assets and liabilities for the expected future tax



**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

consequences of temporary differences between the financial reporting and tax basis of the Company's assets and liabilities. Measurement of deferred tax assets and liabilities is based upon the provision of enacted tax laws and the effects of future changes in tax laws or rates. A valuation allowance is provided when it is more likely than not that some portion of deferred tax assets arising from temporary differences will not be realized. The Company recognizes the financial statement impact of a tax position when it is more likely than not that the position will be sustained upon examination. The Company is no longer subject to U.S. federal, state and local income tax examinations by tax authorities for the years before the 2012 tax year.

The temporary differences relate primarily to estimated workers' compensation accruals, deferred compensation plan benefits (expenses for financial statement purposes, but not currently deductible for income tax purposes) and differences between accelerated depreciation for tax purposes and straight-line and declining balance depreciation for financial reporting purposes. The deferred tax assets and liabilities represent the future tax return consequences of those differences, which will either be deductible or taxable when the assets and liabilities are recovered and settled.

Deferred taxes consisted of the following at December 31, 2015 and 2014:

	<u>2015</u>	<u>2014</u>
Deferred tax assets - current	\$ 1,938,102	\$ 2,107,520
Deferred tax liability - non-current	\$ (11,999,910)	\$ (11,203,513)
Deferred tax asset - non-current	<u>14,935,750</u>	<u>14,507,574</u>
Net deferred tax asset - non-current	<u>\$ 2,935,840</u>	<u>\$ 3,304,061</u>

Components of the provision for income taxes are as follows for the years ended December 31, 2015 and 2014:

	<u>2015</u>	<u>2014</u>
Current state	\$ 1,886,882	\$ 1,841,798
Current federal	6,625,869	5,586,500
Deferred tax expense (benefit)	<u>537,639</u>	<u>(1,694,573)</u>
	<u>\$ 9,050,390</u>	<u>\$ 5,733,725</u>

**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

The reconciliation of income tax expense at the statutory rate to the Company's actual income tax expense is as follows:

	<b>2015</b>	<b>2014</b>
Tax expense computed at the expected federal statutory rate	\$ 7,451,148	\$ 5,170,088
Nondeductible expenses and other	(287,640)	(1,278,161)
State income tax expense	1,886,882	1,841,798
	\$ 9,050,390	\$ 5,733,725

**Note 8: Employee Benefit Plans**

***Employee Stock Ownership Plan (ESOP)***

On June 9, 1999, the Company established an Employee Stock Ownership Plan (ESOP), which is a non-contributory plan established to acquire shares of the Company's common stock for the benefit of all eligible employees who are not part of a collectively bargained group and meet certain age and service requirements. The shareholders exchanged 218,644 original shares for 142,112 Class A shares and 76,532 Class B shares. The ESOP acquired the 76,532 Class B shares from the Company's stockholders for \$9,083,583 (\$118.69 per share), using funds loaned to the ESOP by the Company. As of December 31, 2014, the ESOP loan had been paid in full.

As the ESOP made the payments on these loans, the Class B shares were released or allocated to the plan participants based on the procedures specified in the plan agreement.

In November 1993, the American Institute of Certified Public Accountants issued Statement of Position 93-6 entitled, *Employers' Accounting for Employee Stock Ownership Plans*, which was codified into Accounting Standards Codification No. 718, *Stock Compensation*, which provides that contribution expense for shares acquired after December 31, 1992, is based on the fair value of the shares being released. The balance of the note receivable from the ESOP was \$0 as of December 31, 2015 and 2014.

**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

The ESOP shares as of December 31, 2015, were as follows:

Total Class B shares originally purchased by the ESOP on June 30, 1999, and outstanding as of December 31, 1999	76,532.00
Class B shares purchased from terminating participants through the year ended December 31, 2015 and retired	<u>(35,595.67)</u>
Class B shares outstanding as of December 31, 2015, (46,184.59 as of December 31, 2014)	40,936.33
Shares released and outstanding through December 31, 2014	(46,184.59)
Shares committed to be released as of December 31, 2015, (0 in 2014)	-
Shares repurchased/retired in 2015 (4,285.17 in 2014)	<u>5,248.26</u>
Unearned ESOP Class B shares as of December 31, 2015, (0 as of December 31, 2014)	<u>-</u>

The Company is obligated at the option of each beneficiary to repurchase shares of the ESOP upon the beneficiary's termination or after retirement. At December 31, 2015, the fair value, as estimated by ComStock Valuation Advisors, Inc., of the 40,937 allocated shares held by the ESOP is approximately \$20,115,000, based on the most recent independent valuation completed as of December 31, 2014. The valuation as of December 31, 2015, has not yet been completed.

***Profit Sharing Plan***

L & H Company, Inc. and its subsidiaries have a discretionary profit sharing plan for all employees who are not part of a collective bargaining agreement and meet certain age and service requirements. Company contributions during the years ended December 31, 2015 and 2014, were \$2,047,537 and \$2,145,452, respectively, which were still owed at December 31, 2015 and 2014, respectively.

***401(k) Plan***

L & H Company, Inc. and its subsidiaries have a 401(k) retirement plan covering substantially all employees who are not part of a collective bargaining agreement and have completed 90 days of service. The Company, at its discretion, may make a matching contribution to participants employed as of the end of the year. The Company contributed \$379,406 and \$378,734 for the years ended December 31, 2015 and 2014, respectively.

**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

***Multi-employer Pension Plans***

The Company contributes to certain multi-employer defined benefit pension plans under the terms of collective bargaining agreements that cover the Company's union-represented employees. The risks of participating in these multi-employer plans are different from single-employer plans in the following aspects: a) assets contributed to multiemployer plans by one employer may be used to provide benefits to employees of other participating employers; b) if a participating employer stops contributing to the plan, the unfunded obligations of the plan may be borne by the remaining participating employers and c) if a participating employer chooses to stop participating in some of its multiemployer plans, it may be required to pay those plans a withdrawal liability, an amount based on the underfunded status of the respective plan.

The Company's participation in certain multi-employer plans for the years ended December 31, 2015 and 2014, is outlined in the table below. The "EIN/Pension Plan Number" column provides the Employer Identification Number (EIN) and the three-digit plan number, if applicable. Unless otherwise noted, the most recent Pension Protection Act (PPA) zone status available in 2015 and 2014 is for the plan's years ended December 31, 2014 and 2013, respectively. The zone status is based on information that the Company received from the plan and is certified by the plan's actuary. Among other factors, plans in the red zone are generally less than 65% funded, plans in the yellow zone are at least 65% funded but less than 80% funded, and plans in the green zone are at least 80% funded. The "FIP/RP Status Pending/Implemented" column indicates plans for which a financial improvement plan (FIP) or a rehabilitation plan (RP) is either pending or has been implemented. The last column lists the expiration dates of the collective bargaining agreements to which the plans are subject. The number of employees covered by the Company's multi-employer plans may have increased or decreased, affecting the period-to-period comparability of contributions. The increase or decrease is a result of the type of work or unions utilized during the year.

**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

The following summarizes the Company's significant participation in certain multi-employer pension plans at December 31, 2015 and 2014.

Pension Fund	EIN/Pension Plan Number	Protection Act Zone Status		Status Pending/ Implemented	Company's Contribution		Surcharge Imposed	Agreement Expiration Date
		2014	2013		2015	2014		
Fox Valley and Vicinity Laborers Pension Fund (a)	36-6147409/001	Yellow at May 31, 2014	Yellow at May 31, 2013	No	\$ 5,135,000	\$ 4,670,000	No	5/31/2017
Central Pension Fund of the IUOE & Participating Employers (a)	36-6052390/001	Green at 1/31/2015	Green at 1/31/2014	No	5,135,000	2,810,000	No	5/31/2017
Suburban Teamsters of Northern Illinois Pension Plan (a)	36-6155778/001	Yellow	Yellow	Implemented	1,319,000	1,013,000	Yes	5/31/2019
Local 697 IBEW and Electrical Industry Pension Plan (a)	51-6133048/001	Yellow	Yellow	Yes	2,445,000	3,139,000	No	5/27/2018
IBEW Local 150 Pension Fund	36-6140629/001	Green as of 6/30/2014	Green as of 6/30/2013	No	739,000	743,000	No	6/3/2018
Local Union No. 9 IBEW and Outside Contractors Pension Fund (a)	51-6077720/001	Green as of 10/31/2014	Green as of 10/31/2013	No	4,150,000	2,700,000	No	5/31/2017
NECA-IBEW Pension Trust Fund	51-6029903/001	Green as of 5/31/2015	Green as of 5/31/2014	No	3,993,000	4,040,000	No	6/4/2017
					<u>\$ 22,916,000</u>	<u>\$ 19,115,000</u>		

(a) The number of employees covered in the multiemployer plan decreased or increased, affecting the period-to-period comparability of contributions.

The Company was listed in its plans' Form 5500 as providing more than 5% of the total contributions for the following plans and plan years:

Pension Fund	Year Contribution for Plan Exceeded 5% of Total Contributions
Local 697 IBEW and Electrical Industry Pension Plan	2015 and 2014
IBEW Local 150 Pension Fund	2015 and 2014
Local Union No. 9 IBEW and Outside Contractors Pension Fund	2015 and 2014

**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

**Note 9: Non-qualified Plan**

L & H Company, Inc. and its subsidiaries have established a non-qualified deferred compensation plan covering a select group of management employees. The plan is structured for the subsidiaries to pay all required contributions to the Parent Company who will make the contributions to a trust established for the benefit of the participants. The assets contributed and held in the trust remain the general assets of the Company available to general creditors. At December 31, 2015 and 2014, the trust held investments and has a related liability of \$40,953,643 and \$40,304,581, respectively. The December 31, 2015 and 2014 investment balances include L & H Company, Inc. Class A shares with a cost of \$4,139,649 and \$4,484,545, respectively, and dividends and contributions receivable from L & H Company, Inc. of \$171,912 and \$202,445 at December 31, 2015 and 2014, respectively. Non-qualified plan investments are presented at \$36,642,082 and \$35,617,591 on the accompanying consolidated balance sheets at December 31, 2015 and 2014, respectively. During the years ended December 31, 2015 and 2014, employee contributions were \$502,892 and \$513,528 respectively. The Company's contributions were \$3,480,162 and \$3,661,115 during 2015 and 2014, respectively, of which \$3,480,162 and \$3,113,958 were still owed at December 31, 2015 and 2014, respectively.

**Note 10: Commitments**

L & H Company, Inc. and its subsidiaries have various operating lease commitments. Future annual minimum payments are as follows as of December 31, 2015:

<u>Year</u>	<u>Amount</u>
2016	\$ 862,316
2017	861,307
2018	791,173
2019	<u>291,153</u>
	<u>\$ 2,805,949</u>

Rent expense was \$1,359,232 and \$1,454,196 for the years ended December 31, 2015 and 2014, respectively.

**Note 11: Capital Transactions**

For the year ended December 31, 2015, the non-qualified deferred compensation plan sold 5,064 shares, with a cost of \$1,256,344 back to the Company for \$2,488,500. The Company then retired these 5,064 shares, along with another 1,412 shares by reducing common stock and retained earnings by \$367,254 and \$2,392,674, respectively. Additionally, during 2015, the Company

**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

purchased and retired 5,248 shares of Class B common stock purchased by the ESOP by reducing common stock and retained earnings by \$297,629 and \$2,579,045, respectively.

For the year ended December 31, 2014, the Company purchased and retired 1,742 shares of Class A common stock by reducing common stock and retained earnings by \$98,789 and \$356,992, respectively. Additionally, during 2014, the Company purchased and retired 4,285 shares of Class B common stock purchased by the ESOP by reducing common stock and retained earnings by \$243,012 and \$2,148,198, respectively.

**Note 12: Reclassifications**

Certain amounts in the 2014 consolidated financial statements have been reclassified to agree with the 2015 presentation with no effect on total equity or net income.

**Note 13: Contingencies**

The Company is a defendant in certain litigation and claims which arose in the ordinary course of operations. Management intends to vigorously defend its position and expects the litigation to be resolved with no material adverse effect on the Company's consolidated financial position.

The Company has also guaranteed the repayment of certain mortgage loans of partnerships invested in by Lizzadro Properties, Inc. These loans are secured by buildings. The loans mature on various dates through January 2022, and the guarantee is in effect for the entire term of the loan. At December 31, 2015, the outstanding principal balance on the guaranteed loans was \$4,925,005. In accordance with accounting principles generally accepted in the United States of America, no liability is required to be recorded for this arrangement.

**L & H Company, Inc. and Subsidiaries**  
**Notes to Consolidated Financial Statements**  
**December 31, 2015 and 2014**

**Note 14: Goodwill**

Changes in carrying amount of goodwill for the years ended December 31, 2015 and 2014, were:

	Cost	Accumulated Amortization	Accumulated Impairment Loss	Net
Balance, January 1, 2014	\$ 481,000	\$ -	\$ -	\$ 481,000
Amortization	-	(48,100)	-	(48,100)
Balance, December 31, 2014	481,000	(48,100)	-	432,900
Impairment loss	-	-	(432,900)	(432,900)
Balance, December 31, 2015	<u>\$ 481,000</u>	<u>\$ (48,100)</u>	<u>\$ (432,900)</u>	<u>\$ -</u>

All goodwill was allocated to SPEC Construction, Inc. a contractor engaged in railroad crossing construction. Operating profits and cash flows were lower than expected in 2015, and Company management decided to cease operations for this entity in 2015, resulting in a goodwill impairment loss of \$432,900 in 2015. The value at December 31, 2015, is based on Level 3 inputs as described in Note 3.

**Note 15: Concentrations**

For the year ended December 31, 2015, two customers accounted for approximately 30% of revenues. At December 31, 2015, these customers accounted for approximately 42% of accounts receivable. For the year ended December 31, 2014, three customers accounted for approximately 49% of revenues. At December 31, 2014, these customers accounted for approximately 48% of accounts receivable.

**Note 16: Subsequent Events**

Management has evaluated subsequent events through the date of the Independent Auditor's Report, which is the date the consolidated financial statements were available to be issued.



**Supplementary Information**

## Independent Auditor's Report on Supplementary Information

Board of Directors  
L & H Company, Inc.  
Oak Brook, Illinois

Our audits were conducted for the purpose of forming an opinion on the consolidated financial statements as a whole. The consolidated supplementary information listed in the table of contents is presented for purposes of additional analysis and is not a required part of the consolidated financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the consolidated financial statements. The information has been subjected to the auditing procedures applied in the audits of the consolidated financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the consolidated financial statements or to the consolidated financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the consolidated financial statements as a whole.

*BKD, LLP*

Oakbrook Terrace, Illinois  
April 14, 2016

**L & H Company, Inc. and Subsidiaries**  
**Consolidated Schedules of Operating Expenses**  
**Years Ended December 31, 2015 and 2014**

	2015	2014	Increase (Decrease)
Advertising	\$ 14,278	\$ 25,094	\$ (10,816)
Automobile	1,260,082	1,301,316	(41,234)
Bad debt expense (recovery)	32,261	(1,189)	33,450
Building maintenance - wages and expense	786,773	600,493	186,280
Computer services	905,883	557,852	348,031
Customer seminars and training	30,170	26,794	3,376
Depreciation and amortization	22,840,018	20,309,638	2,530,380
Donations	-	1,500	(1,500)
Drawings and blueprints	22,620	38,292	(15,672)
Dues and subscriptions	40,666	27,866	12,800
Equipment rental	71,690	85,117	(13,427)
Fuel	68,322	193,368	(125,046)
Gain on sale of property and equipment	(1,154,508)	(421,960)	(732,548)
Insurance	6,600,104	4,020,704	2,579,400
Moving expenses	7,500	25,047	(17,547)
Other	1,080	375	705
Professional services	1,025,148	1,018,404	6,744
Rent	1,359,232	1,454,196	(94,964)
Salaries and wages	21,079,965	20,446,008	633,957
Safety supplies	862,804	1,622,699	(759,895)
Sales promotion	253,940	321,548	(67,608)
Stationery and office	972,574	933,354	39,220
Taxes			
Payroll	1,280,819	1,292,215	(11,396)
Property	318,556	428,902	(110,346)
Other	1,484,837	1,325,876	158,961
Penalties	22,896	7,074	15,822
Telephone	974,484	1,150,864	(176,380)
Tool and equipment maintenance	6,344,334	6,130,017	214,317
Training and education	185,251	168,133	17,118
Travel	268,828	296,454	(27,626)
Truck maintenance - wages and expense	8,868,730	9,520,020	(651,290)
Union benefits - administrative employees	2,064,359	1,761,258	303,101
Utilities	390,587	429,953	(39,366)
Operating expense applied to contracts in progress	554,275	(80,023)	634,298
<b>Total operating expenses</b>	<b>\$ 79,838,558</b>	<b>\$ 75,017,259</b>	<b>\$ 4,821,299</b>

CERTIFICATION

I, MARIBEL GARIBAY, Secretary of L & H COMPANY, INC. do hereby certify that the following is a true and correct copy of a resolution duly adopted by the Board of Directors of L & H COMPANY, INC. on April 23, 2015, and that said resolution has not been rescinded or amended.

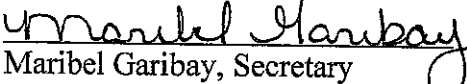
RESOLVED, that sales and consignment contracts, and bids therefor, including bids to and contracts with any Municipal, County or State government, or with the government of the United States, or with any agency or department of any such government, and bonds to secure the performance of such bids and contracts, may be executed on behalf of this Corporation by any one of the following:

PRESIDENT	-	JOHN S. LIZZADRO, JR.
VICE PRESIDENT	-	FRANK J. LIZZADRO
CHAIRMAN	-	JOHN S. LIZZADRO, SR.
TREASURER	-	LOUIS L. LIZZADRO

FURTHER RESOLVED, that in conjunction with the above stated purpose and in corroboration with the above persons, the following are authorized to attest same:

PRESIDENT	-	JOHN S. LIZZADRO, JR.
VICE PRESIDENT	-	FRANK J. LIZZADRO
CHAIRMAN	-	JOHN S. LIZZADRO, SR.
SECRETARY	-	MARIBEL GARIBAY
ASST. SECRETARY	-	DAVID A. LEALI
ASST. SECRETARY	-	FRANK A. LIZZADRO
TREASURER	-	LOUIS L. LIZZADRO
ASST. TREASURER	-	CHARLES E. ANDERSON

IN WITNESS WHEREOF, I have affixed my name as Secretary and have caused the corporate seal of the Corporation to be hereunto affixed the 1<sup>ST</sup> day of April 2016.

  
Maribel Garibay, Secretary

SEAL:

CERTIFICATION

I, MARIBEL GARIBAY, Secretary of MEADE ELECTRIC COMPANY, INC., do hereby certify that the following is a true and correct copy of a resolution duly adopted by the Board of Directors of MEADE ELECTRIC COMPANY, INC., on February 15, 2016 and that said resolution has not been rescinded.

Authorization to Sign Contracts

RESOLVED, that sales and consignment contracts, and bids therefor, including bids to and contracts with any Municipal, County or State government, or with the government of the United States, or with any agency or department of any such government, and bonds to secure the performance of such bids and contracts, may be executed on behalf of this Corporation by any one of the following:

PRESIDENT & CEO	-	FRANK J. LIZZADRO
VICE PRESIDENT	-	FRANK A. LIZZADRO
VICE PRESIDENT	-	DAVID A. LEALI
VICE PRESIDENT	-	ROBERT SCHACHT
VICE PRESIDENT	-	GLEN A. HICKS
VICE PRESIDENT	-	MICHAEL K. KNUTSON
VICE PRESIDENT OF ENGINEERING	-	CHARLES E. ANDERSON
VICE PRESIDENT	-	JOSEPH VAN GUNDY III
VICE PRESIDENT OF SAFETY & RISK MGMT	-	TIMOTHY SWANSON
TREASURER	-	JOHN S. LIZZADRO, JR.
SECRETARY	-	MARIBEL GARIBAY
DEPARTMENT MANAGER	-	JAY K. ANZALONE
SUPERINTENDENT	-	PAUL J. NABER

FURTHER RESOLVED, that in conjunction with the above stated purpose and in corroboration with the above stated persons, the following are authorized to attest same.

PRESIDENT and CEO	-	FRANK J. LIZZADRO
VICE PRESIDENT	-	FRANK A. LIZZADRO
VICE PRESIDENT	-	DAVID A. LEALI
VICE PRESIDENT	-	ROBERT SCHACHT
VICE PRESIDENT	-	GLEN A. HICKS
VICE PRESIDENT	-	MICHAEL K. KNUTSON
VICE PRESIDENT	-	JOSEPH VAN GUNDY III
VICE PRESIDENT OF	-	

CERTIFICATION

I, MARIBEL GARIBAY, Secretary of MEADE, INC., do hereby certify that the following is a true and correct copy of a resolution duly adopted by the Board of Directors of MEADE, INC., on February 15, 2016 and that said resolution has not been rescinded.

Authorization to Sign Contracts

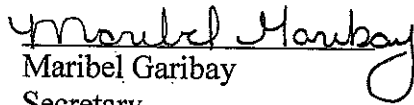
RESOLVED, that sales and consignment contracts, and bids therefor, including bids to and contracts with any Municipal, County or State government, or with the government of the United States, or with any agency or department of any such government, and bonds to secure the performance of such bids and contracts, may be executed on behalf of this Corporation by any one of the following:

CEO	-	FRANK J. LIZZADRO
PRESIDENT	-	FRANK A. LIZZADRO
VICE PRESIDENT	-	DAVID A. LEALI
VICE PRESIDENT	-	MICHAEL K. KNUTSON
VICE PRESIDENT	-	JOSEPH VAN GUNDY III
VICE PRESIDENT OF SAFETY & RISK MGMT	-	TIMOTHY SWANSON
TREASURER	-	JOHN S. LIZZADRO, JR.
SUPERINTENDENT	-	PAUL J. NABER
SENIOR ESTIMATOR	-	FRANK J. HUCKIN

FURTHER RESOLVED, that in conjunction with the above stated purpose and in corroboration with the above stated persons, the following are authorized to attest same.

CEO	-	FRANK J. LIZZADRO
PRESIDENT	-	FRANK A. LIZZADRO
VICE PRESIDENT	-	DAVID A. LEALI
VICE PRESIDENT	-	MICHAEL K. KNUTSON
VICE PRESIDENT	-	JOSEPH VAN GUNDY III
VICE PRESIDENT OF SAFETY & RISK MGMT	-	TIMOTHY SWANSON
TREASURER	-	JOHN S. LIZZADRO, JR.
SECRETARY	-	MARIBEL GARIBAY
SUPERINTENDENT	-	PAUL J. NABER
SENIOR ESTIMATOR	-	FRANK J. HUCKIN
EST. GROUP MANAGER	-	THEODORE C. CZAJA
ASST. EST. GROUP MGR	-	SCOTT M. SANSON
OFFICE MANAGER	-	JANET L. LABUHN
GROUP SECRETARY	-	JOAN MASELLI
HUMAN RESOURCES	-	ALLISON M. LIZZADRO-MEGALIS

IN WITNESS WHEREOF, I have affixed my name as Secretary and have caused the corporate seal of the corporation to be hereunto affixed the 1<sup>ST</sup> day of April, 2016.

  
Maribel Garibay  
Secretary

SEAL

CERTIFICATION

I, MARIBEL GARIBAY, Secretary of MEADE INDUSTRIES, INC., do hereby certify that the following is a true and correct copy of a resolution duly adopted by the Board of Directors of MEADE INDUSTRIES, INC., on January 5, 2016 and that said resolution has not been rescinded.

Authorization to Sign Contracts

RESOLVED, that sales and consignment contracts, and bids therefor, including bids to and contracts with any Municipal, County or State government, or with the government of the United States, or with any agency or department of any such government, and bonds to secure the performance of such bids and contracts, may be executed on behalf of this Corporation by any one of the following:

PRESIDENT & CEO	-	FRANK J. LIZZADRO
VICE PRESIDENT	-	FRANK A. LIZZADRO
VICE PRESIDENT	-	DAVID A. LEALI
VICE PRESIDENT	-	ROBERT SCHACHT
VICE PRESIDENT	-	GLEN A. HICKS
VICE PRESIDENT	-	
SAFETY & RISK MGMT	-	TIMOTHY SWANSON
TREASURER	-	JOHN S. LIZZADRO, JR.
DEPARTMENT MGR.	-	JAY K. ANZALONE

FURTHER RESOLVED, that sales and consignment contracts, and bids therefor, including bids to and contracts with any Municipal, County or State government, or with the government of the United States, or with any agency or department of any such government, and bonds to secure the performance of such bids and contracts, may be executed on behalf of this Corporation with a limit of \$200,000 by any one of the following:

PROJECT EXECUTIVE	-	DANIEL B. HUSEMAN
IL INDUSTRIAL DIVISION		
GENERAL MANAGER	-	ROBERT D. HUTCHINSON
IN INDUSTRIAL DIVISION		
GENERAL MANAGER	-	CHRISTOPHER J. BROTON

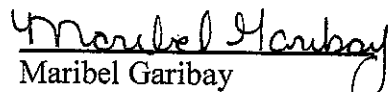
FURTHER RESOLVED, that in conjunction with the above stated purpose and in corroboration with the above stated persons, the following are authorized to attest same.

PRESIDENT and CEO	-	FRANK J. LIZZADRO
VICE PRESIDENT	-	FRANK A. LIZZADRO
VICE PRESIDENT	-	DAVID A. LEALI
VICE PRESIDENT	-	ROBERT SCHACHT



VICE PRESIDENT	-	GLEN A. HICKS
VICE PRESIDENT		
SAFETY & RISK MGMT	-	TIMOTHY SWANSON
TREASURER	-	JOHN S. LIZZADRO, JR.
SECRETARY	-	MARIBEL GARIBAY
DEPARTMENT MGR.	-	JAY K. ANZALONE
PROJECT MANAGER	-	DANIEL B. HUSEMAN
IL INDUSTRIAL DIVISION		
GENERAL MANAGER	-	ROBERT D. HUTCHINSON
IN INDUSTRIAL DIVISION		
GENERAL MANAGER	-	CHRISTOPHER J. BROTON
EST. GROUP MGR.	-	THEODORE C. CZAJA
ASST. EST. GROUP MGR.	-	SCOTT M. SANSON
PROJECT MANAGER	-	DAVID J. PAJOR
PROJECT MANAGER	-	MICHAEL L. LEEDER
OFFICE MANAGER	-	JANET L. LABUHN
GROUP SECRETARY	-	JOAN MASELLI
GROUP SECRETARY	-	DEBORAH B. ROTAS
HUMAN RESOURCE	-	ALLISON M. LIZZADRO-MEGALIS

IN WITNESS WHEREOF, I have affixed my name as Secretary and have caused the corporate seal of the corporation to be hereunto affixed the 1<sup>st</sup> day of April, 2016.

  
Maribel Garibay  
 Secretary

SEAL

CERTIFICATION

I, MARIBEL GARIBAY, Secretary of TRAFFIC CONTROL CORPORATION, do hereby certify that the following is a true and correct copy of a resolution duly adopted by the Board of Directors of TRAFFIC CONTROL CORPORATION, on January 18, 2016, and that said resolution has not been rescinded or amended.

Authority to Sign Contracts

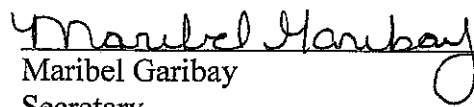
RESOLVED, that sales and consignment contracts, and bids therefor, including bids to and contracts with any Municipal, County or State government, or with the government of the United States, or with any agency or department of any such government, and bonds to secure the performance of such bids and contracts, may be executed on behalf of this Corporation by any one of the following:

PRESIDENT	- JOHN S. LIZZADRO, JR.
VICE PRESIDENT	- MICHAEL L. WILLIAMS
VICE PRESIDENT	- JOSEPH M. SPEDALE

FURTHER RESOLVED, that in conjunction with the above stated purpose and in corroboration with the above persons, the following are authorized to attest same:

PRESIDENT	- JOHN S. LIZZADRO, JR.
VICE PRESIDENT	- MICHAEL L. WILLIAMS
VICE PRESIDENT	- JOSEPH M. SPEDALE
SECRETARY	- MARIBEL GARIBAY
CONTROLLER	- JOANN NOVOTNY

IN WITNESS WHEREOF, I have affixed my name as Secretary and have caused the corporate seal of the Corporation to be hereunto affixed the 1<sup>st</sup> day of April, 2016.

  
Maribel Garibay  
Secretary

SEAL:

**EXHIBIT 9**

**COUNTY OF COOK PROPOSAL BID BOND AND BID DEPOSIT FORM**

County of Cook  
Department of Transportation and Highways

Proposal Bid Bond

Project: Electrical and Mechanical Item Maintenance Various Locations  
Section 17-8EMIM-00-GM  
Date September 2, 2016  
Letting

We Meade, Inc.  
\_\_\_\_\_ as Principal, and Continental Casualty Company  
\_\_\_\_\_ as Surety, are held and firmly bound unto the County of

Cook a body politic and corporate of the state of Illinois herein after called the County in the penal sum of 5% 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. We bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly to pay to the County this sum under the conditions of this instrument.

WHEREAS THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that, the said PRINCIPAL is submitting a written proposal to the County acting through its awarding agency for the construction of the work designated as the above section.

THEREFORE, if the proposal is accepted and a contract awarded to the PRINCIPAL by the County for the above-designated section, and the PRINCIPAL shall within fifteen (15) days after award enter into a formal contract, furnish surety guaranteeing the faithful performance of the work, and furnish the required insurance coverage, all as provided in the Standard Specifications for Road and Bridge Construction" and applicable Supplemental Specifications, then this obligation shall become void; otherwise it shall remain in full force and effect.

IN THE EVENT the County determines the PRINCIPAL has failed to enter into a formal contract in compliance with any requirements set forth in the preceding paragraph, then the County acting through its awarding agency shall immediately be entitled to recover the full penal sum set out above, together with all court costs, all attorney fees, and any other expense of recovery.

IN TESTIMONY WHEREOF, the said PRINCIPAL and said SURETY have caused this instrument to be signed by their respective officers and their corporate seals to be hereunto affixed this 2nd day of September A.D. 20 16.



Meade, Inc.  
(Company Name) \_\_\_\_\_ (Seal) \_\_\_\_\_  
BY: [Signature] Vice President (Signature & Title)  
BY: \_\_\_\_\_ (Signature & Title)

(If PRINCIPAL is a joint venture of two or more contractors, the company names, seals and authorized signatures of each contractor must be affixed.)

SURETY

Continental Casualty Company  
(Name of Surety) \_\_\_\_\_ (Seal) \_\_\_\_\_  
BY: [Signature] Kimberly Bragg, (Signature of Attorney-in-fact)

STATE OF ILLINOIS  
COUNTY OF COOK  
I, Sarah E. Green, a Notary Public in and for Cook County, do hereby certify that  
Michael K. Knutson and Kimberly Bragg  
(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, sealed, 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 2nd day of September A.D., 20 16. My commission expires February 17, 2020

[Signature]  
Notary Public, Sarah E. Green

\*Improper execution of this form (i.e. Missing Signatures or Seals or incomplete certification) will result in bid being declared irregular.  
\*\* If Bid Bond is used in lieu of proposal guaranty check, it must be on this form and must be submitted with Bid.



POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company (herein called "the CNA Companies"), are duly organized and existing insurance companies having their principal offices in the City of Chicago, and State of Illinois, and that they do by virtue of the signatures and seals herein affixed hereby make, constitute and appoint

Kimberly Bragg , Individually

of Chicago, IL their true and lawful Attorney-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on their behalf bonds, undertakings and other obligatory instruments of similar nature

Surety Bond No: Bid Bond
Principal: Meade, Inc.
Obligee: Cook County

- In Unlimited Amounts -

and to bind them thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of their insurance companies and all the acts of said Attorney, pursuant to the authority hereby given is hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law and Resolutions, printed on the reverse hereof, duly adopted, as indicated, by the Boards of Directors of the insurance companies.

In Witness Whereof, the CNA Companies have caused these presents to be signed by their Vice President and their corporate seals to be hereto affixed on this 1st day of December, 2015.



Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania

Handwritten signature of Paul T. Bruflat

Paul T. Bruflat Vice President

State of South Dakota, County of Minnehaha, ss:

On this 1st day of December, 2015, before me personally came Paul T. Bruflat to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is a Vice President of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company described in and which executed the above instrument; that he knows the seals of said insurance companies; that the seals affixed to the said instrument are such corporate seals; that they were so affixed pursuant to authority given by the Boards of Directors of said insurance companies and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said insurance companies.



My Commission Expires June 23, 2021

Handwritten signature of J. Mohr

J. Mohr Notary Public

CERTIFICATE

I, D. Bult, Assistant Secretary of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company do hereby certify that the Power of Attorney herein above set forth is still in force, and further certify that the By-Law and Resolution of the Board of Directors of the insurance companies printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said insurance companies this 2nd day of September, 2016.



Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania

Handwritten signature of D. Bult

D. Bult Assistant Secretary

## Authorizing By-Laws and Resolutions

ADOPTED BY THE BOARD OF DIRECTORS OF CONTINENTAL CASUALTY COMPANY:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company at a meeting held on May 12, 1995:

"RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of Continental Casualty Company.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25<sup>th</sup> day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company. "

ADOPTED BY THE BOARD OF DIRECTORS OF NATIONAL FIRE INSURANCE COMPANY OF HARTFORD:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company by unanimous written consent dated May 10, 1995:

"RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of National Fire Insurance Company of Hartford.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25<sup>th</sup> day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company. "

ADOPTED BY THE BOARD OF DIRECTORS OF AMERICAN CASUALTY COMPANY OF READING, PENNSYLVANIA:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company by unanimous written consent dated May 10, 1995:

"RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of American Casualty Company of Reading, Pennsylvania.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25<sup>th</sup> day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company. "



**EXHIBIT 10**

**IDOT Certificate of Eligibility and IDOT Affidavit of Availability  
forms not supplied here**





9550 W. 55th Street • Suite A • McCook, IL 60525 • 708-588-2500 • 708-588-2501 Fax

May 20, 2016

Mr. Michael Copp, Prequalification Engineer  
Illinois Department of Transportation  
Bureau of Construction, Room 322  
2300 S. Dirksen Parkway  
Springfield, IL 62764  
Attn: Chad Coombs, Prequalification Analyst

Re: Letting date – 06/10/16  
Request for Authorization to Bid

Dear Mr. Copp,

Per the Illinois Department of Transportation Rules of Prequalification of Contractors, Meade, Inc. is requesting a waiver to forgo filing the Affidavit of Availability, under Section 650.310 sub. D, based on our current financial rating.

If you have any questions, I can be reached at 708-588-6078

Sincerely,

A handwritten signature in cursive script that reads "Shalmar Richards".

Shalmar Richards  
EMC Adm. Mgr.



**Illinois Department  
of Transportation**

## Certificate of Eligibility

Meade, Inc.

Contractor No 3948

2215 South York Road, Suite 304 Oak Brook, IL 60523-4004

WHO HAS FILED WITH THE DEPARTMENT AN APPLICATION FOR PREQUALIFICATION STATEMENT OF EXPERIENCE, EQUIPMENT AND FINANCIAL CONDITION IS HEREBY QUALIFIED TO BID AT ANY OF DEPARTMENT OF TRANSPORTATION LETTINGS IN THE CLASSES OF WORK AND WITHIN THE AMOUNT AND OTHER LIMITATIONS OF EACH CLASSIFICATION, AS LISTED BELOW, FOR SUCH PERIOD AS THE UNCOMPLETED WORK FROM ALL SOURCES DOES NOT EXCEED

SUPER UNLIMITED

001	EARTHWORK	Unlimited
012	DRAINAGE	\$4,250,000
014	ELECTRICAL	Unlimited
017	CONCRETE CONSTRUCTION	\$1,200,000

THIS CERTIFICATE OF ELIGIBILITY IS VALID FROM 5/25/2016 TO 4/30/2017 INCLUSIVE, AND SUPERSEDES ANY CERTIFICATE PREVIOUSLY ISSUED, BUT IS SUBJECT TO REVISION OR REVOCATION, IF AND WHEN CHANGES IN THE FINANCIAL CONDITION OF THE CONTRACTING FIRM OR OTHER FACTS JUSTIFY SUCH REVISIONS OR REVOCATION. ISSUED AT SPRINGFIELD, ILLINOIS ON 5/25/2016.

Interim Engineer of Construction

**EXHIBIT 11**

**IDENTIFICATION OF SUBCONTRACTOR/SUPPLIER/SUBCONSULTANT FORM**  
**(Please fill out one form for each subcontractor that you are planning to use**  
**including those listed in the Minority or Women own businesses.)**

**Cook County  
Office of the Chief Procurement Officer  
Identification of Subcontractor/Supplier/Subconsultant Form**

<b>OCPO ONLY:</b>	
<input type="radio"/>	Disqualification
<input checked="" type="radio"/>	Check Complete

The Bidder/Proposer/Respondent ("the Contractor") will fully complete and execute and submit an Identification of Subcontractor/Supplier/Subconsultant Form ("ISF") with each Bid, Request for Proposal, and Request for Qualification. **The Contractor must complete the ISF for each Subcontractor, Supplier or Subconsultant which shall be used on the Contract.** In the event that there are any changes in the utilization of Subcontractors, Suppliers or Subconsultants, the Contractor must file an updated ISF.

Bid/RFP/RFQ No.: 1628-15554	Date: 9/2/16
Total Bid or Proposal Amount:	Contract Title: Electrical and Mechanical Item Maintenance
Contractor: Meade, Inc.	Subcontractor/Supplier/ Subconsultant to be added or substitute: Taylor Electric Co.
Authorized Contact for Contractor: Mike Knutson	Authorized Contact for Subcontractor/Supplier/ Subconsultant: Kendra Dinkins
Email Address (Contractor): mkk@meade100.com	Email Address (Subcontractor): kddinkins@tayloelectricco.com
Company Address (Contractor): 6850 W. 62nd Street	Company Address (Subcontractor): 7811 S. Stony Island Ave.
City, State and Zip (Contractor): Chicago, IL 60638	City, State and Zip (Subcontractor): Chicago, IL 60649
Telephone and Fax (Contractor) 708-588-2594	Telephone and Fax (Subcontractor) 773-346-5768
Estimated Start and Completion Dates (Contractor) 1/1/17 - 12/31/17	Estimated Start and Completion Dates (Subcontractor) 1/1/17 - 12/31/17

**Note:** Upon request, a copy of all written subcontractor agreements must be provided to the OCPO.

<u>Description of Services or Supplies</u>	<u>Total Price of Subcontract for Services or Supplies</u>
electrical construction services	\$690,500.00

The subcontract documents will incorporate all requirements of the Contract awarded to the Contractor as applicable. The subcontract will in no way hinder the Subcontractor/Supplier/Subconsultant from maintaining its progress on any other contract on which it is either a Subcontractor/Supplier/Subconsultant or principal contractor. This disclosure is made with the understanding that the Contractor is not under any circumstances relieved of its abilities and obligations, and is responsible for the organization, performance, and quality of work. **This form does not approve any proposed changes, revisions or modifications to the contract approved MBE/WBE Utilization Plan. Any changes to the contract's approved MBE/WBE Utilization Plan must be submitted to the Office of the Contract Compliance.**

Contractor Meade, Inc.

Name Michael K. Knutson

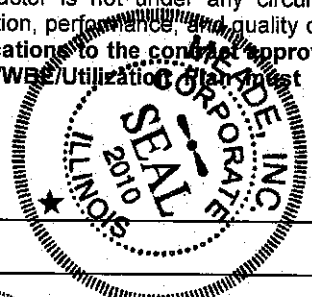
Title Vice President

9/2/16

Prime Contractor Signature



Date



**Cook County  
Office of the Chief Procurement Officer  
Identification of Subcontractor/Supplier/Subconsultant Form**

<b>OCPO ONLY:</b>	
<input type="radio"/>	<u>Disqualification</u>
<input type="radio"/>	<u>Check Complete</u>

The Bidder/Proposer/Respondent ("the Contractor") will fully complete and execute and submit an Identification of Subcontractor/Supplier/Subconsultant Form ("ISF") with each Bid, Request for Proposal, and Request for Qualification. **The Contractor must complete the ISF for each Subcontractor, Supplier or Subconsultant which shall be used on the Contract.** In the event that there are any changes in the utilization of Subcontractors, Suppliers or Subconsultants, the Contractor must file an updated ISF.

Bid/RFP/RFQ No.: 1628-15554	Date: 9/2/16
Total Bid or Proposal Amount:	Contract Title: Electrical and Mechanical Item Maintenance
Contractor: Meade, Inc.	Subcontractor/Supplier/ Subconsultant to be added or substitute: Midco Electric Supply
Authorized Contact for Contractor: Mike Knutson	Authorized Contact for Subcontractor/Supplier/ Subconsultant: Diane Quinlan
Email Address (Contractor): mkk@meade100.com	Email Address (Subcontractor): diane@midcoelectric.com
Company Address (Contractor): 6850 W. 62nd Street	Company Address (Subcontractor): 7237 W. 90th Place
City, State and Zip (Contractor): Chicago, IL 60638	City, State and Zip (Subcontractor): Bridgeview, IL 60455
Telephone and Fax (Contractor): 708-588-2594	Telephone and Fax (Subcontractor): 708-921-9998
Estimated Start and Completion Dates (Contractor): 1/1/17 - 12/31/17	Estimated Start and Completion Dates (Subcontractor): 1/1/17-12/31/17

**Note:** Upon request, a copy of all written subcontractor agreements must be provided to the OCPO.

<u>Description of Services or Supplies</u>	<u>Total Price of Subcontract for Services or Supplies</u>
material supply	\$479,502.00 100%

\$287,702.00 @ 60% credit

The subcontract documents will incorporate all requirements of the Contract awarded to the Contractor as applicable. The subcontract will in no way hinder the Subcontractor/Supplier/Subconsultant from maintaining its progress on any other contract on which it is either a Subcontractor/Supplier/Subconsultant or principal contractor. This disclosure is made with the understanding that the Contractor is not under any circumstances relieved of its abilities and obligations, and is responsible for the organization, performance, and quality of work. **This form does not approve any proposed changes, revisions or modifications to the contract approved MBE/WBE Utilization Plan. Any changes to the contract's approved MBE/WBE Utilization Plan must be submitted to the Office of the Contract Compliance.**

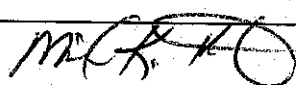
Contractor Meade, Inc.

Name Michael K. Knutson

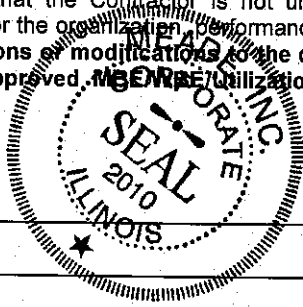
Title Vice President

9/2/16

Prime Contractor Signature



Date



**EXHIBIT 12**

**MBE/WBE UTILIZATION PLAN FORM**



OFFICE OF CONTRACT COMPLIANCE

**JACQUELINE GOMEZ**

DIRECTOR

118 N. Clark, County Building, Room 1020 • Chicago, Illinois 60602 • (312) 603-5502

**TONI PRECKWINKLE**

PRESIDENT

Cook County Board  
of Commissioners

RICHARD R. BOYKIN  
1st District

ROBERT STEELE  
2nd District

JERRY BUTLER  
3rd District

STANLEY MOORE  
4th District

DEBORAH SIMS  
5th District

JOAN PATRICIA MURPHY  
6th District

JESUS G. GARCIA  
7th District

LUIS ARROYO, JR.  
8th District

PETER N. SILVESTRI  
9th District

BRIDGET GAINER  
10th District

JOHN P. DALEY  
11th District

JOHN A. FRITCHEY  
12th District

LARRY SUFFREDIN  
13th District

GREGG GOSLIN  
14th District

TIMOTHY O. SCHNEIDER  
15th District

JEFFREY R. TOBOLSKI  
16th District

SEAN M. MORRISON  
17th District

October 5, 2016

Ms. Shannon E. Andrews  
Chief Procurement Officer  
118 N. Clark Street  
County Building-Room 1018  
Chicago, IL 60602

Re: Contract No. 1628-15554  
Electrical Mechanical Items Maintenance  
Department of Transportation and Highways

Dear Ms. Andrews:

The following bid for the above-referenced contract has been reviewed for compliance with the Minority- and Women- owned Business Enterprises (MBE/WBE) Ordinance and have been found to be responsive to the ordinance.

Bidder: Meade, Inc.  
Contract Value: \$2,877,010.70  
Contract Goal: 24% MBE, 10% WBE

<u>MBE/WBE</u>	<u>Status</u>	<u>Certifying Agency</u>	<u>Commitment</u>
Taylor Electric Company	MBE (6)	City of Chicago	24% (Direct)
Midco Electric Supply	WBE (7)	City of Chicago	10% (Direct)

The Office of Contract Compliance has been advised by the Requesting Department that no other bidders are being recommended for award. Original MBE/WBE forms were used in the determination of the responsiveness of this contract.

Sincerely,

Jacqueline Gomez  
Contract Compliance Director  
JG/ate

cc: Cho Ng, OCPO  
Noel Basquin, DOTH

**MBE/WBE UTILIZATION PLAN - FORM 1**

BIDDER/PROPOSER HEREBY STATES that all MBE/WBE firms included in this Plan are certified MBEs/WBEs by at least one of the entities listed in the General Conditions – Section 19.

**I. BIDDER/PROPOSER MBE/WBE STATUS:** (check the appropriate line)

- Bidder/Proposer is a certified MBE or WBE firm. (If so, attach copy of current Letter of Certification)
- Bidder/Proposer is a Joint Venture and one or more Joint Venture partners are certified MBEs or WBEs. (If so, attach copies of Letter(s) of Certification, a copy of Joint Venture Agreement clearly describing the role of the MBE/WBE firm(s) and its ownership interest in the Joint Venture and a completed Joint Venture Affidavit – available online at [www.cookcountylvil.gov/contractcompliance](http://www.cookcountylvil.gov/contractcompliance))
- Bidder/Proposer is not a certified MBE or WBE firm, nor a Joint Venture with MBE/WBE partners, but will utilize MBE and WBE firms either directly or indirectly in the performance of the Contract. (If so, complete Sections II below and the Letter(s) of Intent – Form 2).

**II.**  **Direct Participation of MBE/WBE Firms**       **Indirect Participation of MBE/WBE Firms**

**NOTE: Where goals have not been achieved through direct participation, Bidder/Proposer shall include documentation outlining efforts to achieve Direct Participation at the time of Bid/Proposal submission. Indirect Participation will only be considered after all efforts to achieve Direct Participation have been exhausted. Only after written documentation of Good Faith Efforts is received will Indirect Participation be considered.**

MBEs/WBEs that will perform as subcontractors/suppliers/consultants include the following:

MBE/WBE Firm: Taylor Electric Company  
 Address: 7811 S. Stony Island Ave., Chicago, IL 60649  
 E-mail: kddinkins@taylorelectric.com  
 Contact Person: Kendra Dinkins Phone: 773-346-5768  
 Dollar Amount Participation: \$ 690,500.00  
 Percent Amount of Participation: \_\_\_\_\_ \$690,500.00 @ \_\_\_\_\_ 100 %  
 \*Letter of Intent attached? Yes X No \_\_\_\_\_  
 \*Current Letter of Certification attached? Yes X No \_\_\_\_\_

MBE/WBE Firm: Midco  
 Address: 7237 W. 90th Place,  
 E-mail: diane@midcoelectric.com  
 Contact Person: Diane Quinlan Phone: 708-921-9998  
 Dollar Amount Participation: \$ 479,502.00 @ 100%  
 Percent Amount of Participation: \_\_\_\_\_ \$287,702.00 @ \_\_\_\_\_ 60 %  
 \*Letter of Intent attached? Yes X No \_\_\_\_\_  
 \*Current Letter of Certification attached? Yes X No \_\_\_\_\_

*Attach additional sheets as needed.*

**\* Letter(s) of Intent and current Letters of Certification must be submitted at the time of bid.**



**MBE/WBE LETTER OF INTENT - FORM 2**

M/WBE Firm: Taylor Electric Company

Certifying Agency: Illinois Department of Transportation

Contact Person: K. Michele Dinkins

Certification Expiration Date: 12/1/2018

Address: 7811 S. Stony Island Avenue

Ethnicity: African-American

City/State: Chicago, IL Zip: 60649

Bid/Proposal/Contract #: 1628-15554

Phone: 773-346-5767 Fax: 773-346-5659

FEIN #: 36-2791520

Email: kmdinkins@taylorelectric.com

Participation:  Direct  Indirect

Will the M/WBE firm be subcontracting any of the goods or services of this contract to another firm?

No  Yes - Please attach explanation. Proposed Subcontractor(s): \_\_\_\_\_

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/ Contract: (If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

Routine maintenance of traffic signals.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Indicate the **Dollar Amount**, **Percentage**, and the **Terms of Payment** for the above-described Commodities/ Services:

\$690,500.00 @ 100%, net 30 days

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement for the above work, conditioned upon (1) the Bidder/Proposer's receipt of a signed contract from the County of Cook; (2) Undersigned Subcontractor remaining compliant with all relevant credentials, codes, ordinances and statutes required by Contractor, Cook County, and the State to participate as a MBE/WBE firm for the above work. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

Karen Michele Dinkins  
Signature (M/WBE)

Michael K. Knutson  
Signature (Prime Bidder/Proposer)

Karen Michele Dinkins, Vice-President  
Print Name

Michael K. Knutson  
Print Name

Taylor Electric Company  
Firm Name

Meade, Inc.  
Firm Name

8/25/2016  
Date

8/29/16  
Date

Subscribed and sworn before me

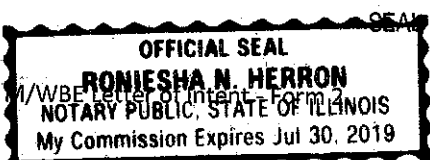
Subscribed and sworn before me

this 25 day of August, 2016.

this 29th day of August, 2016.

Notary Public Roniesha N. Herron

Notary Public Shalmar Richards





DEPARTMENT OF PROCUREMENT SERVICES

CITY OF CHICAGO

JAN 03 2014

Martha Taylor  
Taylor Electric Company  
7811 S. Stony Island  
Chicago, IL 60649

Dear Ms. Taylor:

We are pleased to inform you that Taylor Electric Company has been recertified as a **Minority Business Enterprise ("MBE")** by the City of Chicago ("City"). This **MBE** certification is valid until **12/01/2018**; however your firm's certification must be revalidated annually. In the past the City has provided you with an annual letter confirming your certification; such letters will no longer be issued. As a consequence, we require you to be even more diligent in filing your annual **No-Change Affidavit 60 days** before your annual anniversary date.

It is now your responsibility to check the City's certification directory and verify your certification status. As a condition of continued certification during the five year period stated above, you must file an annual No-Change Affidavit. Your firm's **annual No-Change Affidavit** is due by **12/01/2014, 12/01/2015, 12/01/2016, and 12/01/2017**. Please remember, you have an affirmative duty to file your **No-Change Affidavit 60 days** prior to the date of expiration. Failure to file your annual No-Change Affidavit may result in the suspension or rescission of your certification.

Your firm's five year certification will expire on **12/01/2018**. You have an affirmative duty to file for recertification **60 days** prior to the date of the five year anniversary date. Therefore, you must file for recertification by **10/01/2018**.

It is important to note that you also have an ongoing affirmative duty to notify the City of any changes in ownership or control of your firm, or any other fact affecting your firm's eligibility for certification **within 10 days** of such change. These changes may include but are not limited to a change of address, change of business structure, change in ownership or ownership structure, change of business operations, gross receipts and or personal net worth that exceed the program threshold. Failure to provide the City with timely notice of such changes may result in the suspension or rescission of your certification. In addition, you may be liable for civil penalties under Chapter 1-22, "False Claims", of the Municipal Code of Chicago.

Please note – you shall be deemed to have had your certification lapse and will be ineligible to participate as a **MBE** if you fail to:

DM

- File your annual No-Change Affidavit within the required time period;
- Provide financial or other records requested pursuant to an audit within the required time period;
- Notify the City of any changes affecting your firm's certification **within 10 days** of such change; or
- File your recertification within the required time period.

Please be reminded of your contractual obligation to cooperate with the City with respect to any reviews, audits or investigation of its contracts and affirmative action programs. We strongly encourage you to assist us in maintaining the integrity of our programs by reporting instances or suspicions of fraud or abuse to the **City's Inspector General** at [chicagoinspectorgeneral.org](http://chicagoinspectorgeneral.org), or **866-IG-TIPLINE (866-448-4754)**.

Be advised that if you or your firm is found to be involved in certification, bidding and/or contractual fraud or abuse, the City will pursue decertification and debarment. In addition to any other penalty imposed by law, any person who knowingly obtains, or knowingly assists another in obtaining a contract with the City by falsely representing the individual or entity, or the individual or entity assisted is guilty of a misdemeanor, punishable by incarceration in the county jail for a period not to exceed six months, or a fine of not less than \$5,000 and not more than \$10,000 or both.

Your firm's name will be listed in the City's Directory of Minority and Women-Owned Business Enterprises in the specialty area(s) of:

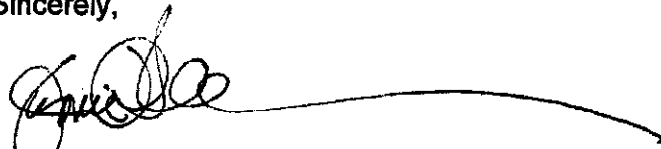
**NAICS Code(s):**

**238210 - Electrical Contractors and Other Wiring Installation Contractors**

Your firm's participation on City contracts will be credited only toward **Minority Business Enterprise** goals in your area(s) specialty. While your participation on City contracts is not limited to your area of specialty, credit toward goals will be given only for work that is self-performed and providing a commercially useful function that is done in the approved specialty category.

Thank you for your interest in the City's Minority and Women-Owned Business Enterprise (MBE/WBE) Program.

Sincerely,



Jamie L. Rhee  
Chief Procurement Officer

JLR/ha

**MBE/WBE LETTER OF INTENT - FORM 2**

M/WBE Firm: Midco Electric Supply

Certifying Agency: City of Chicago

Contact Person: Diane Quinlan

Certification Expiration Date: 7/15/2018

Address: 7237 W. 90th Place

Ethnicity: Caucasian

City/State: Bridgeview, IL Zip: 60455

Bid/Proposal/Contract #: 1628-15554

Phone: 708-921-9998 Fax: 708-459-4183

FEIN #: 36-3861320

Email: diane@midcoelectric.com

Participation:  Direct  Indirect

Will the M/WBE firm be subcontracting any of the goods or services of this contract to another firm?

No  Yes - Please attach explanation. Proposed Subcontractor(s): \_\_\_\_\_

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/ Contract: (If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

Material supplier for routine and non-routine items.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Indicate the **Dollar Amount**, **Percentage**, and the **Terms of Payment** for the above-described Commodities/ Services:

\$479,502.00 @ 100% \$287,702.00 % 60% credit

Net 30 Days

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement for the above work, conditioned upon (1) the Bidder/Proposer's receipt of a signed contract from the County of Cook; (2) Undersigned Subcontractor remaining compliant with all relevant credentials, codes, ordinances and statutes required by Contractor, Cook County, and the State to participate as a MBE/WBE firm for the above work. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

Diane Quinlan  
Signature (M/WBE)

Michael K. Knutson  
Signature (Prime Bidder/Proposer)

Diane Quinlan  
Print Name

Michael K. Knutson  
Print Name

Midco Electric Supply  
Firm Name

Meade, Inc.  
Firm Name

8/29/16  
Date

8/29/16  
Date

Subscribed and sworn before me

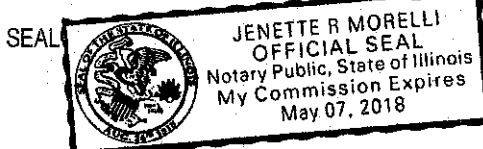
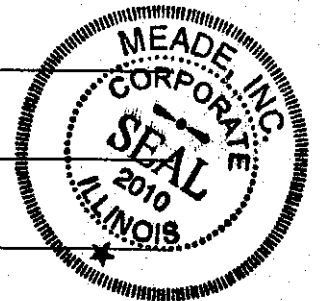
Subscribed and sworn before me

this 29th day of August, 2016

this 29th day of August, 2016

Notary Public Jenette R Morelli

Notary Public Shalmar Richards





DEPARTMENT OF PROCUREMENT SERVICES  
CITY OF CHICAGO

AUG 02 2013

Diane Quinlan  
Midco Electric Supply, Inc.  
7237 W. 90<sup>th</sup> Place  
Bridgeview, IL 60445

Dear Ms. Quinlan:

We are pleased to inform you that **Midco Electric Supply, Inc.** has been recertified as a **Women Business Enterprise ("WBE")** by the City of Chicago ("City"). This **WBE** certification is valid until **07/15/2018**; however your firm's certification must be revalidated annually. In the past the City has provided you with an annual letter confirming your certification; such letters will no longer be issued. As a consequence, we require you to be even more diligent in filing your **annual No-Change Affidavit 60 days** before your annual anniversary date.

It is now your responsibility to check the City's certification directory and verify your certification status. As a condition of continued certification during the five year period stated above, you must file an annual No-Change Affidavit. Your firm's **annual No-Change Affidavit** is due by **07/15/2014, 07/15/2015, 07/15/2016, and 07/15/2017**. Please remember, you have an affirmative duty to file your **No-Change Affidavit 60 days** prior to the date of expiration. Failure to file your annual No-Change Affidavit may result in the suspension or rescission of your certification.

Your firm's five year certification will expire on **07/15/2018**. You have an affirmative duty to file for recertification **60 days** prior to the date of the five year anniversary date. Therefore, you must file for recertification by **05/15/2018**.

It is important to note that you also have an ongoing affirmative duty to notify the City of any changes in ownership or control of your firm, or any other fact affecting your firm's eligibility for certification **within 10 days** of such change. These changes may include but are not limited to a change of address, change of business structure, change in ownership or ownership structure, change of business operations, gross receipts and or personal net worth that exceed the program threshold. Failure to provide the City with timely notice of such changes may result in the suspension or rescission of your certification. In addition, you may be liable for civil penalties under Chapter 1-22, "False Claims", of the Municipal Code of Chicago.

Please note -- you shall be deemed to have had your certification lapse and will be ineligible to participate as a **WBE** if you fail to:

- File your annual No-Change Affidavit within the required time period;
- Provide financial or other records requested pursuant to an audit within the required time period;
- Notify the City of any changes affecting your firm's certification within 10 days of such change; or
- File your recertification within the required time period.

Please be reminded of your contractual obligation to cooperate with the City with respect to any reviews, audits or investigation of its contracts and affirmative action programs. We strongly encourage you to assist us in maintaining the integrity of our programs by reporting instances or suspicions of fraud or abuse to the City's Inspector General at [chicagoinspectorgeneral.org](http://chicagoinspectorgeneral.org), or 866-IG-TIPLINE (866-448-4754).

Be advised that if you or your firm is found to be involved in certification, bidding and/or contractual fraud or abuse, the City will pursue decertification and debarment. In addition to any other penalty imposed by law, any person who knowingly obtains, or knowingly assists another in obtaining a contract with the City by falsely representing the individual or entity, or the individual or entity assisted is guilty of a misdemeanor, punishable by incarceration in the county jail for a period not to exceed six months, or a fine of not less than \$5,000 and not more than \$10,000 or both.

Your firm's name will be listed in the City's Directory of Minority and Women-Owned Business Enterprises in the specialty area(s) of:

**NAICS Code(s):**

**423610 – Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers**

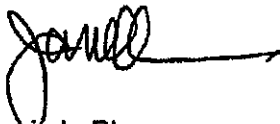
**423690 – Other Electronic Parts and Equipment Merchant Wholesalers**

**423710 – Hardware Merchant Wholesalers**

Your firm's participation on City contracts will be credited only toward Women Business Enterprise goals in your area(s) specialty. While your participation on City contracts is not limited to your area of specialty, credit toward goals will be given only for work that is self-performed and providing a commercially useful function that is done in the approved specialty category.

Thank you for your interest in the City's Minority and Women-Owned Business Enterprise (MBE/WBE) Program.

Sincerely,



Jamie L. Rhee  
Chief Procurement Officer

JLR/dw

**PETITION FOR REDUCTION/WAIVER OF MBE/WBE PARTICIPATION – FORM 3**

**A. BIDDER/PROPOSER HEREBY REQUESTS:**

- FULL MBE WAIVER                       FULL WBE WAIVER
- REDUCTION (PARTIAL MBE and/or WBE PARTICIPATION)

\_\_\_\_\_ % of Reduction for MBE Participation  
 \_\_\_\_\_ % of Reduction for WBE Participation

**B. REASON FOR FULL/REDUCTION WAIVER REQUEST**

Bidder/Proposer shall check each item applicable to its reason for a waiver request. Additionally, supporting documentation shall be submitted with this request.

- (1) Lack of sufficient qualified MBEs and/or WBEs capable of providing the goods or services required by the contract. **(Please explain)**
- (2) The specifications and necessary requirements for performing the contract make it impossible or economically infeasible to divide the contract to enable the contractor to utilize MBEs and/or WBEs in accordance with the applicable participation. **(Please explain)**
- (3) Price(s) quoted by potential MBEs and/or WBEs are above competitive levels and increase cost of doing business and would make acceptance of such MBE and/or WBE bid economically impracticable, taking into consideration the percentage of total contract price represented by such MBE and/or WBE bid. **(Please explain)**
- (4) There are other relevant factors making it impossible or economically infeasible to utilize MBE and/or WBE firms. **(Please explain)**

**C. GOOD FAITH EFFORTS TO OBTAIN MBE/WBE PARTICIPATION**

- (1) Made timely written solicitation to identified MBEs and WBEs for utilization of goods and/or services; and provided MBEs and WBEs with a timely opportunity to review and obtain relevant specifications, terms and conditions of the proposal to enable MBEs and WBEs to prepare an informed response to solicitation. **(Attach of copy written solicitations made)**
- (2) Used the services and assistance of the Office of Contract Compliance staff. **(Please explain)**
- (3) Timely notified and used the services and assistance of community, minority and women business organizations. **(Attach of copy written solicitations made)**
- (4) Followed up on initial solicitation of MBEs and WBEs to determine if firms are interested in doing business. **(Attach supporting documentation)**
- (5) Engaged MBEs & WBEs for direct/indirect participation. **(Please explain)**

**D. OTHER RELEVANT INFORMATION**

Attach any other documentation relative to Good Faith Efforts in complying with MBE/WBE participation.

**EXHIBIT 13**

**ECONOMIC DISCLOSURE STATEMENT**



**COOK COUNTY  
ECONOMIC DISCLOSURE STATEMENT  
AND EXECUTION DOCUMENT  
INDEX**

<b>Section</b>	<b>Description</b>	<b>Pages</b>
1	Instructions for Completion of EDS	EDS i - ii
2	Certifications	EDS 1- 2
3	Economic and Other Disclosures, Affidavit of Child Support Obligations, Disclosure of Ownership Interest and Familial Relationship Disclosure Form	EDS 3 - 11
4	Cook County Affidavit for Wage Theft Ordinance	EDS 12-13
5	Contract and EDS Execution Page	EDS 14-19
6	Cook County Signature Page	EDS 20

**SECTION 1**  
**INSTRUCTIONS FOR COMPLETION OF**  
**ECONOMIC DISCLOSURE STATEMENT AND EXECUTION DOCUMENT**

This Economic Disclosure Statement and Execution Document ("EDS") is to be completed and executed by every Bidder on a County contract, every Proposer responding to a Request for Proposals, and every Respondent responding to a Request for Qualifications, and others as required by the Chief Procurement Officer. The execution of the EDS shall serve as the execution of a contract awarded by the County. The Chief Procurement Officer reserves the right to request that the Bidder or Proposer, or Respondent provide an updated EDS on an annual basis.

**Definitions.** Terms used in this EDS and not otherwise defined herein shall have the meanings given to such terms in the Instructions to Bidders, General Conditions, Request for Proposals, Request for Qualifications, as applicable.

*Affiliate* means a person that directly or indirectly through one or more intermediaries, Controls is Controlled by, or is under common Control with the Person specified.

*Applicant* means a person who executes this EDS.

*Bidder* means any person who submits a Bid.

*Code* means the Code of Ordinances, Cook County, Illinois available on municode.com.

*Contract* shall include any written document to make Procurements by or on behalf of Cook County.

*Contractor or Contracting Party* means a person that enters into a Contract with the County.

*Control* means the unfettered authority to directly or indirectly manage governance, administration, work, and all other aspects of a business.

*EDS* means this complete Economic Disclosure Statement and Execution Document, including all sections listed in the Index and any attachments.

*Joint Venture* means an association of two or more Persons proposing to perform a for-profit business enterprise. Joint Ventures must have an agreement in writing specifying the terms and conditions of the relationship between the partners and their relationship and respective responsibility for the Contract

*Lobby or lobbying* means to, for compensation, attempt to influence a County official or County employee with respect to any County matter.

*Lobbyist* means any person who lobbies.

*Person or Persons* means any individual, corporation, partnership, Joint Venture, trust, association, Limited Liability Company, sole proprietorship or other legal entity.

*Prohibited Acts* means any of the actions or occurrences which form the basis for disqualification under the Code, or under the Certifications hereinafter set forth.

*Proposal* means a response to an RFP.

*Proposer* means a person submitting a Proposal.

*Response* means response to an RFQ.

*Respondent* means a person responding to an RFQ.

*RFP* means a Request for Proposals issued pursuant to this Procurement Code.

*RFQ* means a Request for Qualifications issued to obtain the qualifications of interested parties.

**INSTRUCTIONS FOR COMPLETION OF  
ECONOMIC DISCLOSURE STATEMENT AND EXECUTION DOCUMENT**

**Section 1: Instructions.** Section 1 sets forth the instructions for completing and executing this EDS.

**Section 2: Certifications.** Section 2 sets forth certifications that are required for contracting parties under the Code and other applicable laws. Execution of this EDS constitutes a warranty that all the statements and certifications contained, and all the facts stated, in the Certifications are true, correct and complete as of the date of execution.

**Section 3: Economic and Other Disclosures Statement.** Section 3 is the County's required Economic and Other Disclosures Statement form. Execution of this EDS constitutes a warranty that all the information provided in the EDS is true, correct and complete as of the date of execution, and binds the Applicant to the warranties, representations, agreements and acknowledgements contained therein.

**Required Updates.** The Applicant is required to keep all information provided in this EDS current and accurate. In the event of any change in the information provided, including but not limited to any change which would render inaccurate or incomplete any certification or statement made in this EDS, the Applicant shall supplement this EDS up to the time the County takes action, by filing an amended EDS or such other documentation as is required.

**Additional Information.** The County's Governmental Ethics and Campaign Financing Ordinances impose certain duties and obligations on persons or entities seeking County contracts, work, business, or transactions, and the Applicant is expected to comply fully with these ordinances. For further information please contact the Director of Ethics at (312) 603-4304 (69 W. Washington St. Suite 3040, Chicago, IL 60602) or visit the web-site at [cookcountyil.gov/ethics-board-of](http://cookcountyil.gov/ethics-board-of).

**Authorized Signers of Contract and EDS Execution Page.** If the Applicant is a corporation, the President and Secretary must execute the EDS. In the event that this EDS is executed by someone other than the President, attach hereto a certified copy of that section of the Corporate By-Laws or other authorization by the Corporation, satisfactory to the County that permits the person to execute EDS for said corporation. If the corporation is not registered in the State of Illinois, a copy of the Certificate of Good Standing from the state of incorporation must be submitted with this Signature Page.

If the Applicant is a partnership or joint venture, all partners or joint venturers must execute the EDS, unless one partner or joint venture has been authorized to sign for the partnership or joint venture, in which case, the partnership agreement, resolution or evidence of such authority satisfactory to the Office of the Chief Procurement Officer must be submitted with this Signature Page.

If the Applicant is a member-managed LLC all members must execute the EDS, unless otherwise provided in the operating agreement, resolution or other corporate documents. If the Applicant is a manager-managed LLC, the manager(s) must execute the EDS. The Applicant must attach either a certified copy of the operating agreement, resolution or other authorization, satisfactory to the County, demonstrating such person has the authority to execute the EDS on behalf of the LLC. If the LLC is not registered in the State of Illinois, a copy of a current Certificate of Good Standing from the state of incorporation must be submitted with this Signature Page.

If the Applicant is a Sole Proprietorship, the sole proprietor must execute the EDS.

A "Partnership" "Joint Venture" or "Sole Proprietorship" operating under an Assumed Name must be registered with the Illinois county in which it is located, as provided in 805 ILCS 405 (2012), and documentation evidencing registration must be submitted with the EDS.

**SECTION 2****CERTIFICATIONS**

THE FOLLOWING CERTIFICATIONS ARE MADE PURSUANT TO STATE LAW AND THE CODE. THE APPLICANT IS CAUTIONED TO CAREFULLY READ THESE CERTIFICATIONS PRIOR TO SIGNING THE SIGNATURE PAGE. SIGNING THE SIGNATURE PAGE SHALL CONSTITUTE A WARRANTY BY THE APPLICANT THAT ALL THE STATEMENTS, CERTIFICATIONS AND INFORMATION SET FORTH WITHIN THESE CERTIFICATIONS ARE TRUE, COMPLETE AND CORRECT AS OF THE DATE THE SIGNATURE PAGE IS SIGNED. THE APPLICANT IS NOTIFIED THAT IF THE COUNTY LEARNS THAT ANY OF THE FOLLOWING CERTIFICATIONS WERE FALSELY MADE, THAT ANY CONTRACT ENTERED INTO WITH THE APPLICANT SHALL BE SUBJECT TO TERMINATION.

**A. PERSONS AND ENTITIES SUBJECT TO DISQUALIFICATION**

No person or business entity shall be awarded a contract or sub-contract, for a period of five (5) years from the date of conviction or entry of a plea or admission of guilt, civil or criminal, if that person or business entity:

- 1) Has been convicted of an act committed, within the State of Illinois, of bribery or attempting to bribe an officer or employee of a unit of state, federal or local government or school district in the State of Illinois in that officer's or employee's official capacity;
- 2) Has been convicted by federal, state or local government of an act of bid-rigging or attempting to rig bids as defined in the Sherman Anti-Trust Act and Clayton Act. Act. 15 U.S.C. Section 1 *et seq.*;
- 3) Has been convicted of bid-rigging or attempting to rig bids under the laws of federal, state or local government;
- 4) Has been convicted of an act committed, within the State, of price-fixing or attempting to fix prices as defined by the Sherman Anti-Trust Act and the Clayton Act. 15 U.S.C. Section 1, *et seq.*;
- 5) Has been convicted of price-fixing or attempting to fix prices under the laws the State;
- 6) Has been convicted of defrauding or attempting to defraud any unit of state or local government or school district within the State of Illinois;
- 7) Has made an admission of guilt of such conduct as set forth in subsections (1) through (6) above which admission is a matter of record, whether or not such person or business entity was subject to prosecution for the offense or offenses admitted to; or
- 8) Has entered a plea of *nolo contendere* to charge of bribery, price-fixing, bid-rigging, or fraud, as set forth in sub-paragraphs (1) through (6) above.

In the case of bribery or attempting to bribe, a business entity may not be awarded a contract if an official, agent or employee of such business entity committed the Prohibited Act on behalf of the business entity and pursuant to the direction or authorization of an officer, director or other responsible official of the business entity, and such Prohibited Act occurred within three years prior to the award of the contract. In addition, a business entity shall be disqualified if an owner, partner or shareholder controlling, directly or indirectly, 20% or more of the business entity, or an officer of the business entity has performed any Prohibited Act within five years prior to the award of the Contract.

**THE APPLICANT HEREBY CERTIFIES THAT:** The Applicant has read the provisions of Section A, Persons and Entities Subject to Disqualification, that the Applicant has not committed any Prohibited Act set forth in Section A, and that award of the Contract to the Applicant would not violate the provisions of such Section or of the Code.

**B. BID-RIGGING OR BID ROTATING**

**THE APPLICANT HEREBY CERTIFIES THAT:** In accordance with 720 ILCS 5/33 E-11, neither the Applicant nor any Affiliated Entity is barred from award of this Contract as a result of a conviction for the violation of State laws prohibiting bid-rigging or bid rotating.

**C. DRUG FREE WORKPLACE ACT**

**THE APPLICANT HEREBY CERTIFIES THAT:** The Applicant will provide a drug free workplace, as required by (30 ILCS 580/3).

**D. DELINQUENCY IN PAYMENT OF TAXES**

**THE APPLICANT HEREBY CERTIFIES THAT:** *The Applicant is not an owner or a party responsible for the payment of any tax or fee administered by Cook County, by a local municipality, or by the Illinois Department of Revenue, which such tax or fee is delinquent, such as bar award of a contract or subcontract pursuant to the Code, Chapter 34, Section 34-171.*

**E. HUMAN RIGHTS ORDINANCE**

No person who is a party to a contract with Cook County ("County") shall engage in unlawful discrimination or sexual harassment against any individual in the terms or conditions of employment, credit, public accommodations, housing, or provision of County facilities, services or programs (Code Chapter 42, Section 42-30 *et seq.*).

**F. ILLINOIS HUMAN RIGHTS ACT**

**THE APPLICANT HEREBY CERTIFIES THAT:** *It is in compliance with the Illinois Human Rights Act (775 ILCS 5/2-105), and agrees to abide by the requirements of the Act as part of its contractual obligations.*

**G. INSPECTOR GENERAL (COOK COUNTY CODE, CHAPTER 34, SECTION 34-174 and Section 34-250)**

The Applicant has not willfully failed to cooperate in an investigation by the Cook County Independent Inspector General or to report to the Independent Inspector General any and all information concerning conduct which they know to involve corruption, or other criminal activity, by another county employee or official, which concerns his or her office of employment or County related transaction.

The Applicant has reported directly and without any undue delay any suspected or known fraudulent activity in the County's Procurement process to the Office of the Cook County Inspector General.

**H. CAMPAIGN CONTRIBUTIONS (COOK COUNTY CODE, CHAPTER 2, SECTION 2-585)**

**THE APPLICANT CERTIFIES THAT:** It has read and shall comply with the Cook County's Ordinance concerning campaign contributions, which is codified at Chapter 2, Division 2, Subdivision II, Section 585, and can be read in its entirety at [www.municode.com](http://www.municode.com).

**I. GIFT BAN, (COOK COUNTY CODE, CHAPTER 2, SECTION 2-574)**

**THE APPLICANT CERTIFIES THAT:** It has read and shall comply with the Cook County's Ordinance concerning receiving and soliciting gifts and favors, which is codified at Chapter 2, Division 2, Subdivision II, Section 574, and can be read in its entirety at [www.municode.com](http://www.municode.com).

**J. LIVING WAGE ORDINANCE PREFERENCE (COOK COUNTY CODE, CHAPTER 34, SECTION 34-160;**

Unless expressly waived by the Cook County Board of Commissioners, the Code requires that a living wage must be paid to individuals employed by a Contractor which has a County Contract and by all subcontractors of such Contractor under a County Contract, throughout the duration of such County Contract. The amount of such living wage is annually by the Chief Financial Officer of the County, and shall be posted on the Chief Procurement Officer's website.

The term "Contract" as used in Section 4, I, of this EDS, specifically excludes contracts with the following:

- 1) Not-For Profit Organizations (defined as a corporation having tax exempt status under Section 501(C)(3) of the United State Internal Revenue Code and recognized under the Illinois State not-for-profit law);
- 2) Community Development Block Grants;
- 3) Cook County Works Department;
- 4) Sheriff's Work Alternative Program; and
- 5) Department of Correction inmates.

**SECTION 3**

**REQUIRED DISCLOSURES**

**1. DISCLOSURE OF LOBBYIST CONTACTS**

List all persons that have made lobbying contacts on your behalf with respect to this contract:

Name	Address
N/A	

**2. LOCAL BUSINESS PREFERENCE STATEMENT (CODE, CHAPTER 34, SECTION 34-230)**

*Local business* means a Person, including a foreign corporation authorized to transact business in Illinois, having a bona fide establishment located within the County at which it is transacting business on the date when a Bid is submitted to the County, and which employs the majority of its regular, full-time work force within the County. A Joint Venture shall constitute a Local Business if one or more Persons that qualify as a "Local Business" hold interests totaling over 50 percent in the Joint Venture, even if the Joint Venture does not, at the time of the Bid submittal, have such a bona fide establishment within the County.

a) Is Applicant a "Local Business" as defined above?  
 Yes:  X  No: \_\_\_\_\_

b) If yes, list business addresses within Cook County:  
6850 W. 62nd St, Chicago, IL  
9550 W. 55th Street, Suite A, McCook, IL 60525  
977 W. Cermak Road, Chicago, IL 60608  
5401 W. Harrison, Chicago, IL 60644

c) Does Applicant employ the majority of its regular full-time workforce within Cook County?  
 Yes:  X  No: \_\_\_\_\_

**3. THE CHILD SUPPORT ENFORCEMENT ORDINANCE (CODE, CHAPTER 34, SECTION 34-172)**

Every Applicant for a County Privilege shall be in full compliance with any child support order before such Applicant is entitled to receive or renew a County Privilege. When delinquent child support exists, the County shall not issue or renew any County Privilege, and may revoke any County Privilege.

**All Applicants are required to review the Cook County Affidavit of Child Support Obligations attached to this EDS (EDS-5) and complete the Affidavit, based on the instructions in the Affidavit.**

**4. REAL ESTATE OWNERSHIP DISCLOSURES.**

The Applicant must indicate by checking the appropriate provision below and providing all required information that either:

- a) The following is a complete list of all real estate owned by the Applicant in Cook County:

PERMANENT INDEX NUMBER(S): See attached

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
**(ATTACH SHEET IF NECESSARY TO LIST ADDITIONAL INDEX NUMBERS)**

**OR:**

- b) \_\_\_\_\_ The Applicant owns no real estate in Cook County.

**5. EXCEPTIONS TO CERTIFICATIONS OR DISCLOSURES.**

If the Applicant is unable to certify to any of the Certifications or any other statements contained in this EDS and not explained elsewhere in this EDS, the Applicant must explain below:

\_\_\_\_\_  
\_\_\_\_\_

If the letters, "NA", the word "None" or "No Response" appears above, or if the space is left blank, it will be conclusively presumed that the Applicant certified to all Certifications and other statements contained in this EDS.

## Cook County Real Estate Tax Log

Property Number	Property Address
16-16-301-009-0000	5419 W Harrison Street
16-16-301-017-0000	5333 W Harrison Street
16-16-301-018-0000	5331 W Harrison Street
16-16-301-019-0000	5329 W Harrison Street
16-16-301-020-0000	5325 W Harrison Street
16-16-301-021-0000	5323 W Harrison Street
16-16-301-022-0000	5321 W Harrison Street
16-16-301-025-0000	5313 W Harrison Street
16-16-301-026-0000	5309 W Harrison Street
16-16-301-046-0000	5417 W Harrison Street
16-16-301-048-0000	5401 W Harrison Street
16-16-301-050-0000	1300 W Flounoy Street
16-16-301-051-0000	1336 W Flounoy Street
16-16-301-052-0000	5337 W Harrison Street
16-16-301-053-0000	1350 W Flounoy Street
19-18-303-005-0000	
19-18-303-006-0000	
19-18-303-007-0000	

COMMON ADDRESS: 6850 W. 62nd STREET, CHICAGO IL 60638



**COOK COUNTY DISCLOSURE OF OWNERSHIP INTEREST STATEMENT**

The Cook County Code of Ordinances (§2-610 *et seq.*) requires that any Applicant for any County Action must disclose information concerning ownership interests in the Applicant. This Disclosure of Ownership Interest Statement must be completed with all information current as of the date this Statement is signed. Furthermore, this Statement must be kept current, by filing an amended Statement, until such time as the County Board or County Agency shall take action on the application. The information contained in this Statement will be maintained in a database and made available for public viewing.

If you are asked to list names, but there are no applicable names to list, you must state NONE. An incomplete Statement will be returned and any action regarding this contract will be delayed. A failure to fully comply with the ordinance may result in the action taken by the County Board or County Agency being voided.

"Applicant" means any Entity or person making an application to the County for any County Action.

"County Action" means any action by a County Agency, a County Department, or the County Board regarding an ordinance or ordinance amendment, a County Board approval, or other County agency approval, with respect to contracts, leases, or sale or purchase of real estate.

"Person" "Entity" or "Legal Entity" means a sole proprietorship, corporation, partnership, association, business trust, estate, two or more persons having a joint or common interest, trustee of a land trust, other commercial or legal entity or any beneficiary or beneficiaries thereof.

This Disclosure of Ownership Interest Statement must be submitted by :

1. An Applicant for County Action and
2. A Person that holds stock or a beneficial interest in the Applicant and is listed on the Applicant's Statement (a "Holder") must file a Statement and complete #1 only under **Ownership Interest Declaration**.

Please print or type responses clearly and legibly. Add additional pages if needed, being careful to identify each portion of the form to which each additional page refers.

This Statement is being made by the  Applicant or  Stock/Beneficial Interest Holder

This Statement is an:  Original Statement or  Amended Statement

**Identifying Information:**

Name Meade, Inc.

D/B/A: \_\_\_\_\_

FEIN NO.: 27-4060761

Street Address: 6850 W. 62nd Street

City: Chicago

State: IL

Zip Code: 60638

Phone No.: 708-588-2594

Fax Number: 708-588-6228

Email: mkk@meade100.com

Cook County Business Registration Number: \_\_\_\_\_

(Sole Proprietor, Joint Venture Partnership)

Corporate File Number (if applicable): 70129892

**Form of Legal Entity:**

Sole Proprietor  Partnership  Corporation  Trustee of Land Trust

Business Trust  Estate  Association  Joint Venture

Other (describe) \_\_\_\_\_

**Ownership Interest Declaration:**

1. List the name(s), address, and percent ownership of each Person having a legal or beneficial interest (including ownership) of more than five percent (5%) in the Applicant/Holder.

Name	Address	Percentage Interest in Applicant/Holder
L & H Company, Inc.	2215 York Rd., Ste 304, Oakbrook, IL 60523	100% (parent company)

**COOK COUNTY DISCLOSURE OF OWNERSHIP INTEREST STATEMENT**

The Cook County Code of Ordinances (§2-610 *et seq.*) requires that any Applicant for any County Action must disclose information concerning ownership interests in the Applicant. This Disclosure of Ownership Interest Statement must be completed with all information current as of the date this Statement is signed. Furthermore, this Statement must be kept current, by filing an amended Statement, until such time as the County Board or County Agency shall take action on the application. The information contained in this Statement will be maintained in a database and made available for public viewing.

If you are asked to list names, but there are no applicable names to list, you must state NONE. An incomplete Statement will be returned and any action regarding this contract will be delayed. A failure to fully comply with the ordinance may result in the action taken by the County Board or County Agency being voided.

"Applicant" means any Entity or person making an application to the County for any County Action.

"County Action" means any action by a County Agency, a County Department, or the County Board regarding an ordinance or ordinance amendment, a County Board approval, or other County agency approval, with respect to contracts, leases, or sale or purchase of real estate.

"Person" "Entity" or "Legal Entity" means a sole proprietorship, corporation, partnership, association, business trust, estate, two or more persons having a joint or common interest, trustee of a land trust, other commercial or legal entity or any beneficiary or beneficiaries thereof.

This Disclosure of Ownership Interest Statement must be submitted by :

1. An Applicant for County Action and
2. A Person that holds stock or a beneficial interest in the Applicant and is listed on the Applicant's Statement (a "Holder") must file a Statement and complete #1 only under **Ownership Interest Declaration**.

Please print or type responses clearly and legibly. Add additional pages if needed, being careful to identify each portion of the form to which each additional page refers.

This Statement is being made by the  Applicant or  Stock/Beneficial Interest Holder

This Statement is an:  Original Statement or  Amended Statement

**Identifying Information:**

Name L & H Co., Inc.- parent company

D/B/A: \_\_\_\_\_ FEIN NO.: 36-3097857

Street Address: 2215 York Rd., Suite 304, Oakbrook, IL 60523

City: Oakbrook State: IL Zip Code: 60523

Phone No.: 708-588-2543 Fax Number: 708-588-6228 Email: dal@meade100.com

Cook County Business Registration Number: \_\_\_\_\_  
(Sole Proprietor, Joint Venture Partnership)

Corporate File Number (if applicable): F6060-183-6

**Form of Legal Entity:**

- Sole Proprietor  Partnership  Corporation  Trustee of Land Trust  
 Business Trust  Estate  Association  Joint Venture  
 Other (describe) \_\_\_\_\_

**Ownership Interest Declaration:**

1. List the name(s), address, and percent ownership of each Person having a legal or beneficial interest (including ownership) of more than five percent (5%) in the Applicant/Holder.

Name	Address	Percentage Interest in Applicant/Holder
Bonita L. Hay	2215 York Rd., Ste 304, Oakbrook, IL 60523	6.08%
Nicole L. Lizzadro Kelley	2215 York Rd., Ste 304, Oakbrook, IL 60523	7.99%
Anthony C. Lizzadro	2215 York Rd., Ste 304, Oakbrook, IL 60523	5.33
John S. Lizzadro, Jr.	2215 York Rd., Ste 304, Oakbrook, IL 60523	5.96
Louis L. Lizzadro	2215 York Rd., Ste 304, Oakbrook, IL 60523	6.22

2. If the interest of any Person listed in (1) above is held as an agent or agents, or a nominee or nominees, list the name and address of the principal on whose behalf the interest is held.

Name of Agent/Nominee	Name of Principal	Principal's Address

3. Is the Applicant constructively controlled by another person or Legal Entity? [ ] Yes [ X ] No

If yes, state the name, address and percentage of beneficial interest of such person, and the relationship under which such control is being or may be exercised.

Name	Address	Percentage of Beneficial Interest	Relationship

**Corporate Officers, Members and Partners Information:**

For all corporations, list the names, addresses, and terms for all corporate officers. For all limited liability companies, list the names, addresses for all members. For all partnerships and joint ventures, list the names, addresses, for each partner or joint venture.

Name	Address	Title (specify title of Office, or whether manager or partner/joint venture)	Term of Office
See attached Corporate Resolution. Term is not applicable.			

**Declaration (check the applicable box):**

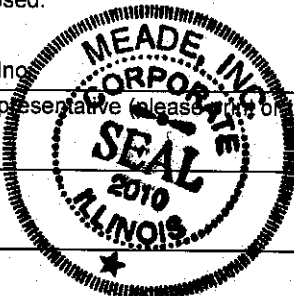
[ X ] I state under oath that the Applicant has withheld no disclosure as to ownership interest in the Applicant nor reserved any information, data or plan as to the intended use or purpose for which the Applicant seeks County Board or other County Agency action.

[ ] I state under oath that the Holder has withheld no disclosure as to ownership interest nor reserved any information required to be disclosed.

Michael K. Knutson on behalf of Meade, Inc.  
Name of Authorized Applicant/Holder Representative (please print or type)

*Michael K. Knutson*  
Signature

mkk@meade100.com  
E-mail address



Vice President

Title

9/2/16

Date

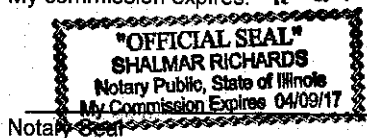
708-588-6002

Phone Number

My commission expires: 4/9/17

Subscribed to and sworn before me this 2nd day of Sept., 2016

*Shalmar Richards*  
Notary Public Signature





COOK COUNTY BOARD OF ETHICS
69 W. WASHINGTON STREET, SUITE 3040
CHICAGO, ILLINOIS 60602
312/603-4304 Office 312/603-9988 Fax

FAMILIAL RELATIONSHIP DISCLOSURE PROVISION

Nepotism Disclosure Requirement:

Doing a significant amount of business with the County requires that you disclose to the Board of Ethics the existence of any familial relationships with any County employee or any person holding elective office in the State of Illinois, the County, or in any municipality within the County.

If you are unsure of whether the business you do with the County or a County agency will cross this threshold, err on the side of caution by completing the attached familial disclosure form because, among other potential penalties, any person found guilty of failing to make a required disclosure or knowingly filing a false, misleading, or incomplete disclosure will be prohibited from doing any business with the County for a period of three years.

The person that is doing business with the County must disclose his or her familial relationships. If the person on the County lease or contract or purchasing from or selling to the County is a business entity, then the business entity must disclose the familial relationships of the individuals who are and, during the year prior to doing business with the County, were:

- its board of directors,
its officers,
its employees or independent contractors responsible for the general administration of the entity,
its agents authorized to execute documents on behalf of the entity, and
its employees who directly engage or engaged in doing work with the County on behalf of the entity.

Do not hesitate to contact the Board of Ethics at (312) 603-4304 for assistance in determining the scope of any required familial relationship disclosure.

Additional Definitions:

"Familial relationship" means a person who is a spouse, domestic partner or civil union partner of a County employee or State, County or municipal official, or any person who is related to such an employee or official, whether by blood, marriage or adoption, as a:

- Parent, Child, Brother, Sister, Aunt, Uncle, Niece, Nephew, Grandparent, Grandchild, Father-in-law, Mother-in-law, Son-in-law, Daughter-in-law, Brother-in-law, Sister-in-law, Stepfather, Stepmother, Stepson, Stepdaughter, Stepbrother, Stepsister, Half-brother, Half-sister



**COOK COUNTY BOARD OF ETHICS  
FAMILIAL RELATIONSHIP DISCLOSURE FORM**

- The Person Doing Business with the County is an individual and there is a familial relationship between this individual and at least one Cook County employee and/or a person or persons holding elective office in the State of Illinois, Cook County, and/or any municipality within Cook County. **The familial relationships are as follows:**

Name of Individual Doing Business with the County	Name of Related County Employee or State, County or Municipal Elected Official	Title and Position of Related County Employee or State, County or Municipal Elected Official	Nature of Familial Relationship*
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

*If more space is needed, attach an additional sheet following the above format.*

- The Person Doing Business with the County is a business entity and there is a familial relationship between at least one member of this business entity's board of directors, officers, persons responsible for general administration of the business entity, agents authorized to execute documents on behalf of the business entity and/or employees directly engaged in contractual work with the County on behalf of the business entity, on the one hand, and at least one Cook County employee and/or a person holding elective office in the State of Illinois, Cook County, and/or any municipality within Cook County, on the other. **The familial relationships are as follows:**

Name of Member of Board of Director for Business Entity Doing Business with the County	Name of Related County Employee or State, County or Municipal Elected Official	Title and Position of Related County Employee or State, County or Municipal Elected Official	Nature of Familial Relationship*
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Name of Officer for Business Entity Doing Business with the County	Name of Related County Employee or State, County or Municipal Elected Official	Title and Position of Related County Employee or State, County or Municipal Elected Official	Nature of Familial Relationship*
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Name of Person Responsible for the General Administration of the Business Entity Doing Business with the County	Name of Related County Employee or State, County or Municipal Elected Official	Title and Position of Related County Employee or State, County or Municipal Elected Official	Nature of Familial Relationship*
-----------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------	----------------------------------

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Name of Agent Authorized to Execute Documents for Business Entity Doing Business with the County	Name of Related County Employee or State, County or Municipal Elected Official	Title and Position of Related County Employee or State, County or Municipal Elected Official	Nature of Familial Relationship*
--------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------	----------------------------------

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

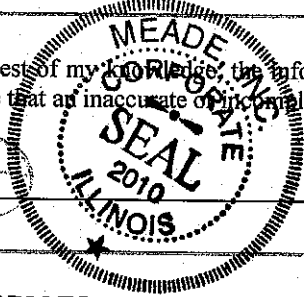
Name of Employee of Business Entity Directly Engaged in Doing Business with the County	Name of Related County Employee or State, County or Municipal Elected Official	Title and Position of Related County Employee or State, County or Municipal Elected Official	Nature of Familial Relationship*
----------------------------------------------------------------------------------------	--------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------	----------------------------------

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

If more space is needed, attach an additional sheet following the above format.

**VERIFICATION:** To the best of my knowledge, the information I have provided on this disclosure form is accurate and complete. I acknowledge that an inaccurate or incomplete disclosure is punishable by law, including but not limited to fines and debarment.

*[Handwritten Signature]*  
Signature of Recipient



9/2/16  
Date

**SUBMIT COMPLETED FORM TO:** Cook County Board of Ethics  
69 West Washington Street, Suite 3040, Chicago, Illinois 60602  
Office (312) 603-4304 – Fax (312) 603-9988  
CookCounty.Ethics@cookcountyil.gov

\* Spouse, domestic partner, civil union partner or parent, child, sibling, aunt, uncle, niece, nephew, grandparent or grandchild by blood, marriage (i.e. in laws and step relations) or adoption.

**SECTION 4**

**COOK COUNTY AFFIDAVIT FOR WAGE THEFT ORDINANCE**

Effective May 1, 2015, every Person, including Substantial Owners, seeking a Contract with Cook County must comply with the Cook County Wage Theft Ordinance set forth in Chapter 34, Article IV, Section 179. Any Person/Substantial Owner, who fails to comply with Cook County Wage Theft Ordinance, may request that the Chief Procurement Officer grant a reduction or waiver in accordance with Section 34-179(d).

"Contract" means any written document to make Procurements by or on behalf of Cook County.

"Person" means any individual, corporation, partnership, Joint Venture, trust, association, limited liability company, sole proprietorship or other legal entity.

"Procurement" means obtaining supplies, equipment, goods, or services of any kind.

"Substantial Owner" means any person or persons who own or hold a twenty-five percent (25%) or more percentage of interest in any business entity seeking a County Privilege, including those shareholders, general or limited partners, beneficiaries and principals; except where a business entity is an individual or sole proprietorship. Substantial Owner means that individual or sole proprietor.

All Persons/Substantial Owners are required to complete this affidavit and comply with the Cook County Wage Theft Ordinance before any Contract is awarded. Signature of this form constitutes a certification the information provided below is correct and complete, and that the individual(s) signing this form has/have personal knowledge of such information.

**I. Contract Information:**

Contract Number: 1628-15554

County Using Agency (requesting Procurement): Dept. of Transportation and Highways

**II. Person/Substantial Owner Information:**

Person (Corporate Entity Name): Meade, Inc.

Substantial Owner Complete Name: \_\_\_\_\_

FEIN# 27-4060761

Date of Birth: \_\_\_\_\_

E-mail address: \_\_\_\_\_

Street Address: 6850 W. 62nd Street

City: Chicago

State: IL Zip: 60525

Home Phone: (\_\_\_\_) \_\_\_\_\_

Driver's License No: \_\_\_\_\_

**III. Compliance with Wage Laws:**

Within the past five years has the Person/Substantial Owner, in any judicial or administrative proceeding, been convicted of, entered a plea, made an admission of guilt or liability, or had an administrative finding made for committing a repeated or willful violation of any of the following laws:

*Illinois Wage Payment and Collection Act, 820 ILCS 115/1 et seq.,* YES or  NO

*Illinois Minimum Wage Act, 820 ILCS 105/1 et seq.,* YES or  NO

*Illinois Worker Adjustment and Retraining Notification Act, 820 ILCS 65/1 et seq.,* YES or  NO

*Employee Classification Act, 820 ILCS 185/1 et seq.,* YES or  NO

*Fair Labor Standards Act of 1938, 29 U.S.C. 201, et seq.,* YES or  NO

*Any comparable state statute or regulation of any state, which governs the payment of wages* YES or  NO

If the Person/Substantial Owner answered "Yes" to any of the questions above, it is ineligible to enter into a Contract with Cook County, but can request a reduction or waiver under **Section IV**.



**IV. Request for Waiver or Reduction**

If Person/Substantial Owner answered "Yes" to any of the questions above, it may request a reduction or waiver in accordance with Section 34-179(d), provided that the request for reduction of waiver is made on the basis of one or more of the following actions that have taken place:

*There has been a bona fide change in ownership or Control of the ineligible Person or Substantial Owner*  
**YES or NO**

*Disciplinary action has been taken against the individual(s) responsible for the acts giving rise to the violation*  
**YES or NO**

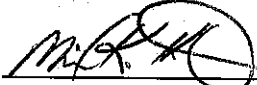
*Remedial action has been taken to prevent a recurrence of the acts giving rise to the disqualification or default*  
**YES or NO**

*Other factors that the Person or Substantial Owner believe are relevant.*  
**YES or NO**

The Person/Substantial Owner must submit documentation to support the basis of its request for a reduction or waiver. The Chief Procurement Officer reserves the right to make additional inquiries and request additional documentation.

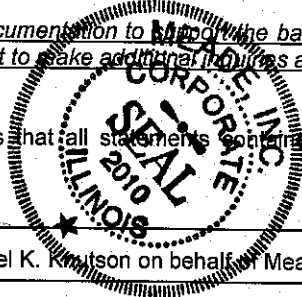
**V. Affirmation**

The Person/Substantial Owner affirms that all statements contained in the Affidavit are true, accurate and complete.

Signature:  Date: 9/2/16

Name of Person signing (Print): Michael K. Knutson on behalf of Meade, Inc. Title: Vice President

Subscribed and sworn to before me this 2nd day of September, 2016



x   
Notary Public Signature



**Note: The above information is subject to verification prior to the award of the Contract.**

CONTRACT AND EDS EXECUTION PAGE

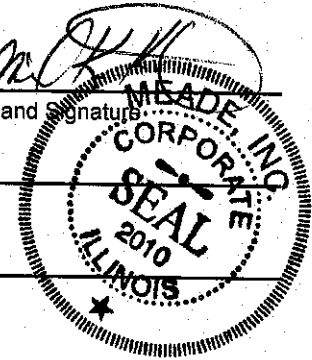
PLEASE EXECUTE THREE ORIGINAL PAGES OF EDS

The Applicant hereby certifies and warrants that all of the statements, certifications and representations set forth in this EDS are true, complete and correct; that the Applicant is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Applicant with all the policies and requirements set forth in this EDS; and that all facts and information provided by the Applicant in this EDS are true, complete and correct. The Applicant agrees to inform the Chief Procurement Officer in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege.

Execution by Corporation

Meade, Inc.  
Corporation's Name  
708-588-2594  
Telephone

Michael K. Knutson  
Vice President's Printed Name and Signature  
mkk@meade100.com  
Email  
9/2/16  
Date



Ass't Secretary Signature  
*David A. Hunt*

Execution by LLC

LLC Name  
Date

\*Member/Manager Printed Name and Signature  
Telephone and Email

Execution by Partnership/Joint Venture

Partnership/Joint Venture Name  
Date

\*Partner/Joint Venturer Printed Name and Signature  
Telephone and Email

Execution by Sole Proprietorship

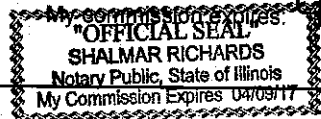
Printed Name Signature  
Date

Assumed Name (if applicable)  
Telephone and Email

Subscribed and sworn to before me this  
2nd day of Sept., 20 16.

*Shalmar Richards*  
Notary Public Signature

Notary Seal  
My Commission Expires 4/9/17



\*If the operating agreement, partnership agreement or governing documents requiring execution by multiple members, managers, partners, or joint venturers, please complete and execute additional Contract and EDS Execution Pages.

*Shalmar Richards*

## RESOLUTION

I, DAVID A. LEALI, Vice President of MEADE, INC., do hereby certify that the following is a true and correct copy of a resolution duly adopted by the Board of Directors of MEADE, INC., on January 6, 2015 and that said resolution has not been rescinded.

### Authorization to Sign Contracts

RESOLVED, that sales and consignment contracts, and bids therefor, including bids to and contracts with any Municipal, County or State government, or with the government of the United States, or with any agency or department of any such government, and bonds to secure the performance of such bids and contracts, may be executed on behalf of this Corporation by any one of the following:

CEO	-	FRANK J. LIZZADRO
PRESIDENT	-	FRANK A. LIZZADRO
VICE PRESIDENT	-	DAVID A. LEALI
VICE PRESIDENT	-	MICHAEL K. KNUTSON
VICE PRESIDENT	-	JOSEPH VAN GUNDY III
SECRETARY/TREASURER-	-	JOHN S. LIZZADRO, SR.
ASSISTANT SECRETARY	-	MARIBEL GARIBAY
SUPERINTENDENT	-	PAUL J. NABER
SENIOR ESTIMATOR	-	FRANK J. HUCKIN

FURTHER RESOLVED, that in conjunction with the above stated purpose and in corroboration with the above stated persons, the following are authorized to attest same.

CEO	-	FRANK J. LIZZADRO
PRESIDENT	-	FRANK A. LIZZADRO
VICE PRESIDENT	-	DAVID A. LEALI
VICE PRESIDENT	-	MICHAEL K. KNUTSON
VICE PRESIDENT	-	JOSEPH VAN GUNDY III
SECRETARY/TREASURER-	-	JOHN S. LIZZADRO, SR.
ASSISTANT SECRETARY	-	MARIBEL GARIBAY
SUPERINTENDENT	-	PAUL J. NABER
SENIOR ESTIMATOR	-	FRANK J. HUCKIN
EST. GROUP MANAGER	-	THEODORE C. CZAJA
ASST. EST. GROUP MGR	-	SCOTT M. SANSON

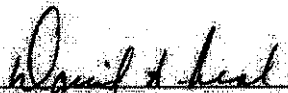
OFFICE MANAGER  
GROUP SECRETARY  
HUMAN RESOURCES

-  
-  
-

JANET L. LABUHN  
JOAN MASELLI  
ALLISON M. LIZZADRO-  
MEGALIS

IN WITNESS WHEREOF, I have affixed my name as Secretary and have caused the corporate seal of the corporation to be hereunto affixed the 6<sup>th</sup> day of January, 2015.

seal

  
\_\_\_\_\_  
David A. Leali  
Vice President



**EXHIBIT 14**

**SURETY'S STATEMENT OF QUALIFICATION FOR BONDING  
TO BE SUBMITTED WITH BID**

**PERFORMANCE AND PAYMENT BOND**

**CONTRACTOR TO PROVIDE WITHIN 14 DAYS NOTICE OF AN AWARD**

**SURETY'S STATEMENT**  
**of**  
**QUALIFICATION FOR BONDING**  
**(Section 10)**

This document must be accurately executed (by the Surety Company) and yielded as part of this Bid.

IF THIS DOCUMENT IS NOT ACCURATELY EXECUTED AND SUBMITTED WITH THE BID PACKAGE, THIS CONSTITUTES CAUSE FOR DISQUALIFICATION OF THE VENDOR FROM BIDDING ON THIS CONTRACT.

The undersigned confirms that: Continental Casualty Company  
(SURETY COMPANY)

would execute a Performance/Payment Bond in favor of the County of Cook for the full amount

of the bid/contract: 1628-15554  
(NUMBER)

to: Meade, Inc.  
(BIDDER)

The penalty of this bond is to be \$ 100% of Contract Amount  
(TOTAL DOLLAR AMOUNT OF CONTRACT)

SURETY Continental Casualty Company  
*Kim Bragg*  
(SURETY COMPANY'S AUTHORIZED SIGNATURE)

CORPORATE

Kimberly Bragg  
(ATTORNEY-IN-FACT)

AMB # 02128 NAIC 20443

SEAL

**PERFORMANCE AND PAYMENT BOND TO THE COUNTY OF COOK**

Know All Men by These Presence, That we, Meade, Inc.

as principle, and Continental Casualty Company

333 S. Wabash Avenue, Chicago, IL 60604

as surety, are

held and firmly bound unto the County of Cook in the penal sum of Two Million Eight Hundred Seventy Seven Thousand Ten and 70/100 Dollars (\$ 2,877,010.70 ), lawful money of the

United States of America, for the payment of which sum of money well and truly to be made, we bind ourselves, our respective heirs, executors, administrators, successors and assigns, firmly, by these presences.

Signed, sealed, and delivered this 16th day of September A.D. 20 16

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, That whereas, the above bounded principle entered into a certain contract with the County of Cook, bearing date the day of January 1, 2017, ~~2016~~ for Electrical and Mechanical Item Maintenance Route Various, Section 17-8EMIM-00-GM in Bremen Township; Cook County Contract No. 1628-15554

The terms and conditions of the Illinois Public Construction Bond Act, 30 ILCS 550

The terms and conditions of the Illinois Public Construction Bond Act, 30 ILCS 550 *et seq.* are hereby incorporated by reference.

It is hereby expressly understood and agreed, and made a condition hereof, that any judgment rendered in favor of any person not a party to said contract against the County of Cook in any suit arising out of said contract or its performance, when reasonable notice of the pendency of such suit shall have been given to said principle and to said surety, shall be conclusive against said principle and said surety as to both liability and amount.

In Witness Whereof, said parties hereto have caused this bond to be executed and delivered in Chicago, Illinois, all on the day and year first above written.

Meade, Inc.

PRINCIPAL/CONTRACTOR

By

[Signature]  
PRESIDENT

[Signature]  
Ass't Corp. SECRETARY



Continental Casualty Company

SURETY

By

[Signature]  
SURETY/ATTORNEY-IN-FACT Susan K. Landreth  
(ATTACH POWER OF ATTORNEY)

002128  
AMB#

20443  
NAIC#

Approved as to form:

By:

ASSISTANT STATES ATTORNEY  
PW5.1

**ACKNOWLEDGEMENT OF SURETY**

**STATE OF ILLINOIS  
COUNTY OF COOK**

On this 16<sup>th</sup> day of September, 2016 before me personally came Susan K. Landreth to me known, who being by so duly sworn, did depose and say: that she is

Attorney-In-Fact of Continental Casualty Company

the Corporation described in and which executed the foregoing instrument; that she knows the seal of said Corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by authority granted to him/her in accordance with the By-Laws of the said Corporation, and that she signed her name thereto by like authority.

Sarah E Green  
NOTARY PUBLIC, Sarah E. Green

My Commission Expires:

February 17, 2020





POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company (herein called "the CNA Companies"), are duly organized and existing insurance companies having their principal offices in the City of Chicago, and State of Illinois, and that they do by virtue of the signatures and seals herein affixed hereby make, constitute and appoint

Susan K. Landreth , Individually

of Chicago, IL their true and lawful Attorney-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on their behalf bonds, undertakings and other obligatory instruments of similar nature

Surety Bond No: 929639047

- In Unlimited Amounts -

Principal: Meade, Inc.

Obligee: Cook County

and to bind them thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of their insurance companies and all the acts of said Attorney, pursuant to the authority hereby given is hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law and Resolutions, printed on the reverse hereof, duly adopted, as indicated, by the Boards of Directors of the insurance companies.

In Witness Whereof, the CNA Companies have caused these presents to be signed by their Vice President and their corporate seals to be hereto affixed on this 1st day of December, 2015.



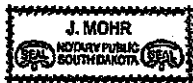
Continental Casualty Company  
National Fire Insurance Company of Hartford  
American Casualty Company of Reading, Pennsylvania

*Paul T. Bruflat*

Paul T. Bruflat Vice President

State of South Dakota, County of Minnehaha, ss:

On this 1st day of December, 2015, before me personally came Paul T. Bruflat to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is a Vice President of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company described in and which executed the above instrument; that he knows the seals of said insurance companies; that the seals affixed to the said instrument are such corporate seals; that they were so affixed pursuant to authority given by the Boards of Directors of said insurance companies and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said insurance companies.



My Commission Expires June 23, 2021

*J. Mohr*

J. Mohr Notary Public

CERTIFICATE

I, D. Bult, Assistant Secretary of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company do hereby certify that the Power of Attorney herein above set forth is still in force, and further certify that the By-Law and Resolution of the Board of Directors of the insurance companies printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said insurance companies this 16th day of September, 2016.



Continental Casualty Company  
National Fire Insurance Company of Hartford  
American Casualty Company of Reading, Pennsylvania

*D. Bult*

D. Bult Assistant Secretary

## Authorizing By-Laws and Resolutions

### ADOPTED BY THE BOARD OF DIRECTORS OF CONTINENTAL CASUALTY COMPANY:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company at a meeting held on May 12, 1995:

**"RESOLVED:** That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of Continental Casualty Company.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25<sup>th</sup> day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company. "

### ADOPTED BY THE BOARD OF DIRECTORS OF NATIONAL FIRE INSURANCE COMPANY OF HARTFORD:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company by unanimous written consent dated May 10, 1995:

**"RESOLVED:** That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of National Fire Insurance Company of Hartford.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25<sup>th</sup> day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company. "

### ADOPTED BY THE BOARD OF DIRECTORS OF AMERICAN CASUALTY COMPANY OF READING, PENNSYLVANIA:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company by unanimous written consent dated May 10, 1995:

**"RESOLVED:** That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective."

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of American Casualty Company of Reading, Pennsylvania.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25<sup>th</sup> day of April, 2012:

"Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the "Authorized Officers") to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, "Electronic Signatures"); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company. "

**EXHIBIT 15**

**INSURANCE REQUIREMENT (ACORD)**

**FORM NOT SUPPLIED HERE.  
CONTRACTOR TO PROVIDE  
WITHIN 14 DAYS NOTICE OF AN AWARD**

<b>ACORD™ CERTIFICATE OF LIABILITY INSURANCE</b>		DATE(MM/DD/YYYY) <b>11/8/2016</b>
<b>PRODUCER</b> <b>ROBERT B MCMANUS INC</b> 111 W Jackson Blvd #1134 Chicago, IL 60604 (312) 786-9090		THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.
<b>INSURED</b> <b>Meade, Inc.</b> 6850 West 62nd Street Chicago, IL 60638		<b>INSURERS AFFORDING COVERAGE</b> INSURER A: <b>QBE Insurance Corp.</b> NAIC# <b>39217</b> INSURER B: <b>Charter Oak Fire Ins. Co.</b> <b>25615</b> INSURER C: <b>American Guarantee &amp; Liab. Ins.</b> <b>26247</b> INSURER D: <b>Safety National Casualty Corp.</b> <b>15105</b> INSURER E: <b>Travelers</b> <b>25674</b>

**COVERAGES**

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

RISR LTR	ADDL INSRG	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE(MM/DD/YY)	POLICY EXPIRATION DATE(MM/DD/YY)	LIMITS
A		GENERAL LIABILITY	CGA 0960193 XCU Coverage	05/25/16	05/25/17	EACH OCCURRENCE \$ 2,000,000
		<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMSMADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC				DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 4,000,000 PRODUCTS - COMP/OP AGG \$ 4,000,000
B		AUTOMOBILE LIABILITY	CAP-5808B576	05/25/16	05/25/17	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000
		<input checked="" type="checkbox"/> ANY AUTO <input checked="" type="checkbox"/> ALL OWNED AUTOS <input checked="" type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS				BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
		GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT \$ OTHER THAN AUTO ONLY: EA ACC \$ AGG \$
C		EXCESS UMBRELLA LIABILITY	AUC-0195849-01	05/25/16	05/25/17	EACH OCCURRENCE \$25,000,000
		<input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMSMADE DEDUCTIBLE \$ RETENTION \$				AGGREGATE \$25,000,000 \$ \$ \$
D		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	AGC4052525	01/01/16	05/25/17	<input type="checkbox"/> WC STATUTORY LIMITS <input checked="" type="checkbox"/> OTHER
		ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (If yes, describe under SPECIAL PROVISIONS below)				E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
E		Property & Equipment	QT6308759M006-TI	05/25/16	05/25/17	All Risk Value

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

Re: Contract #1628-15554  
 Cook County, its officials, employees and agents are listed as additional insureds on the General Liability policy. Coverage is primary and non-contributory. Waiver of Subrogation applies in favor of the additional insureds.

<b>CERTIFICATE HOLDER</b>	<b>CANCELLATION</b>
<b>Cook County</b> Office of the Chief Procurement Officer 118 N. Clark Street, Room 1018 Chicago, Illinois 60602 Attn: Cho Ng, Asst Procurement Officer	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL SEND BY MAIL <u>30</u> DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES. AUTHORIZED REPRESENTATIVE: <i>BRET MCMANUS</i>



AGENCY CUSTOMER ID: \_\_\_\_\_  
 LOC #: \_\_\_\_\_

**ADDITIONAL REMARKS SCHEDULE**

Page \_\_\_\_ of \_\_\_\_

AGENCY <b>ROBERT B MCMANUS INC</b>		NAMED INSURED <b>Meade, Inc.</b>	
POLICY NUMBER		9550 W. 55th St., Suite A McCook, IL 60525	
CARRIER	NAIC CODE	EFFECTIVE DATE:	

**ADDITIONAL REMARKS**

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,  
 FORM NUMBER: \_\_\_\_\_ FORM TITLE: \_\_\_\_\_

**Professional Liability**

Columbia Casualty Company (CNA)

Policy # CPB-11-405-0984  
 03/01/16-17  
 Each Claim- \$6,000,000  
 Aggregate- \$6,000,000

**Pollution Liability**

Ironshore Specialty Insurance Company

Policy # 001458903  
 09/12/16-18  
 Each Claim- \$20,000,000  
 Aggregate- \$30,000,000  
 Retention- \$50,000

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

**ADDITIONAL INSURED – OWNERS, LESSEES OR  
CONTRACTORS – SCHEDULED PERSON OR  
ORGANIZATION**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

<p>Name of Person or Organization:</p> <p>Cook County, its officials, employees and agents</p>
------------------------------------------------------------------------------------------------

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. Section II – Who Is An Insured is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of your ongoing operations performed for that insured.

B. With respect to the insurance afforded to these additional insureds, the following exclusion is added:

**2. Exclusions**

This insurance does not apply to "bodily injury" or "property damage" occurring after:

(1) All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the site of the covered operations has been completed; or

(2) That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

POLICY NUMBER: CGA 0960193

COMMERCIAL GENERAL LIABILITY  
CG 20 37 10 01

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

**ADDITIONAL INSURED – OWNERS, LESSEES OR  
CONTRACTORS – COMPLETED OPERATIONS**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

**SCHEDULE**

<b>Name of Person or Organization:</b>  Cook County, its officials, employees and agents
<b>Location And Description of Completed Operations:</b>  
<b>Additional Premium:</b>  

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

**Section II – Who Is An Insured** is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" at the location designated and described in the schedule of this endorsement performed for that insured and included in the "products-completed operations hazard".

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## PRIMARY AND NONCONTRIBUTORY – OTHER INSURANCE CONDITION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART  
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

The following is added to the Other Insurance Condition and supersedes any provision to the contrary:

### Primary And Noncontributory Insurance

This insurance is primary to and will not seek contribution from any other insurance available to an additional insured under your policy provided that:

(1) The additional insured is a Named Insured under such other insurance; and

(2) You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other insurance available to the additional insured.



COMMERCIAL GENERAL LIABILITY  
CG 24 04 05 09

## WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART  
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

### SCHEDULE

Name Of Person Or Organization: AS REQUIRED BY WRITTEN CONTRACT
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

The following is added to Paragraph 3. Transfer Of Rights Of Recovery Against Others To Us of Section IV -Conditions:

We waive any right of recovery we may have against the person or organization shown in the Schedule above because of payments we make for injury or damage arising out of your ongoing operations or "your work" done under a contract with that person or organization and included in the "products-completed operations hazard". This waiver applies only to the person or organization shown in the Schedule above.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

## BUSINESS AUTO EXTENSION ENDORSEMENT

This endorsement modifies insurance provided under the following:

### BUSINESS AUTO COVERAGE FORM

**GENERAL DESCRIPTION OF COVERAGE** -- This endorsement broadens coverage. However, coverage for any injury, damage or medical expenses described in any of the provisions of this endorsement may be excluded or limited by another endorsement to the Coverage Part, and these coverage broadening provisions do not apply to the extent that coverage is excluded or limited by such an endorsement. The following listing is a general coverage description only. Limitations and exclusions may apply to these coverages. Read all the provisions of this endorsement and the rest of your policy carefully to determine rights, duties, and what is and is not covered.

- |                                                                |                                                                  |
|----------------------------------------------------------------|------------------------------------------------------------------|
| A. BROAD FORM NAMED INSURED                                    | H. HIRED AUTO PHYSICAL DAMAGE -- LOSS OF USE -- INCREASED LIMIT  |
| B. BLANKET ADDITIONAL INSURED                                  | I. PHYSICAL DAMAGE -- TRANSPORTATION EXPENSES -- INCREASED LIMIT |
| C. EMPLOYEE HIRED AUTO                                         | J. PERSONAL PROPERTY                                             |
| D. EMPLOYEES AS INSURED                                        | K. AIRBAGS                                                       |
| E. SUPPLEMENTARY PAYMENTS -- INCREASED LIMITS                  | L. NOTICE AND KNOWLEDGE OF ACCIDENT OR LOSS                      |
| F. HIRED AUTO -- LIMITED WORLDWIDE COVERAGE -- INDEMNITY BASIS | M. BLANKET WAIVER OF SUBROGATION                                 |
| G. WAIVER OF DEDUCTIBLE -- GLASS                               | N. UNINTENTIONAL ERRORS OR OMISSIONS                             |

### PROVISIONS

#### A. BROAD FORM NAMED INSURED

The following is added to Paragraph A.1., Who Is An Insured, of SECTION II -- COVERED AUTOS LIABILITY COVERAGE:

Any organization you newly acquire or form during the policy period over which you maintain 50% or more ownership interest and that is not separately insured for Business Auto Coverage. Coverage under this provision is afforded only until the 180th day after you acquire or form the organization or the end of the policy period, whichever is earlier.

#### B. BLANKET ADDITIONAL INSURED

The following is added to Paragraph c. in A.1., Who Is An Insured, of SECTION II -- COVERED AUTOS LIABILITY COVERAGE:

Any person or organization who is required under a written contract or agreement between you and that person or organization, that is signed and executed by you before the "bodily injury" or "property damage" occurs and that is in effect during the policy period, to be named as an additional insured is an "insured" for Covered Autos Liability Coverage, but only for damages to which

this insurance applies and only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured provision contained in Section II.

#### C. EMPLOYEE HIRED AUTO

1. The following is added to Paragraph A.1., Who Is An Insured, of SECTION II -- COVERED AUTOS LIABILITY COVERAGE:

An "employee" of yours is an "insured" while operating an "auto" hired or rented under a contract or agreement in an "employee's" name, with your permission, while performing duties related to the conduct of your business.

2. The following replaces Paragraph b. in B.5., Other Insurance, of SECTION IV -- BUSINESS AUTO CONDITIONS:

b. For Hired Auto Physical Damage Coverage, the following are deemed to be covered "autos" you own:

- (1) Any covered "auto" you lease, hire, rent or borrow; and
- (2) Any covered "auto" hired or rented by your "employee" under a contract in an "employee's" name, with your

## COMMERCIAL AUTO

permission, while performing duties related to the conduct of your business.

However, any "auto" that is leased, hired, rented or borrowed with a driver is not a covered "auto".

### D. EMPLOYEES AS INSURED

The following is added to Paragraph A.1., Who Is An Insured, of SECTION II - COVERED AUTOS LIABILITY COVERAGE:

Any "employee" of yours is an "insured" while using a covered "auto" you don't own, hire or borrow in your business or your personal affairs.

### E. SUPPLEMENTARY PAYMENTS - INCREASED LIMITS

1. The following replaces Paragraph A.2.a.(2), of SECTION II - COVERED AUTOS LIABILITY COVERAGE:

(2) Up to \$3,000 for cost of bail bonds (including bonds for related traffic law violations) required because of an "accident" we cover. We do not have to furnish these bonds.

2. The following replaces Paragraph A.2.a.(4), of SECTION II - COVERED AUTOS LIABILITY COVERAGE:

(4) All reasonable expenses incurred by the "insured" at our request, including actual loss of earnings up to \$500 a day because of time off from work.

### F. HIRED AUTO - LIMITED WORLDWIDE COVERAGE - INDEMNITY BASIS

The following replaces Subparagraph (5) in Paragraph E.7., Policy Period, Coverage Territory, of SECTION IV - BUSINESS AUTO CONDITIONS:

(5) Anywhere in the world, except any country or jurisdiction while any trade sanction, embargo, or similar regulation imposed by the United States of America applies to and prohibits the transaction of business with or within such country or jurisdiction, for Covered Autos Liability Coverage for any covered "auto" that you lease, hire, rent or borrow without a driver for a period of 30 days or less and that is not an "auto" you lease, hire, rent or borrow from any of your "employees", partners (if you are a partnership), members (if you are a limited liability company) or members of their households.

(a) With respect to any claim made or "suit" brought outside the United States of America, the territories and possessions of the United States of America, Puerto Rico and Canada:

(i) You must arrange to defend the "insured" against, and investigate or settle any such claim or "suit" and keep us advised of all proceedings and actions.

(ii) Neither you nor any other involved "insured" will make any settlement without our consent.

(iii) We may, at our discretion, participate in defending the "insured" against, or in the settlement of, any claim or "suit".

(iv) We will reimburse the "insured" for sums that the "insured" legally must pay as damages because of "bodily injury" or "property damage" to which this insurance applies, that the "insured" pays with our consent, but only up to the limit described in Paragraph C., Limits Of Insurance, of SECTION II - COVERED AUTOS LIABILITY COVERAGE.

(v) We will reimburse the "insured" for the reasonable expenses incurred with our consent for your investigation of such claims and your defense of the "insured" against any such "suit", but only up to and included within the limit described in Paragraph C., Limits Of Insurance, of SECTION II - COVERED AUTOS LIABILITY COVERAGE, and not in addition to such limit. Our duty to make such payments ends when we have used up the applicable limit of insurance in payments for damages, settlements or defense expenses.

(b) This insurance is excess over any valid and collectible other insurance available to the "insured" whether primary, excess, contingent or on any other basis.

(c) This insurance is not a substitute for required or compulsory insurance in any country outside the United States, its territories and possessions, Puerto Rico and Canada.

You agree to maintain all required or compulsory insurance in any such country up to the minimum limits required by local law. Your failure to comply with compulsory insurance requirements will not invalidate the coverage afforded by this policy, but we will only be liable to the same extent we would have been liable had you complied with the compulsory insurance requirements.

- (d) It is understood that we are not an admitted or authorized insurer outside the United States of America, its territories and possessions, Puerto Rico and Canada. We assume no responsibility for the furnishing of certificates of insurance, or for compliance in any way with the laws of other countries relating to insurance.

**G. WAIVER OF DEDUCTIBLE - GLASS**

The following is added to Paragraph D., Deductible, of SECTION III - PHYSICAL DAMAGE COVERAGE:

No deductible for a covered "auto" will apply to glass damage if the glass is repaired rather than replaced.

**H. HIRED AUTO PHYSICAL DAMAGE - LOSS OF USE - INCREASED LIMIT**

The following replaces the last sentence of Paragraph A.4.b., Loss Of Use Expenses, of SECTION III - PHYSICAL DAMAGE COVERAGE:

However, the most we will pay for any expenses for loss of use is \$65 per day, to a maximum of \$750 for any one "accident".

**I. PHYSICAL DAMAGE - TRANSPORTATION EXPENSES - INCREASED LIMIT**

The following replaces the first sentence in Paragraph A.4.a., Transportation Expenses, of SECTION III - PHYSICAL DAMAGE COVERAGE:

We will pay up to \$50 per day to a maximum of \$1,500 for temporary transportation expense incurred by you because of the total theft of a covered "auto" of the private passenger type.

**J. PERSONAL PROPERTY**

The following is added to Paragraph A.4., Coverage Extensions, of SECTION III - PHYSICAL DAMAGE COVERAGE:

**Personal Property**

We will pay up to \$400 for "loss" to wearing apparel and other personal property which is:

- (1) Owned by an "insured"; and

- (2) In or on your covered "auto".

This coverage applies only in the event of a total theft of your covered "auto".

No deductibles apply to this Personal Property coverage.

**K. AIRBAGS**

The following is added to Paragraph B.3., Exclusions, of SECTION III - PHYSICAL DAMAGE COVERAGE:

Exclusion 3.a. does not apply to "loss" to one or more airbags in a covered "auto" you own that inflate due to a cause other than a cause of "loss" set forth in Paragraphs A.1.b. and A.1.c., but only:

- a. If that "auto" is a covered "auto" for Comprehensive Coverage under this policy;
- b. The airbags are not covered under any warranty; and
- c. The airbags were not intentionally inflated.

We will pay up to a maximum of \$1,000 for any one "loss".

**L. NOTICE AND KNOWLEDGE OF ACCIDENT OR LOSS**

The following is added to Paragraph A.2.a., of SECTION IV - BUSINESS AUTO CONDITIONS:

Your duty to give us or our authorized representative prompt notice of the "accident" or "loss" applies only when the "accident" or "loss" is known to:

- (a) You (if you are an individual);
- (b) A partner (if you are a partnership);
- (c) A member (if you are a limited liability company);
- (d) An executive officer, director or insurance manager (if you are a corporation or other organization); or
- (e) Any "employee" authorized by you to give notice of the "accident" or "loss".

**M. BLANKET WAIVER OF SUBROGATION**

The following replaces Paragraph A.5., Transfer Of Rights Of Recovery Against Others To Us, of SECTION IV - BUSINESS AUTO CONDITIONS:

**5. Transfer Of Rights Of Recovery Against Others To Us**

We waive any right of recovery we may have against any person or organization to the extent required of you by a written contract signed and executed prior to any "accident" or "loss", provided that the "accident" or "loss" arises out of operations contemplated by

COMMERCIAL AUTO

such contract. The waiver applies only to the person or organization designated in such contract.

**N. UNINTENTIONAL ERRORS OR OMISSIONS**

The following is added to Paragraph E.2., Concealment, Misrepresentation, Or Fraud, of SECTION IV - BUSINESS AUTO CONDITIONS:

The unintentional omission of, or unintentional error in, any information given by you shall not prejudice your rights under this insurance. However this provision does not affect our right to collect additional premium or exercise our right of cancellation or non-renewal.

0456 00 0118 (KWC)

ENDORSEMENT

BLANKET WAIVER OF SUBROGATION

Effective 12:01 A.M., Local Time, January 01, 2016

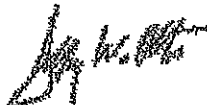
In consideration of the payment of premium and adherence by both parties to the terms of this Agreement, it is hereby understood and agreed that the Recovery From Others section of this Agreement is amended to include the following additional language:

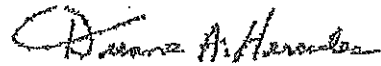
The CORPORATION has the right to pursue subrogation recoveries from anyone liable for an injury covered by this Agreement. The CORPORATION will not enforce its right against any person or organization for whom the EMPLOYER performs work under a written contract that requires the EMPLOYER to obtain this agreement from the CORPORATION.

All other terms, conditions, agreements and stipulations remain unchanged.

Attached to and forming a part of Excess Workers' Compensation and Employers' Liability Insurance Agreement No. AGC4082825, issued by SAFETY NATIONAL CASUALTY CORPORATION of St. Louis, Missouri to MEADE ELECTRIC COMPANY, INC., ET AL, dated January 01, 2016.

SAFETY NATIONAL CASUALTY CORPORATION

  
Secretary

  
President

SECTION 6  
COOK COUNTY SIGNATURE PAGE

ON BEHALF OF THE COUNTY OF COOK, A BODY POLITIC AND CORPORATE OF THE STATE OF ILLINOIS, THIS CONTRACT IS HEREBY EXECUTED BY:



COOK COUNTY CHIEF PROCUREMENT OFFICER

DATED AT CHICAGO, ILLINOIS THIS 21 DAY OF November, 2016

IN THE CASE OF A BID, THE COUNTY HEREBY ACCEPTS:

THE FOREGOING BID AS IDENTIFIED IN THE CONTRACT DOCUMENTS FOR CONTRACT NUMBER

1628-15554

OR

ITEM(S), SECTION(S), PART(S): Section No: 17-8EMIM-00-GM

TOTAL AMOUNT OF CONTRACT: \$ 2,877,010.70  
(DOLLARS AND CENTS)

FUND CHARGEABLE: \_\_\_\_\_

APPROVED AS TO FORM:

  
ASSISTANT STATE'S ATTORNEY  
(Required on contracts over \$1,000,000.00)

APPROVED BY THE BOARD OF  
COOK COUNTY COMMISSIONERS

NOV 16 2016