

BIDDING DOCUMENTS
FOR
NE & SE SUBSTATION UPGRADES
TRANSFORMER PURCHASE



CITY OF BATAVIA
KANE COUNTY, ILLINOIS
SEPTEMBER 2026



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PART I

Seal & Signature

Invitation to Bid

Instructions to Bidders

Non-Collusion Affidavit

Qualifications

Bid Bond

Prevailing Wage

Bid Proposal

Bid Form

Bid Conditions

Contract

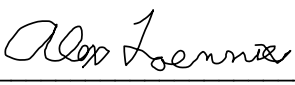
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Notice of Award

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Seals and Signatures

	I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly licensed professional under the laws of the State of Illinois.	
	Alex Toennies	
		09/03/2026
	Signature	Date
	Discipline: Engineer, Illinois License #: 062071403 License Expires: 11/30/2027	



INVITATION TO BID

For the

NE Substation Upgrades – Breaker Purchase

1. **NOTICE** is hereby given that the City Council of the City of Batavia, Illinois (hereinafter called the "Owner") will receive sealed bids at Batavia City Hall, 100 N Island Avenue, Batavia, IL 60510 until 2:00 p.m. local time on **September 29, 2026** for the NE Substation Upgrades – Breaker Purchase (hereinafter called the "Project") at which time and place the bids will be publicly opened and read aloud.
2. This is a cash project.
3. The scope of work is outlined in the contract documents, specifications and drawings.
4. All work shall be in accordance with the specifications as set forth in the Contract Documents, plans and other State and Local regulations as applicable.
5. The proposal from the Contractor shall consist of the submission of the completed Contract Documents and supplemental addendums as received from the Owner. The bid shall be made on the BID PROPOSAL, BID SCHEDULE, BID CONDITIONS, AND BID BOND provided as part of these Bidding Documents and shall be accompanied by a bid guarantee in the form of a Certified or Cashier's check from a responsible solvent bank or Bid Bond made payable to the **City of Batavia** in the amount of five percent (5%) of the bid amount. The amount of the bid guarantee shall be forfeited to the Owner if the Bidder neglects or refuses to enter into a Contract or to furnish performance security after the bid has been accepted.
6. The Contractor shall provide a written statement as part of the Bid submittal of verifying their ability to commence work on the project within the time specified in the Contract Documents.
7. The Owner intends to accept the lowest responsible bid, and the Owner reserves the right to reject any and all bids, offers, or proposals submitted, or to advertise for new bids. The Owner reserves the right to defer the acceptance of any bid and the award of a Contract for a period not exceeding sixty (60) days after the date of opening the bids. The public bid opening date is **September 29, 2026 at 2:00 pm**.
8. The successful Bidder to whom the Contract shall be awarded shall sign the Contract, furnish a Performance Bond, or Letter of Credit in amounts equal to one hundred ten percent (110%) of the Contract Amount and required Certificates of Insurance, within fifteen (15) calendar days after the Contract has been awarded. Failure to do so shall make the Contract null and void.



9. Bidders are advised of the following requirements of this contract: 1) 5% Bid Security with submittal of bid; 2) 110% Performance Security within fifteen (15) calendar days after Contract award; 3) applicable OSHA and EPA requirements.
10. Bid package (Instructions to Bidders, Contract Documents, Plans, Specifications and Special Provisions) for use by prospective Bidders and interested suppliers may be obtained at Batavia City Hall, 100 N Island Avenue, Batavia, IL 60510. A non-refundable charge of \$0 dollars will be assessed for each set of plans and specifications.

Dated the 3rd Day of September 2026.

City of Batavia

Erika Sittler
Engineer

INSTRUCTIONS TO BIDDERS

1. **LOCATION:**

The proposed work covered by these documents is located as shown on the location map contained in the drawings, or as designated by the Owner.

In general, all work is to be constructed within public land owned and/or dedicated for public use, or easements for which the Owner has obtained clearance for the use intended.

2. **SCOPE:**

The scope of work is outlined in the Contract Documents, Specifications and drawings.

3. **DEFINITIONS:**

Wherever the word "Owner" is used in these documents, it shall be understood to mean **City of Batavia**. Wherever the words "directed", "permitted", "ordered", "designated", "approved", "satisfactory", "acceptable", or words of like import are used, they shall be understood to refer to the exercise of the authority or judgment vested in the City Engineer.

4. **BID DATE:**

Sealed bid proposals will be received for the proposed work specified herein at City of Batavia, 100 N Island Avenue, Batavia, IL 60510 until 2:00 p.m. local prevailing time on **September 29, 2026**.

5. **BID OPENING:**

The public Bid Opening will be held at City of Batavia, 100 N Island Avenue, Batavia, IL 60510 at 2:00 p.m. local prevailing time on **September 29, 2026**.

6. **INTERPRETATION OF CONTRACT DOCUMENTS:**

If any person contemplating submitting a bid for the proposed contract is in doubt as to the true meaning of any part of the specifications, or other proposed contract documents, they may submit to the Owner a written request, **no later than 10 AM local time, and three business days prior to the bid opening**, for an interpretation thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation of the proposed documents will be made only by an Addendum duly issued by the Owner and a copy of such Addendum will be mailed, faxed, emailed or delivered to each person receiving a set of such documents. All Addenda to Bidders shall be incorporated in the bids and will become a part of the Contract Documents. **No oral interpretations** by the Owner will be binding; only instructions in writing will be deemed valid. All requests for interpretations regarding this project may be directed to **Chris Couch - ccouch@bhmg.com** and **Amy Wooldridge - awooldridge@bhmg.com**, BHMG Engineers, Inc.

7. **PREPARATION OF BID PROPOSAL:**

Each bid proposal shall be submitted on the form provided by the Owner. The bid proposal shall be enclosed in an opaque envelope, which is sealed and clearly marked on the front **Bid Proposal – NE Substation Upgrades – Transformer Purchase**, addressed to the Owner, with the name and address of the Bidder endorsed thereon.

The Proposal from the Contractor shall consist of the Complete Contract Documents and supplemental addendums as received from the Owner. The bound contract Documents shall not be separated and shall be submitted as a complete packet. Bid proposals are to be submitted for the work specified on the attached BID PROPOSAL, BID SCHEDULE, BID CONDITIONS, AND BID SCHEDULE, all furnished and installed in strict conformance with the specifications therefore. No proposal will be considered except upon completed work fully installed in place as specified.

All blank spaces in the proposal shall be properly filled in with ink opposite each item, using figures and written words, as indicated in the column headings.

In case of discrepancy between the prices indicated in figures and in written words, the written words shall govern and will be used in computing the total bid price for comparison of proposals.

8. **SIGNATURE ON BID PROPOSAL:**

Each bid proposal shall contain the full name of every person, firm, or corporation interested in the same and the address of each Bidder. When firms bid, the name of each member should be signed and the firm name added. When a corporation is the Bidder, the person signing shall state under the laws of what state the corporation is chartered, and the name and title of the officer having authority under the by-laws to sign contracts. Any one agent signing the bid proposal must file with it legal evidence of their authority to do so.

9. **BID GUARANTEE:**

Each bid proposal shall be accompanied by a bid guarantee in the form of a Certified or Cashier's Check from a responsible solvent bank or Bid Bond made payable to the **City of Batavia** in the amount of five percent (5%) of the bid amount. Said bid guarantee to serve as a guarantee that if the Contractor's proposal is accepted and a contract awarded, the successful Bidder, within the specified time, will enter into a contract agreement with the Owner and post the required Performance Security.

All bid guarantees will be returned to unsuccessful Bidders after a contract has been entered into with the successful Bidder.

10. **BASIS OF AWARD:**

Award of a contract or contracts will be based upon the bid proposals submitted and then to the party (or parties) submitting the lowest responsible bid (or bids) as determined by the Owner in its sole judgment. The Owner reserves the right to waive any informality in the proposals or to reject any or all bids. Client reserves the right to award based on lead time, quality, and price.

11. **WITHDRAWAL OF PROPOSAL:**

If a Bidder wishes to withdraw its proposal, the Bidder may do so before the time fixed for the opening of bids, without prejudice to the Bidder, by communicating the Contractor's purpose in writing and delivered by certified or registered mail, postage prepaid to the Owner, and when the Contractor's bid is reached, it will be handed to the Contractor or to the Contractor's authorized agent unopened. Bids opened and read may not be withdrawn for a period of sixty (60) days. Corrections, modifications, or amendments to bids for any reason, including any error or miscalculation, shall not be permitted. Withdrawals of bids permitted sixty (60) days after the bid opening may be made in writing and delivered by certified or registered mail, postage prepaid to the Owner.

12. **COMPARISON OF BIDS:**

Proposals for the purpose of awarding a contract will be compared on the basis of the total amount bid, which is to be obtained by applying the unit and/or lump sum bid prices to the quantities listed in the proposal herein.

The estimated quantities of unit price items listed in the proposal, although stated with as much accuracy as is possible in advance, are approximately only, and are given **only** for the purpose of comparing bids. The quantities on which payment will be made to the Contractor are to be determined by measurements of the work actually performed by the Contractor as specified in the Contract.

13. **CONTRACT AND PERFORMANCE SECURITY:**

The person, firm, or corporation to whom a contract is awarded will be required to execute a contract, furnish a Performance Bond, Letter of Credit or cash with an acceptable surety company within fifteen (15) calendar days after the contract is awarded to the Contractor. The Performance Bond shall be in the amount of one hundred ten percent (110%) of the award contract amount. The Performance Security as security for the faithful performance of this Contract and for the payment of all persons performing labor and furnishing materials in connection with the Contract. Such bond shall remain in full force for a period of one year from and after the final acceptance and payment by the Owner. The cost of such performance security shall be included as part of the bid.

14. **FORFEITURE OF BID DEPOSIT:**

If a person, firm, or corporation to whom a contract is awarded fails or neglects to enter into a contract and bond within the specified time limit, the Bidder will be considered to having abandoned it and the bid deposit shall thereupon be forfeited to the Owner and collected as provided by law.

15. **REJECTION OF PROPOSALS:**

Reasonable evidence or grounds for supposing that any Bidder is interested in more than one (1) proposal for the same item may cause a rejection of all proposals in which the Bidder is interested.

16. **EVIDENCE OF ABILITY :**

Bidders to whom an award may be contemplated shall provide a copy of their I.D.O.T. "Certificate of Eligibility" prior to receiving plans and/or bid documents. The "Certificate of Eligibility" shall demonstrate that the Bidder is capable of performing a minimum of 50% of the total contract work. Also, all Bidders shall complete I.D.O.T.'s "Affidavit of Availability" and include it with their proposal. At the City's sole discretion, the City may waive the I.D.O.T. certification requirement for certain projects.

17. **EXAMINATION OF WORK :**

Bidders must carefully examine the entire site of the work and make all necessary investigations to inform themselves thoroughly as to the facilities for delivering and handling materials for the work; and as to all difficulties that may be involved in the complete execution. Bidders must carefully examine the specifications for the work. The Owner will not be responsible, in any manner, for verbal answers to any inquiries regarding the meaning of the specifications given prior to the awarding of the contract. Bidders must contact the City of Batavia Engineering Department at (630) 454-2750 before visiting the site.

18. **LAWS AFFECTING PUBLIC WORK:**

The attention of the Bidder is called to the laws of the State of Illinois and to local ordinances pertaining to contracts on public work, and to the statutory requirements of the State of Illinois relative to licensing of corporations organized under the laws of any other state.

19. **INSURANCE:**

The attention of the Bidder is particularly called to the requirements in the General Conditions, which covers required Insurance.

20. **CONTRACTOR INTERFERENCE :**

Bidders are required to inform themselves fully of the conditions relating to construction and labor under which the work will be performed and the Bidders must employ, so far as possible such methods and means in the carrying out of the work as will not cause any interruption or interference with any other contractor.

21. **INSPECTION AND TESTING MATERIALS :**

The Bidder to whom this contract is awarded must pay for inspection and testing materials in accordance with the requirements of the detail specifications wherever such inspection or testing is called for under the specifications.

22. **WHEN AWARD IS EFFECTIVE :**

Award is effective upon formal acceptance and execution of the Contract by the Owner. A contract shall be deemed as having been awarded when official of the award has been provided to the successful Bidder.

23. **EMPLOYMENT OF ILLINOIS WORKERS**

Attention is called to the need for compliance with the Illinois Works on Public Works ACT 30 ILCS 570-0.01 et seq.

24. **PREVAILING WAGES :**

Illinois Prevailing Wages: Contractor shall not pay less than the prevailing rates of wages to all laborers, workmen, and mechanics performing work under this contract, and shall comply with the requirements of the Illinois Wages of Employees on Public Works Act 820 ILCS 130/1-12 including, without limitation, the submission of certified monthly payroll reports as required by 820 ILCS 130/5. The contractor is advised that failure to timely submit such reports shall be cause for the withholding of payments otherwise due the contractor until compliance with the reporting requirements is achieved. The current Illinois Department of Labor Prevailing Wage Rates for the County of Kane are available at their website <http://www.state.il.us/agency/idol/>. Prevailing wage rates are subject to revision monthly. Copies of the current prevailing wage rates are also available at the Kane County Purchasing Department, 719 Batavia Avenue, Geneva, Illinois.

Any bond furnished under this contract shall include such provisions as will guarantee the faithful performance of such prevailing wage clause as provided by the contract.

The Contractor and each of his Sub-Contractors shall pay each of his employees engaged in work on the project under this Contract in full (less deductions made mandatory by law) not less often than once each week.

25. **DAYS TO ACHIEVE DELIVERY OF GOODS:**

The Goods are to be delivered to the Point of Destination and ready for Buyer's receipt of delivery 30 months after the date when the Contract Times commence to run as provided in Paragraph 2.04 of the General Conditions.

If seller wishes to have goods delivered earlier than the initial delivery date, it must be approved by the client. Within 12 weeks of the contract being signed, the client reserves the right to push out the transformer delivery date at no cost.

26. **POINT OF DESTINATION:**

The goods will be delivered to the NE Substation located off of Hubbard Avenue in Batavia, IL.

Non-Collusion Affidavit

The Municipality reserves the right, before any award of contract is made, to require any bidder to whom it may make an award of the Principal Contract, to sign a non-collusion affidavit in the form designated below:

STATE OF _____

COUNTY OF _____

_____, being first duly sworn, deposes and says that he is _____ * (sole owner, partner, president, secretary, etc.) of the interest of or on behalf of any undisclosed person, partnership, company, association, organization or corporation; that such bid is genuine and not collusive or sham; that said bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that said bidder has not in any manner, directly or indirectly, sought by agreement, communication or conference with anyone to fix the bid price of said bidder or of any bidder to fix any overhead, profit or cost element of such bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract or anyone interested in the proposed contract; that all statements contained in such bid are true; and, further, that said bidder has not, directly or indirectly, submitted his bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid and will not pay any fee in connection therewith to any corporation, partnership, company, association, organization, bid depository, or any member or agent thereof, or to any other individual except to such person or persons as have a partnership or other financial interest with said bidder in his general business.

Signed: _____

Title: _____

Subscribed and sworn to before me this _____ day of _____ 20 _____

Seal of Notary:

Notary Public

* In making out this form, the title that is not applicable should be struck out. For example, if the Contractor is a corporation and this form is to be executed by its president, the words "Sole Owner, a partner, secretary", etc. should be struck out.

SECTION 00420

Qualifications

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Appointment of Counsel.
- B. Pre-qualifications.
- C. Bidder's Qualifications.
- D. Certifications.
- E. References.
- F. Signatures.

1.02 AWARD OF BID

- A. Failure of Bidder to meet all qualification criteria as stated in these Specifications shall disqualify Bidder from consideration for the Project.
- B. The Owner reserves the right to exclude Bidder from consideration due to the Bidder's failure to present with written documentation his experience and capability to complete the project to the Owner's expectations.
- C. The Owner will be awarding the job on basis of best value – lead time, quality, and price.

PART 2 – QUALIFICATIONS

2.01 APPOINTMENT OF COUNSEL – NON-RESIDENT

- A. Bidder has appointed _____, whose address is _____, as the agent of Bidder for service of process in the event any litigation or controversy results between the Bidder and Owner arising out of the contractual relationship created by the acceptance of this Bid. Bidder agrees that the courts of the State in which the project is located will have jurisdiction over Bidder for all such purposes to the same extent as though Bidder were a resident of the State.

2.02 PRE-QUALIFICATION

- A. Failure of Bidder to meet the Pre-qualification requirements as stated in the Instruction to Bidders Bid shall disqualify Bidder from consideration for the Project.

2.03 BIDDER'S QUALIFICATIONS

- A. Bidder shall prove to the Owner's satisfaction Bidder's experience in completing similar projects, thus demonstrating the ability of the Bidder to complete the Project to the Owner's Satisfaction.
- B. Bidder shall submit written proof and abide by the written proof that the Bidder will complete a minimum of (30) thirty percent of the overall project by his own company and workers.
- C. Bidder shall submit documentation proving that the Bidder is capable of funding the Project and is not in financial hardship.
- D. Bidder shall submit documentation proving that the Bidder uses only qualified, licensed workers experienced in the line of work.
- E. Bidder's subcontractors shall be the responsibility of the Bidder and shall be considered part of the Bidder's company and shall meet qualification requirements for all aspects of the Project.

2.04 CERTIFICATIONS

- A. The Bidder certifies the following as required by law:
 - 1. Bidder has not been convicted of bribery or attempting to bribe an officer or employee of the State, nor has the Bidder made an admission of guilt of such conduct which is a matter of record, nor has an official, agent or employee of the Bidder been so convicted or made such admission of bribery on its behalf and pursuant to the direction or authorization of a responsible official thereof.
 - 2. Bidder is not barred from bidding with any unit of state or local government as a result of unlawful bid rigging.
 - 3. Under penalty of perjury, the Bidder certifies that the Federal Taxpayer Identification Number noted below is correct and the Bidder is doing business as a (please check one):

☐ Individual	☐ Real Estate Agent
☐ Partnership	☐ Government Entity
☐ Corporation	☐ Trust or Estate

4. Bidder, if an individual, is not in default on an educational loan.

2.05 REFERENCES

- A. Bidder shall submit a minimum of three (3) written letters of recommendation with references' signatures and contact information to the Engineer.
- B. These References shall be from the Owner, Project Manager, or other individual who is knowledgeable on the project, or recent previous Projects with very similar Scope of Work completed under the current Bidder's name.
- C. Bidder shall submit a minimum of three (3) company brochures, or company information sheets, along with list of completed equivalent projects.

2.06 SIGNATURES

Firm Name: _____

Federal Taxpayer Identification Number: _____

By: _____

Title: _____

By: _____

Title: _____

Note: If the Bidder is a corporation, the legal name of the corporation shall be set forth above together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation; if the Bidder is a partnership, the true name of the firm shall be set forth above together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership; and if the Bidder is an individual, his signature shall be placed above. If signature is by an agent, other than an officer of a corporation or member of a partnership, a power of attorney must be submitted with the bid.

PART 3 – EXECUTION *NOT USED*

BID BOND

Any singular reference to Bidder, Surety, Owner, or other party shall be considered plural where applicable.

BIDDER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address): **City of Batavia**
100 N Island Avenue
Batavia, IL 60510

BID

Bid Due Date: September 29, 2026

Project: NE Substation Upgrades – Transformer Purchase

BOND

Bond Number:

Date (Not later than Bid due date):

Penal sum

(Words)

(Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER**SURETY**

Bidder's Name and Corporate Seal

Seal

Surety's Name and Corporate Seal

Seal

By: _____
Signature and Title

By: _____
Signature and Title
(Attach Power of Attorney)

Attest: _____
Signature and Title

Attest: _____
Signature and Title

Note: Above addresses are to be used for giving required notice.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Surety's liability.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents,
 - 3.2. All Bids are rejected by Owner
 - 3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.



BID PROPOSAL

CITY OF BATAVIA

PROJECT: NE Substation Upgrades – Transformer Purchase

NAME OF BIDDER: _____

BUSINESS ADDRESS: _____

TELEPHONE NUMBER: (_____) _____

TO:

City of Batavia
Attn: Electric Department
100 N Island Avenue
Batavia, Illinois 60510

The proposal from the Contractor shall consist of the submission of the completed Contract Documents and supplemental addendums as received from the Owner. The bid shall be made on the BID PROPOSAL, BID SCHEDULE, BID CONDITIONS, AND BID FORM provided as part of these Bidding Documents and shall be accompanied by a bid guarantee in the form of a Certified or Cashier's check from a responsible solvent bank or Bid Bond made payable to the **City of Batavia** in the amount of five percent (5%) of the bid amount. The amount of the bid guarantee shall be forfeited to the Owner if the Bidder neglects or refuses to enter into a Contract or to furnish performance security after the bid has been accepted.

The undersigned, as Bidder, declares that the only person or parties interested in this Bid, as principals, are those named herein; that this Bid is made without collusion with any other person, firm, or corporation; that the Bidder has carefully examined the location of the proposed work, the proposed forms, and the Contract Specifications for the above signed work, all of which are on file in the office of the City Engineer of the City of Batavia and all other documents referred to or mentioned in the Contract Documents and Specifications.

The undersigned Bidder agrees that if this Bid is accepted, the Bidder will contract with the Owner, in the form of the copy of the Contract prepared by the City of Batavia, to provide all necessary machinery, tools, apparatus, and other means of construction, including utility and transportation services, necessary to do all the work and furnish all the materials and equipment specified or referred to in the Contract Documents in the manner and time therein prescribed, and according to the requirements of the Owner as set forth therein. The undersigned Bidder further agrees that if this bid is accepted, to furnish the Contractor's bonds and insurance specified in the General Conditions, and to do all other things required if the Contractor by the Contract Documents, and that he will take, in full payment therefore, the sum set forth in the following Bidding Schedule.



BIDDING SCHEDULE

The Bidder shall include in the following schedule, all labor, materials, shoring, removal, freight, cartage, overhead, profit, insurance, etc. to provide the project complete and ready for use in accordance with the Contract Documents.

BID FORM

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This Bid is submitted by: _____

Bid Form

ARTICLE 1 - BID RECIPIENT

1.01 This Bid is submitted to:

**City of Batavia
100 N Island Avenue
Batavia, IL 60510**

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Contract with Buyer in the form included in the Bidding Documents to furnish the Goods and Special Services as specified or indicated in the Bidding Documents, for the prices and within the times indicated in this Bid, and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 - BIDDER'S ACKNOWLEDGMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Buyer.

ARTICLE 3 - BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, the related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date
_____	_____
_____	_____

B. Bidder has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided and become familiar with and is satisfied as to the observable local conditions that may affect cost, progress, or the furnishing of Goods and Special Services, if required to do so by the Bidding Documents, or if, in Bidder's judgment, any local condition may affect cost, progress, or the furnishing of Goods and Special Services.

C. Bidder is familiar with and is satisfied as to all Laws and Regulations in effect as of the date of the Bid that may affect cost, progress, and the furnishing of Goods and Special Services.

- D. Bidder has carefully studied, considered, and correlated the information known to Bidder; information commonly known to sellers of similar goods doing business in the locality of the Point of Destination and the site where the Goods will be installed or where Special Services will be provided; information and observations obtained from Bidder's visits, if any, to the Point of Destination and the site where the Goods will be installed or Special Services will be provided; and any reports and drawings identified in the Bidding Documents regarding the Point of Destination and the site where the Goods will be installed or where Special Services will be provided, with respect to the effect of such information, observations, and documents on the cost, progress, and performance of Seller's obligations under the Bidding Documents.
- E. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution (if any) thereof by Engineer is acceptable to Bidder.
- F. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for furnishing the Goods and Special Services for which this Bid is submitted.

ARTICLE 4 - BIDDER'S CERTIFICATIONS

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding.
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. "Corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
 - 2. "Fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Buyer,

(b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition.

3. “Collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels.
4. “Coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process.

ARTICLE 5 - BASIS OF BID

5.01 Bidder will furnish the Goods and Special Services in accordance with the Contract Documents for the following price:

#	Size (mva)	Primary Voltage	Secondary Voltage	Price per Unit
1.)	45/60/75	138,000	34,500	

Total Bid Price: \$

SCHEDULE GUARANTEES

Drawing Submittal:	_____	Calendar days from ARO
Assembly Complete:	_____	Calendar days from ARO
Factory Testing Complete:	_____	Calendar days from ARO
Delivery:	_____	Calendar days from ARO

EQUIPMENT DETAILS

See next page for data to be submitted with bid.

5.02 It is understood and agreed by the undersigned that the Municipal Utility reserves the unrestricted privilege to reject the foregoing proposal indicated above and which the Municipality may consider excessive or unreasonable; to accept such proposal which it may consider fair and reasonable.

The lump sum of the proposal shall be the basis for establishing the amount of the performance bond and for comparison of bids.

The above delivery dates and times are to be filled in by the bidder before submitting his proposal.

DATA TO BE SUBMITTED WITH PROPOSAL

PART 1 - GENERAL

1.01 TRANSFORMER DATA:

A. Manufacturer: _____

B. Type of Construction: _____

C. Winding Material:

1. Low Voltage: _____

2. High Voltage: _____

D. Shipment:

1. Is transformer shipped upright? _____

2. Is transformer shipped filled with oil? _____

3. Major items shipped unassembled. _____

4. Are transformer, radiators, and all other items
shipped in one carload? _____

If not, state how many carloads. _____

5. Shipment of transformer will be made from (location). _____

6. Transformer shipping Method (Carrier) _____

E. Dimensions and Weights:

1. Width, overall _____

2. Depth, overall _____

3. Height of top of tank _____

DIVISION 3 – DATA TO BE SUBMITTED WITH PROPOSAL: continued

4. Height over LV bushings _____
 5. Dimensions of LV bus duct flange _____
 6. Height over HV bushings _____
 7. Total weight _____
 8. Shipping weight _____
 9. Weight of core and coils _____
 10. Weight of case and fillings _____
 11. Weight of oil _____
 12. Gallons of insulating oil _____
 13. Approx. base dimensions _____
 14. HV bushing stud dimension _____
 15. LV bushing stud dimension _____
 16. Proposal outline drawing _____
- F. No Load Losses:
1. 90 percent rated voltage _____
 2. 100 percent rated voltage _____
 3. 110 percent rated voltage _____
- G. Regulation, Percent:
1. At 1.0 pf; 45,000 kVA
 2. At 0.8 pf; 45,000 kVA
 3. At 1.0 pf; 60,000 kVA
 4. At 0.8 pf; 60,000 kVA
 5. At 1.0 pf; 75,000 kVA
 6. At 0.8 pf; 75,000 kVA

DIVISION 3 – DATA TO BE SUBMITTED WITH PROPOSAL: continued

H. Losses and Efficiency:

<u>Guaranteed Losses in kW</u>				<u>Guarantee</u>
	<u>Core</u>	<u>Winding</u>	<u>Aux.</u>	<u>d Efficiency</u>
				<u>Percent</u>
1 At No Load	_____	_____	_____	_____
2 At 45,000kVA	_____	_____	_____	_____
3 At 60,000 kVA	_____	_____	_____	_____
4 At 75,000 kVA	_____	_____	_____	_____
			Positive	Zero

I. Percent Impedances at OA rating

J. Cooling Equipment:

1. ONAN/ONAF/ONAF

2. Number of radiators

3. Cooling Fans:

a. Number

b. HP each

c. Total kVA

K. Oil:

1. Manufacturer

2. Type

3. Gallons of oil shipped separately from main tank

L. Allowable Impact Meter Readings:

1. Longitudinal

2. Vertical

M. Maximum Auxiliary Equipment Load:

1. Voltage

2. kVA

3. Single or three phase

DIVISION 3 – DATA TO BE SUBMITTED WITH PROPOSAL: continued

N. Equipment Locations:

1. Radiator banks Quadrant No. _____
2. Load tap changer Quadrant No. _____
3. HV bushings Quadrant No. _____
4. LV bushings Quadrant No. _____
5. Neutral Xo bushing Quadrant No. _____
6. Terminal cabinet Quadrant No. _____
7. Are H2 and X2 located on same centerline? _____

O. Attach transformer outline drawings with dimensions, weights, Center of Gravity and oil quantity in Gallons

P. Attach complete list of transformer accessories provided with manufacturer's name and model

Q. Attach priced spare part list

5.03 The Bidder shall explicitly identify and clearly describe any and all exclusions, exceptions, qualifications, deviations, or alterations to the requirements of the Contract Documents, including the Specifications, Drawings, and Bid Form. All such exclusions, exceptions, qualifications, deviations, or alterations shall be stated in writing in the space provided below.

Any exclusion, exception, qualification, deviation, or alteration not specifically identified by the Bidder in this section shall be deemed included in the Bidder's Bid Price and shall not relieve the successful Bidder of its obligation to furnish and perform all work, labor, materials, equipment, services, and other requirements in accordance with the Contract Documents.

The Bidder acknowledges that failure to identify an exclusion, exception, qualification, deviation, or alteration in this section constitutes the Bidder's agreement to comply with the Contract Documents as issued.

Bidder's Exclusions, Exceptions, Qualifications, or Deviations:

[illegible]

☐ **NO EXCLUSIONS OR EXCEPTIONS:** The Bidder has reviewed the Contract Documents and has included all required work, labor, materials, equipment, services, and other requirements in the Bid Price, with no exclusions, exceptions, qualifications, deviations, or alterations.

ARTICLE 6 - PLACE OF MANUFACTURING

6.01 Client reserves the right to award based on preferred manufacturing location.

ARTICLE 7 - TIME OF COMPLETION

7.01 Bidder agrees that the work will be substantially complete on or before date specified in 5.01 and will be completed and ready for final payment in accordance with the General Conditions on or before 30 days after date specified in 5.01.

7.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 8 - ATTACHMENTS TO THIS BID

8.01 The following documents are attached to and made a condition of this Bid:

- A. List of Proposed Major Suppliers.
- B. Affidavit of Non-Collusion.
- C. List of Project References.
- D. Bidder's Qualifications.

ARTICLE 9 - DEFINED TERMS

9.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders and the General Conditions.

ARTICLE 10 - BID SUBMITTAL

10.01 This Bid submitted by:

If Bidder is:

A Corporation

Corporation Name: _____

State of Incorporation: _____

Type: _____

(General Business, Professional, Service, Other)

By: _____

*(Signature – attach evidence of authority to sign)*Name: *(typed or printed)* _____

Title: _____

(Corporate Seal)

Attest: _____

(Signature of Corporate Secretary)

Business Address: _____

Phone: _____

Email Address: _____

A Limited Liability Company (LLC)

LLC Name: _____

State in which organized: _____

By: _____

*(Signature – attach evidence of authority to sign)*Name: *(typed or printed)* _____Business Address: _____

Phone: _____

Email: _____



BID CONDITIONS

It is expressly understood and agreed that the foregoing Total Bid amount is the basis for establishing the amount of the bid security on this bid for the NE Substation Upgrades – Transformer Purchase. The undersigned has carefully checked the above Bidding Schedule against the Specifications and other Contract Documents before preparing this bid and accepts the said quantities to be substantially correct, both as to classification and amount, and in accordance with the Specifications and other Contract Documents.

If this Bid is accepted and the undersigned shall fail to Contract as aforesaid and to give the Performance Security required by the General Conditions of Contract or by law, and to provide all insurance as required by the Contract Documents within fifteen (15) calendar days after the date of the award of the Contract, and thereupon the proposal and the acceptance thereof shall be null and void, and the forfeiture of such security accompanying this proposal shall operate.

.



PROPOSAL SIGNATURE

1. **CORPORATION:**

The Bidder is a corporation organized and existing under the laws of the State of _____, which operates under the legal name of

Corporate Name: _____

Business Address: _____

Telephone Number: _____

and the full name of its officers names are as follows:

President: _____

Secretary: _____

Treasurer: _____

Manager: _____

The signator is authorized to sign construction proposals and Contracts for the company by action of its Board or Directors taken, a certified copy, which is available upon request.

Signed By: _____
Title:

Date: _____

Attest: _____
Secretary



2. **PARTNERSHIP:**

The Bidder is a partnership consisting of individual partners whose full names and addresses are as follows:

Name: _____

Address: _____

Name: _____

Address: _____

Name: _____

Address: _____

The Partnership does business under the legal name of:

Firm Name: _____

Business Address: _____

Telephone Number: _____

Signed By: _____

Title:

Date: _____



3. **INDIVIDUAL:**

The Bidder is an individual whose full name is:

Name: _____

and if operating under a trade name, said trade name is as follows:

Trade Name: _____

Business Address: _____

Telephone Number: _____

Signed By: _____

Title:

Date: _____



CONTRACT

1. **THIS AGREEMENT**, made and concluded this _____ day of _____, 2026 between the **City of Batavia** acting by and through **the City Council of the City of Batavia**, known as the party of the first part, and **Insert Contractor Name, Insert Contractors City, Illinois**, their executors, administrators, successors, or assigns, known as the party of the second part.
2. **WITNESSETH:** That for and in consideration of the payments and agreements mentioned in the Proposal, attached hereto, to be made and performed by the part of the first part and, according to the terms expressed in the Contract Bond referring to these presents, the party of the second part agrees with said party of the first part, at their own proper cost and expense, to do all the work, furnish all materials, and all labor necessary to construct the **NE Substation Upgrades – Transformer Purchase** in accordance with the plans, specifications, and special provisions hereinafter described and in full compliance with all of the parts of this agreement and the requirements of the Engineer under it.
3. And it is also understood and agreed to that the Contract Documents for the NE Substation Upgrades – Transformer Purchase attached hereto, constitute all essential documents of this contract and are a part thereof.
4. **IN WITNESS WHEREOF**, the said parties have executed these presents on the date above mentioned.

For the Owner,
Party of the First Part

City of Batavia

Attest:
(Corporate Seal)

City Clerk

By: _____
Jeffery D. Schielke, Mayor

For the Contractor,
Party of the Second Part

Insert Contractor Name, Insert City, Illinois

Printed Name: _____

Signature: _____
President, Party of Second Part

Attest: Secretary



STANDARD FORM OF PERFORMANCE AND PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____
a corporation organized under the laws of the State of _____ and
licensed to do business in the State of Illinois, as Principal, and
_____ a corporation organized and existing under the laws of the
State of _____, with authority to do business in the State of Illinois, as
Surety, are held and firmly bound unto the City of Batavia, State of Illinois, in the penal sum
of _____ Dollars (\$ _____), lawful money of the United
States, well and truly to be paid unto said City of Batavia, Illinois for the payment of which
we bind ourselves, our successors, and assigns, jointly, severally, and firmly by these
presents, being One Hundred Ten percent (110%) of the cost of the Public Improvements
described herein.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that whereas, the
said Principal has entered into a written contract with an Owner which is the City of Batavia,
Illinois and acts through the City Council of the City of Batavia for the construction of the
work designated **NE Substation Upgrades – Transformer Purchase (“Public
Improvements”)**, which contract hereby is referred to and made a part hereof, as if written
herein at length, and whereby the said Principal has promised and agreed to perform said
work in accordance with the terms of said contract, and has promised to pay all sums of
money due for any labor, materials, apparatus, fixtures or machinery furnished to such
Principal for the purpose of performing such work and has further agreed to pay all direct
and indirect damages to any person, firm, company, or corporation suffered or sustained on
account of the performance of such work during the time thereof and until such work is
completed and accepted; and has further agreed that this bond shall insure to the benefit of
any person, firm, company, or corporation, to whom any money may be due from the
Principal, sub-contractor, or otherwise, for any such labor, materials, apparatus, fixtures, or
machinery so furnished and that suit may be maintained on such bond by any such person,
firm, company, or corporation, for the recovery of any such money.

NOW THEREFORE, if the said Principal shall well and truly perform said work in
accordance with the terms of said contract, and shall pay all sums of money due or to
become due for any labor, materials, apparatus, fixtures, or machinery furnished to the
Contractor for the purpose of constructing such work, and shall commence and complete
the work within the time prescribed in said contract, and shall pay and discharge all
damages, direct and indirect, that may be suffered or sustained on account of such work
during the time of the performance thereof and until the said work shall have been
accepted, and shall hold the aforesaid Owner and its or the Owner’s agents harmless on
account of any such damages, and shall in all respects fully and faithfully comply with all
the provisions, conditions, and requirements of said contract, then this obligation to become
void; otherwise, and until such time, is shall remain in full force and effect.



Approved this _____ day of _____

A.D. 20__.

IN WITNESS WHEREOF, we have
duly executed the foregoing obligation

this _____ day of _____,

A.D. 20__.

Batavia City Council
Governing Body of Owner

By: _____
Jeffery D. Schielke, Mayor

Corporate
Name: _____

By: _____
President

Attest:

Attest: _____
Secretary

For: _____

Surety _____
(Seal)

City Clerk

By: _____
Attorney in Fact (Seal)

Municipal or Corporate Seal

By: _____
Attorney in Fact (Seal)

State of Illinois

SS.

County of Kane



NOTICE OF AWARD

To:

Contractor Name: *****
Street Address: *****
Town, State, Zip Code: *****

Project Description: *****

The OWNER has considered the Bid Proposal submitted by you for the above-described WORK.

You are hereby notified that your Bid Proposal has been accepted for items in the amount of \$**** or at the Proposal Unit Prices.

You are required by the Bid Conditions to execute the CONTRACT and furnish the required Performance Security and Certificates of Insurance within fifteen (15) calendar days from the date of this Notice of Award.

If you fail to execute said CONTRACT and to furnish said Performance Security and Certificates of Insurance within fifteen (15) calendar days from the date of this Notice of Award, the OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your Bid Proposal as abandoned and as a forfeiture of your Bid Guarantee. The OWNER will be entitled to such rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this **th day of **** 200__.

City of Batavia
Owner

By: _____
Title: City Engineer

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged this _____ day of _____, 200__.

By: _____

Printed Name: _____

Title: _____



PART II

General Conditions of the Contract.....GC 1 - 15

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GENERAL CONDITIONS OF THE CONTRACT

1. DEFINITIONS:

The following terms as used in these contract documents are respectively defined as follows:

- a. **“Project”**: The entire improvement proposed by the Owner to be constructed in whole or in part pursuant to the within contract.
- b. **“Owner”**: The contracting party initiating the project as set forth in the contract acting through its authorized representative in accordance with specific duties delegated to such representatives.
- c. **“Contractor”**: The person, persons, firm or corporation to whom the within contract is awarded by the Owner, and who is subject to the terms of said contract. Also the agents, employees, workmen, or assignees of said Contractor.
- d. **“Sub-Contractor”**: A person, firm or corporation other than the Contractor, supplying labor and materials, or labor only, on work at the site of the project.
- e. **“Work”**: All work including materials, labor, supervision, use of tools necessary to complete the project in full compliance with the terms of the contract.
- f. **“Engineer”**: The person, persons or firm named in the Instructions to Bidders as having prepared the Contract Documents, or other Engineers appointed by the Owner for the supervision of construction of the project.
- g. **“Surety”**: The person, firm or corporation that has executed, as Surety, the Contractor’s Performance Bond, securing the performance of the within contract.
- h. **“Contract”**: The term “Contract” shall be understood to mean the agreement covering the performance of the work covered by these specifications, including the Instructions to Bidders, Bid Proposal, Bid Conditions, Bid Schedule, Standard Form of Contract Bond, Performance Bond, these Specifications, supplemental agreements entered into, all general or special provisions pertaining to the work or materials therefore, and all matters and things mentioned in the form of the contract itself as constituting a part or parts thereof.

2. **HOLD HARMLESS AGREEMENT (CONTRACTUAL LIABILITY):**

The Bidder agrees to indemnify and save harmless the City, including its elected or appointed officials, employees, and agents against any and all claims, loss, damage, injury, liability, and court costs and attorney's fees incident thereto, including any claims made by employees of the Bidder or any of their subcontractors, as well as all other persons, resulting directly or indirectly from the work covered by this contract or the equipment used in connection therewith. It is understood that this agreement shall apply to any and all such claims whether resulting from the negligence or the intentional acts of the Bidder, or otherwise, provided, however, this indemnification shall not apply to any claim, damage, loss, or expense arising solely out of professional services performed by the City, its agents, or employees, including 1) the preparation of maps, plans, opinions, reports, surveys, designs, or specifications, and 2) supervisory, inspection, or engineering services).

Special Requirement: If the Bidder is an architectural firm or engineering firm, said Bidder shall, in addition to the insurance requirements set forth below, file a certificate of insurance for professional liability, errors and omissions coverage subject to final acceptance by the City of said coverage. Professional Liability Insurance is requirements are in the amount of \$1,000,000, plus \$2,000,000 umbrella.

3. **CONTRACTOR'S INSURANCE:**

The Bidder will provide certificates of insurance evidencing the following types and limits of insurance. The certificates of insurance will specifically address each of the requirements noted below. Each insurance company shall be acceptable to the City. The General Liability coverage shall name the City of Batavia and BHMGE Engineers, Inc. as additional insured. All insurance noted below is primary and in no event will be considered contributory to any insurance purchased by the City. All insurance noted below will not be canceled, reduced, or materially changed without providing the City thirty (30) days advance notice, via certified mail.

- a. **Comprehensive General Liability** including Products Liability/Completed Operations insurance, in an amount not less than \$5,000,000/occurrence, \$5,000,000/policy limit, including Broad Form Contractual Liability insurance, in an amount not less than \$5,000,000/occurrence, \$5,000,000/policy limit, subject to the terms and conditions of the policy, plus \$5,000,000 umbrella. A copy of the policy may be required.
- b. **Automobile Liability** insurance, in an amount not less than \$2,000,000 combined single limit, plus \$5,000,000 umbrella. Said insurance is to be extended to cover hired and non-owned vehicles.
- c. **Umbrella or Excess Liability** coverage, the Contractor shall provide evidence of Umbrella or Excess Liability coverage of \$5,000,000.
- d. **Workers' Compensation** is to be provided as required by statute.

- e. **Insurance Rating** – All insurance policies required by this contract shall be underwritten by insurance companies with a minimum A. M. Best rating of A.
- f. A certificate of insurance is required as evidence of coverage, with the City of Batavia and BHMG Engineers, Inc. named as an additional insured. The same full insurance coverage provided to the named insured, whether it is the Contractor or a sub-contractor, shall be provided to the City without any limitations or endorsements that might limit or exclude coverage. If insurance is canceled for any reason whatsoever the City will be given not less than thirty (30) days prior written notice.

The Bidder shall not commence work under this contract until they have obtained all insurance required under this section and such insurance has been approved by the City, nor shall Bidder allow any subcontractor to commence work on their subcontract until the same insurance has been obtained by the subcontractor. The Bidder and their subcontractor(s) shall maintain all insurance required under paragraphs A through D of this Section for not less than one (1) year after completion of this contract.

4. **PROOF OF CARRYING INSURANCE:**

The Contractor shall furnish the Owner with satisfactory proof of carriage of the insurance required in a reliable company or companies, before commencing any work. Such proof shall consist of certificates executed by the representative insurance companies and filed with Owner. The Contractor shall submit the original insurance policies for inspection and approval of the Owner before work is commenced. Said policies shall not thereafter be canceled, permitted to expire, or be changed without written notice of ten (10) days in advance to the Owner and consented to by the Owner.

The Contract shall name the City of Batavia and BHMG Engineers, Inc. as an additional insured on all insurance policies required under this contract. Unless waived by the City, work may not start under this project, until certificates of insurance naming the City and BHMG Engineers, Inc. as an additional insured have been provided to the City. Any delay in the beginning of work caused by failure to provide such certificates shall not be chargeable to the City of Batavia.

5. **DEFINITION OF NOTICE:**

Where in any section of the Contract Documents there is any provision in respect to the giving of any notice, such notice shall be deemed to have been given;

- a. **As to the Owner:** When written notice shall be delivered to the Engineer of the Owner, or shall have been placed in the United States mails addressed to the Chief Executive Officer of the Owner at the place where the bids, or proposals for the contract were opened;

- b. **As to the Contractor:** When a written notice shall be delivered to the chief representative of the Contractor at the site of the project to be constructed under the contract, or when such written notice shall have been placed in the United States mails addressed to the Contractor at the place stated in the papers prepared by the Contractor to accompany their proposal as the address of the Contractor's permanent place of business;
- c. **As to Surety:** On the Performance Bond, when a written notice is placed in the United States mails addressed to the Surety at the home office of such Surety, and when two (2) copies of such notice shall have been filed with the Owner.

6. **INTENT OF CONTRACT DOCUMENTS:**

The sections of the Contract Documents and the contract plans are complementary, and what is called for by one shall be as binding as if called for by all. The intention of the contract documents is to include in the contract price the cost of all labor, water, fuel, tools, plant equipment, light, transportation, and all other expense as may be necessary for the proper execution of the work.

In interpreting the contract documents, words describing materials or work which have a well-known technical or trade meaning, unless otherwise specifically defined in the contract documents shall be construed in accordance with such well-known meaning recognized by architects, engineers and the trade.

The Contractor shall execute any work shown on the plans and not covered in the specifications or included in the specifications and not shown on the plans as though shown both on the plans and included in the specifications. If the plans and specifications should be contradictory in any part, the specifications shall govern.

7. **PLANS AND SPECIFICATIONS:**

All work executed in strict conformity with the plans and specifications, and the Contractor shall do no work without proper drawings and instructions.

Unless otherwise provided in the Special Conditions of the Contract, the Owner will furnish the Contractor, free of charge, three (3) copies of drawings and specifications. Additional copies will be furnished upon payment to the Engineer, at the Contractor's cost, for each set desired.

Figured dimensions on the plans shall be taken as correct but shall be checked by the Contractor before starting construction. Any errors, omissions, or discrepancies shall be brought to the attention of the Engineer, and the Engineer's decision thereon shall be final. All notes on the plans shall be followed. The Engineer may make correction or errors, or omissions on the drawings or specifications when such correction is necessary for the proper execution of the work.

8. **PERMITS, SURVEYS AND COMPLIANCE WITH LAWS:**

The Contractor shall procure and pay for all permits, licenses and bonds necessary for the prosecution of the work and/or required by Municipal, State and Federal regulations, and laws, unless otherwise specified in the Special Conditions of the Contract.

The Owner will furnish all site surveys, unless otherwise provided in the Special Conditions of the Contract.

The Contractor shall give all notices, pay all fees and comply with all Federal, State and Municipal laws, ordinances, rules and regulations, and building and construction codes bearing on the conduct of the work. The contract as to all matters not particularly referred to and defined herein shall notwithstanding be subject to the provisions of all pertinent ordinances of the Municipality within whose limits the work is constructed, (which ordinances are hereby made a part hereof with the same force and effect as if specifically set out herein).

9. **OTHER CONTRACTS:**

The Owner may award other contracts for additional work at the site of the project (or other locations) and the Contractor shall fully cooperate with such other Contractors and carefully set the Contractor's own work to that provided under other contracts as may be directed by the Owner. The Contractor shall not commit or permit any act, which will interfere with the performance of work by any other Contractor.

10. **SCHEDULE OF UNIT PRICES:**

Promptly following the execution of the Contract Documents, on Lump Sum Contracts, the Contractor shall prepare and transmit to the Owner an original and three (3) copies of an itemized breakdown showing the unit quantities of each item and the corresponding unit prices divided between labor, material and other costs of all items of labor, equipment and supplies to be incorporated into the project. This breakdown, when approved, will be used primarily in determining payment due to the Contractor on periodical estimates.

11. **SUB-CONTRACTORS:**

The Contractor shall notify the Owner in writing of the names of the Sub-Contractors proposed on the contract and shall not employ any Sub-Contractor that the Owner objects to as being incompetent or unfit.

The Contractor agrees to be fully responsible to the Owner for the acts or omissions of their Sub-Contractors and of anyone employed directly or indirectly by the Contractor of them and this Contract obligation shall be in addition to the liability imposed by law upon the Contractor.

Nothing contained in the Contract Documents shall create any contractual relationship between any Sub-Contractor and the Owner.

The Contractor agrees to bind every Sub-Contractor (any and every Sub-Contractor of a Sub-Contractor) by the terms of the General and Special Conditions of the Contract, Plan and Specifications as far as applicable to their work, unless specifically noted to the contrary in a Sub-Contract approved in writing as adequate by the Owner.

12. **ASSIGNMENT OF CONTRACT:**

No assignment by the Contractor by a principal and/or construction contract or any part thereof or of the funds to be received thereunder by the Contractor will be recognized unless such assignment has had the written approval of the Owner, and the Surety has been given due notice of such assignment and has furnished written consent thereto. Such written approval by the Owner shall not relieve the Contractor of the obligation incurred by the Contractor under the terms of this Contract. In addition to the usual recitals in assignment contracts, the following language must be set forth:

"It is agreed that the funds to be paid to the assignee under this assignment are subject to a prior lien for services rendered or materials supplied for the performance of work called for in said contract in favor of all persons, firm or corporations rendering such services or supplying such materials."

13. **STAKING WORK:**

The Contractor shall provide field forces, equipment, and material to set all stakes for this project, which are needed to establish offset stakes, reference points, and any other horizontal or vertical controls, including supplementary bench marks, necessary to secure a correct layout of the work.

Stakes for line and grade shall be set at sufficient station intervals (not to exceed 15 m (50 ft.)) to assure substantial conformance to plan line and grade. The Contractor will not be required to set additional stakes to locate a utility line which is not included as a pay item in the contract, nor to determine property lines between private properties.

The Contractor shall be responsible for having the finished work conform to the lines, grades, elevations and dimensions called for in the plans. Any inspection or checking of the Contractor's layout by the City Engineer and the acceptance of all or any part of it shall not relieve the Contractor of the Contractor's responsibility to secure the proper dimensions, grades and elevations of the several parts of the work. The Contractor shall exercise care in the preservation of stakes and benchmarks and shall have them reset at the Contractor's expense when any are damaged, lost, displaced, or removed or otherwise obliterated.

14. **NOTICE TO START WORK:**

The Contractor shall notify the Engineer in writing forty-eight (48) hours before starting work at the site of this Contract. In case of temporary suspension of the work, the Contractor shall give a similar notice before resuming work.

15. **SUPERINTENDENT:**

The Contractor shall provide a personal superintendent to the work or have at the site of the work at all times, a competent, fluently English-speaking foreman, superintendent or other representative satisfactory to the Owner and having authority to act for the Contractor.

Insofar as it is practicable and excepting in the event of discharge by the Contractor, or in the event of proven incompetence, the individual who has been accepted to represent the Contractor shall so act, and shall follow without delay instructions of the Engineer in the prosecution of the work in conformity with the contract.

16. **MATERIALS AND WORKMANSHIP:**

Unless otherwise stipulated in the specifications, all workmanship, equipment, materials and articles incorporated in the work covered by this Contract are to be new and of the best grade of their respective kinds for the purpose.

If not otherwise provided, work called for in this Contract shall be furnished and performed in accordance with well known established practice and standards recognized by architects, engineers and the trade. The Contractor and the Surety shall guarantee all workmanship for a period of one (1) year from date of final acceptance.

Any workmanship found at any time to be defective shall be remedied at once regardless of previous inspections.

At any time during the course of construction of this project, when in the opinion of the Engineer, provisions of the plans, specifications, or contract provisions are being violated by the Contractor or the Contractor's employees, the Engineer shall have the right and authority to order all construction to cease, until arrangements satisfactory to the Engineer are made by the Contractor for resumption of the work in compliance with the provisions of the contract.

17. **USE OF JOB SITE:**

The Contractor shall confine their equipment, apparatus, the storage of materials and operations of the workmen to limits indicated by law, ordinance, permits or direction of the Owner and shall not encumber the premises with the Contractor's materials.

The Contractor shall not load or permit any part of the structure or work to be loaded with a weight that will endanger its safety. The Contractor shall enforce the Owner or Owner's authorized representative instructions regarding signs, advertisements, fires and smoke.

18. **USE OF PRIVATE LAND:**

The Contractor shall not use any vacant lot or private land as a plant site, depository for materials, or as a spoil site without written authorization of the Owner (or the Owner's agent) of the land, a copy of which authorization shall be filed with the Owner.

19. **LABOR:**

The Contractor shall employ none but competent and skilled workmen and foremen in the conduct of work in this Contract. The Owner shall have the authority to order the removal from the work of any Contractor's employee who refuses or neglects to obey any of its instructions, or those of its Engineer or inspectors relating to the carrying out of the provisions and intent of the provisions of the contract, or who is incompetent, unfaithful, abusive, threatening, or disorderly in their conduct, and any such person shall not again be employed on this project.

20. **WAGE RATES:**

Prevailing minimum wage rates shall apply for this project. A copy of the current prevailing minimum wage is included in these documents.

The Contractor shall post, at conspicuous points on the site of the project, a schedule showing all determined minimum wage rates and will authorize deductions, if any, from unpaid wages actually earned.

The Owner shall decide claims and disputes pertaining to the classification of labor employed on the project under this Contract. Provided that if the parties to the dispute so agree and if the Owner also agrees, the parties concerned may submit such claims and disputes to arbitration by mutually acceptable parties.

The Contractor and each of their Sub-Contractors shall pay each of their employees engaged in work on the project under this Contract in full (less deductions made mandatory by law) not less often than once each week.

21. **ACCIDENT PREVENTION:**

Precaution shall be exercised at all times for the protection of motorists, bicyclists, pedestrians (including employees) and property. The safety provisions of applicable laws, building and construction codes shall be observed. Machinery equipment and all hazards shall be guarded or eliminated in accordance with the safety provisions of the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America, to the extent that such provisions are not contravention of applicable law.

The Contractor shall put up and maintain as many barriers as will effectively prevent accidents involving motorists, bicyclists and pedestrians. During night hours, the Contractor shall put up and maintain sufficient lights and flares to warn and safeguard motorists, bicyclists and pedestrians against accidents. The Contractor, in executing the work on this project, shall not unnecessarily impede or interfere with vehicular, bicycle or pedestrian traffic on public rights-of-ways. The Owner shall be the sole judge as to what constitutes a hazard. The Contractor shall confer with and keep Police and Fire Departments of the Owner fully informed as to streets or alleys are to be closed (daily or long-term) to traffic for construction purposes.

22. **SANITARY CONVENIENCES:**

The Contractor shall provide and maintain on the construction work at all times, suitable sanitary facilities for use of those employed on this Contract without committing any public nuisance. Pit-type toilets shall be of proper design and fly tight. All toilet facilities shall be subject to approval of the State Health Department.

23. **ENGINEER:**

The Engineer for said Owner shall make all necessary explanations as to the meaning and intention of the plans and specifications, shall give all necessary orders and directions, acting within the scope of the particular duties properly assigned to the Engineer by the Owner; shall also make all correction of errors or omissions in the plans and specifications when necessary for the proper fulfillment of the intention thereof; the effect of such correction to date from the time said Owner or Engineer gives due notice thereof to said Contractor.

24. **DECISIONS OF ENGINEER:**

The decision of the Engineer, acting within the scope of the duties reasonably assigned to the Engineer, will be final. The signing of the contract for construction shall be considered as the Contractor's agreement to accept the Engineer's decision as final in all such matters as may reasonably require engineering decisions, such as the quality of workmanship, the performance of equipment and of the fulfillment of the guarantee thereon.

25. **DIRECTION:**

The directions and orders given by the Owner, or its authorized representatives, shall be received by and obeyed by the Contractor, or in the Contractor's absence, the said order shall be received by the Contractor's foreman or person in charge of the work and shall be obeyed by same as if given to the Contractor. There shall be at all times a competent and responsible person available to represent the Contractor.

26. **INSPECTION:**

The Owner and its representative shall at all times have access to the work wherever it is in preparation or progress and the Contractor shall provide proper facilities for such access and for inspections.

The Owner shall have the right to reject workmanship, which is defective, or require their correction. If the Contractor does not correct such condemned work within a reasonable time, fixed by written notice, the Owner may remove them and charge the expense to the Contractor.

All labor performed, all tools, appliances and methods used shall be subject to the inspection and approval or rejection of the Owner.

If any authorized agent of the Owner shall point out to the Contractor, the Contractor's foreman or agent, any neglect or disregard to the contract provisions, such neglect or disregard shall be remedied, and further defective work be at once discontinued. The right of final acceptance or rejection of the work, however, will not be waived by reason thereof nor by any other act of the Owner or its agents.

The Contractor shall execute the work only in the presence of the Engineer or inspectors during the working hours of the day unless provision has been made for work on other shifts. The presence of the Engineer or inspector shall in no way relieve the Contractor of the responsibility of the Contractor's contract, or by any warrant for the furnishing of poor workmanship.

The inspection and supervision of the work by the Engineer is intended to aid the Contractor in applying labor, materials and workmanship in compliance with the contract provisions. Such inspection and supervision, however, shall not operate to release the Contractor from any of the Contractor's contract obligations.

27. **PROTECTION OF WORK:**

The Contractor shall continuously maintain adequate protection of all their work from damage and shall protect the Owner's and adjacent property from injury arising in connection with this contract.

The Contractor will be responsible for any and all damage to property, public or private, that may be caused by the Contractor's operations, in the performance of this Contract, and the Contractor shall defend any suit that may be brought against the Contractor or the Owner on account of damage inflicted by the Contractor's operations, and shall pay any judgments awarded to cover such damage.

28. **OBSTRUCTION AND RESUMING TRAVEL:**

Motorists, bicyclists and pedestrians traveling upon the streets, or upon any intersecting street or alley shall not be hindered or inconvenienced needlessly; nor shall any portion of the roadway, street, path or sidewalk be excavated, nor shall the same be wholly obstructed without the direction of the Owner, in which latter case, the Contractor shall cause plain and properly worded signs announcing the fact, to be placed, with proper barricades, at the nearest cross streets upon each side of such obstructed portion and upon intersecting streets where travel can pass around the same in the shortest and easiest way. Travel may be resumed at the direction of the proper officers of the Owner upon any part or portion of the roadway, street, path or sidewalk where the work has been completed, whenever, in their opinion, public necessity or convenience may require, and the condition of improvement warrants it. Notice shall be given to the **Fire and Police Departments** of streets open or barricaded for construction purposes at least twenty-four (24) hours before construction is begun.

29. **COST OF SERVICES:**

The cost of all water power, lighting, heating and other services required during construction shall be paid for by the Contractor and its cost merged in the contract price.

30. **PAYMENTS:**

The Contractor shall prepare and submit to the Owner a detailed estimate of the work performed. Such estimate is to be used after approval as a basis for periodical and final payment.

The Owner will make partial payments to the Contractor on the basis of a duly certified approved estimate of the work performed by the Contractor during the preceding time period. The Owner will retain ten percent (10%) of the amount due to each such periodical estimate until final completion and acceptance by the Owner of all work included in the Contract. At the sole discretion of the Owner, the percentage of retained funds may be reduced to five percent (5%), or a lesser percentage, upon successful completion of at least fifty percent (50%) of the value of work contemplated by the Contract.

Upon presentation of certified copies of receipted bills, freight bills, and waivers of lien, the Owner at its discretion, may include in such monthly estimates payments for materials that will eventually be incorporated in the project, provided that such material is suitably stored on the site of the project at the time of submission of the estimate for payment. Such material when so paid for by the Owner becomes the property of the Owner and, in case of default on the part of the Contractor; the Owner may use or cause to be used by others these materials in construction of the project.

Final payment of funds retained by the Owner on the monthly periodical estimates will be paid to the Contractor not later than sixty (60) days after final acceptance by the Owner of the work on this Contract, subject to the provisions of the following paragraph.

31. **OWNER'S RIGHT TO WITHHOLD CERTAIN AMOUNTS AND MAKE APPLICATION THEREOF:**

The Owner may withhold, in addition to retained percentages, from payment to the Contractor, such an amount or amounts as may be necessary to cover:

- a. Payments that may be earned or due for just claims for labor or materials furnished in and about the work.
- b. For defective work not remedied.
- c. For failure of the Contractor to make proper payments to their Sub-Contractor.
- d. Reasonable doubt that the contract can be completed for the balance then unpaid.
- e. Evidence cost of field engineering and inspection.

The Owner shall disburse and shall have the right to act as agent for the Contractor in disbursing such funds as have been withheld, pursuant to this paragraph, to the party or parties who are entitled to payment therefrom. The Owner will render to the Contractor a proper accounting of all such funds disbursed on behalf of the Contractor.

The Owner also reserves the right, even after full completion and acceptance of the work, to refuse payment of retained funds due the Contractor until it is satisfied that all Sub-Contractors, material suppliers and employees of the Contract have been paid in full.

32. **DEDUCTIONS FOR UNCORRECTED WORK:**

If the Owner deems it expedient to accept defective work or work not done in accordance with the contract, the Owner will make an equitable adjustment with a proper deduction from the contract price for unsatisfactory work.

33. **CHARGES-PAYMENTS:**

The Owner may issue written authorization for changes in the work to be performed or the materials to be furnished pursuant to the provisions of this contract.

Adjustments, if any in the amount to be paid to the Contractor by reason of any such change, shall be determined by one (1) or more of the following methods:

- a. By unit prices contained in the Contractor's original bid and incorporated in this construction contract.
- b. By a supplemental schedule of prices contained in the Contractor's original bid and incorporated in this construction contract.
- c. By an acceptable lump sum proposal from the Contractor.
- d. On a cost-plus-limited basis not to exceed a specific limit (defined as the cost of labor, materials, and insurance plus a specified percentage of the cost of such labor, materials, and insurance)

No claim for additional work to the contract sum shall be valid unless prior written authorized has been issued by the Owner.

Inspectors are not authorized at act for the Owner in giving orders for the Owner, for extra or additional work either in writing or verbally.

34. **CUTTING AND PATCHING:**

The Contractor shall do all cutting, fitting or patching of their work that may be required to make its several parts fit together or to receive the work of other contractors shown upon, or reasonably implied by the plans and specifications for the completed project.

Any cost caused by defective or ill-timed work shall be borne by the party responsible therefore.

The Contractor shall not endanger any work by cutting, digging, or otherwise shall not cut or alter the work of any other contract without the consent of the Owner or the Owner's authorized representative.

35. **GUARANTEE AND MAINTENANCE OF WORK:**

The Contractor shall guarantee the work to be free from defects of any nature for a period of one (1) year from and after the final acceptance and payment for the work by the Owner. The Contractor shall maintain said work and shall make all needed repairs, reconditioning and replacements during this one (1) year period which, in the judgment of the Owner, may be necessary to insure the delivery of the work to the Owner at the expiration of the guarantee period in first class condition and in full conformity with the plans and specifications thereof. The time that the work is in need of repair, reconditioning or replacements to attain full conformity with the plans and specifications shall not be included in the one (1) year guarantees included in this Contract but shall be in addition thereto. Production and performance guarantees included in this Contract shall be in effect for the one (1) year period above specified unless otherwise provided for in the specifications for the item under consideration.

36. **TERMINATION FOR BREACH:**

In the event that any of the provisions of this Contract are violated by the Contractor or any of their Sub-Contractors, the Owner may serve written notice upon the Contractor and the Surety of its intention to terminate such contract and unless within ten (10) days after the serving of such notice upon the Contractor, such violation shall cease and satisfactory arrangement for correction be made, the contract shall, upon expiration of said ten (10) days, cease and terminate. In the event of any such termination the Owner shall immediately serve notice thereof upon the Surety and the Contractor and the Surety shall have the right to take over and perform the contract, provided, however, that if the Surety does not commence performance whereon within thirty (30) days from the date of mailing to such Surety notice of termination, the Owner may take over the work and prosecute the same to completion by contract for the amount and at the expense of the Contractor and the Contractor and the Contractor's Surety shall be liable to the Owner for any excess cost thereby occasioned by the Owner.

37. **CORRECTION OF WORK AFTER FINAL PAYMENT:**

Neither the final payment nor any provision in the contract documents shall relieve the Contractor of the responsibility for negligence or faulty workmanship as otherwise provided in this contract and the Owner shall have all rights and remedies available to it in law and equity.

38. **OWNER'S RIGHT TO DO WORK:**

If the Contractor shall neglect to prosecute the work properly or fail to perform any provision of this Contract, the Owner, after three (3) days written notice to the Contractor and the Contractor's Surety, may, without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost thereof from the payment due the Contractor.

39. **FINAL TESTS:**

After completion of the work, the Contractor shall make any and all tests required by Municipal or State regulations and, where so provided in said regulations, shall furnish the Owner with certificates of inspection by the Municipal or State regulation bodies. The Contractor shall also make all test required by the National Board of Fire Underwriters for the purpose of determining insurance rates or other protection of the Owner or the public.

40. **CLEANING UP AND FINAL INSPECTION:**

The Contractor shall at all times keep the site of the work free from accumulation of waste material or rubbish caused by their employees or work and at the completion of the work the Contractor shall remove all their rubbish from the site of the work and all their tools, equipment, scaffolding and surplus materials and shall leave their work clean and ready for use. In case of dispute, the Owner may remove the rubbish and surplus materials and charge the cost to the several Contractors if more than one (1) is employed on the project in proportion to the amount as shall be determined to be just. The Contractor and Sub-contractors shall not dispose of any waste material or rubbish in an open utility trench or a utility trench that is being backfilled.

On or before completion of the work, the Contractor shall, without charge, tear down and remove all buildings and other structures built by the Contractor for facilitation of the execution of the work, and shall remove all rubbish of all kinds from the grounds, which the Contractor has occupied, and shall leave the work clean and in good condition.

The Contractor shall provide a representative to accompany the Owner in performing a pre-construction inspection of all utility manholes, catch basins and inlets. The Owner shall be responsible for ensuring that said utility structures are free and clear of all dirt and debris prior to the start of construction. During construction, the Contractor shall be responsible for any necessary removal of dirt and debris caused by construction activities and shall perform such work within five (5) calendar days after receiving notice from the Owner. If the Contractor fails to perform the work within five (5) calendar days, the Owner may remove the dirt and debris and charge the cost of said removal to the Contractor.

All sewers, conduits, pipes and appurtenances and all tanks, pump wells, chambers, buildings, and other structures shall be kept clean during construction and as the work, or any part thereof, approached completion, the Contractor shall systematically and thoroughly clean and make any needed repairs to them. The Contractor shall furnish, at their own expense, suitable tools and labor for removing all water and cleaning out all dirt, mortar, and foreign substances. The Contractor, at their expense, shall promptly correct any undue leakage of water into the structures that would, in the sole opinion of the Engineer, render the work to be less than first class quality. Cleaning and repairs shall be arranged, so far as practicable, to be completed upon finishing the construction work. Notice to begin the final cleaning and repairing, as such is needed, will be given by the Engineer, who at the same time may make a final inspection of the work. The Engineer will not approve the final estimate of any portion of the work until after the final inspection is made and the work found satisfactory.

41. **MEASUREMENT OF WORK:**

If the proposal for the work under this Contract is on a unit price basis, the actual number of units of each item of work to be constructed may be more or less than the corresponding number given in the proposal sheet or plan, but no variation will be made in the contract unit prices on that account. No extra or customary measurement of any kind will be allowed in measuring the units of work under this Contract, but the actual units of work shall be considered, and all lengths will be measured on the centerline of the work, whether straight or curved. The Contractor will be paid the contract price for each unit of work done, which price will include the cost of all work described in the unit specifications.

42. **FINAL ACCEPTANCE OF THE WORK:**

The Contract shall be deemed as having been finally accepted by the Owner, acting through its Engineer, upon final inspection and written notice by the Engineer. Use of part of the improvement by the Owner before completion of the entire project is not to be construed by the Contractor as an acceptance by the Owner of that part so used.



PART III

Standard Specifications

Special Provisions



STANDARD SPECIFICATIONS

STANDARD SPECIFICATIONS APPLICABLE TO THIS WORK AND CONTRACT:

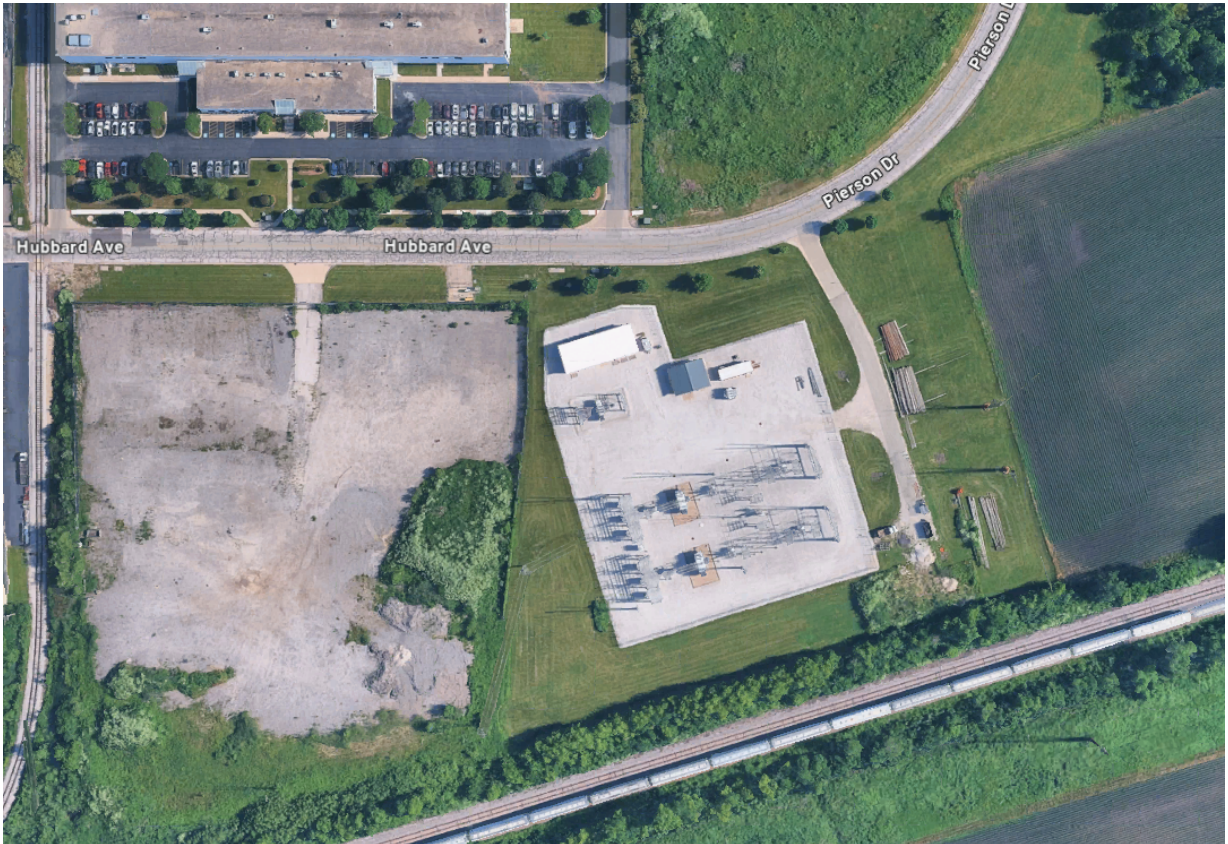
1. The City Code of Batavia, Illinois.
2. All applicable Illinois Department of Transportation traffic control and protection standards.
3. The Manual on Uniform Traffic Control Devices, latest edition.

In the event of conflict between specifications, the more stringent requirements shall apply. Notify the BHMGE Engineer of any conflicts between specifications discovered prior to proceeding with work covered by conflicting specifications. The BHMGE Engineer will resolve all conflicts.

Copies of said Standard Specifications are included on the plans and are on file with the City Engineering Department for inspection.

PART IV

Location Map



PART V

General Requirements

SECTION 01027

Applications for Payment

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 specification sections, apply to this Section.

1.2 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of input to the Construction Schedule.
 - 1. Construction Schedule
 - 2. Application for Payment forms, including Continuation Sheets
 - 3. List of subcontractors
 - 4. List of products
 - 5. List of principal suppliers and fabricators
 - 6. Schedule of submittals
 - 7. Submit the Schedule of Values to the Engineer at the earliest possible date but no later than 7 days before the date scheduled for submittal of the initial Application for Payment.
- B. Format and Content: Provide at least one line item for each major schedule activity or for each Specification Section.
 - 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location
 - b. Name of the engineer
 - c. Project number

- d. Contractor's name and address
 - e. Date of submittal.
2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division
 - b. Description of Work
 - c. Name of subcontractor
 - d. Name of manufacturer or fabricator
 - e. Name of supplier
 - f. Change Orders (numbers) that affect value
 - g. Dollar value
 - h. Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
3. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Break principal subcontract amounts down into several line items.
4. Round amounts to nearest whole dollar; the total shall equal the Contract Sum.
5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment, purchased, or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. Include requirements for insurance and bonded warehousing, if required.
6. Schedule Updating: Update and resubmit the Schedule of Values prior to the next Application for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Engineer and paid for by the Owner.
 - 1. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.
- B. Payment-Application Times: The date for each progress payment is open to the contractor's discretion, keeping in mind that city councils typically meet bi-monthly. The period covered by each Application for Payment starts on the day following the end of the preceding period and ends upon completion of a minimum additional 15% of the project.
- C. Payment-Application Forms: Use AIA Document G702 and Continuation Sheets G703 as the form for Applications for Payment.
- D. Application Preparation: Complete every entry on the form. Include notarization and execution by a person authorized to sign legal documents on behalf of the Contractor. The Engineer will return incomplete applications without action.
 - 1. Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Use updated schedules if revisions were made.
 - 2. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.
- E. Transmittal: Submit two signed and notarized original copies of each Application for Payment to the Engineer by a method ensuring receipt within 24 hours. One copy shall be complete, including waivers of lien and similar attachments, when required.
- F. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of mechanics liens from subcontractors, sub-subcontractors and suppliers for the construction period covered by the previous application.
 - 1. Submit partial waivers on each item for the amount requested, prior to deduction for retention, on each item.
 - 2. When an application shows completion of an item, submit final or full waivers.

3. The Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Waiver Forms: Submit waivers of lien on forms and executed in a manner acceptable to the Owner.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of the first Application for Payment include the following:
1. List of subcontractors
 2. List of principal supplier and fabricators
 3. Schedule of Values
 4. Schedule of principal products
 5. List of Contractor's principal consultants
 6. Copies of building permits
 7. Copies of authorizations and licenses from governing authorities for performance of the Work
 8. Initial progress report
 9. Certificates of insurance and insurance policies
 10. Performance and payment bonds, if required
 11. Data needed to acquire the Owner's insurance.
- H. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment.
1. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
 2. Administrative actions and submittals that shall precede or coincide with this application include:
 - a. Occupancy permits and similar approvals

- b. Warranties (guarantees) and maintenance agreements
 - c. Maintenance instructions
 - d. Startup performance reports
 - e. Changeover information related to Owner's occupancy, use, operation, and maintenance
 - f. Final cleaning
 - g. Application for reduction of retention and consent of surety.
 - h. Advice on shifting insurance coverage
 - i. List of incomplete Work, recognized as exceptions to Engineer's Certificate of Substantial Completion.
- I. Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include the following:
- 1. Completion of Project closeout requirements
 - 2. Completion of items specified for completion after Substantial Completion
 - 3. Assurance that unsettled claims will be settled
 - 4. Assurance that incomplete Work is not accepted and will be completed without undue delay
 - 5. Transmittal of required Project construction records to the Owner
 - 6. Proof that taxes, fees, and similar obligations were paid
 - 7. Removal of temporary facilities and services
 - 8. Removal of surplus materials, rubbish, and similar elements.

PART 2 – PRODUCTS *Not Used*

PART 3 – EXECUTION *Not Used*

END OF SECTION

SECTION 01340

Shop Drawings, Product Data and Samples

PART 1 – GENERAL

1.1 REQUIREMENTS INCLUDE

- A. Contractor shall make submittals to Engineer.
- B. Contractor:
 - 1. Verify field dimensions
 - 2. Verify compliance with Contract requirements
 - 3. Certify review
 - 4. Transmit reviewed submittals to Engineer.

1.2 DEFINITIONS

- A. Shop Drawings: Shop drawings are original drawings prepared by Contractor, subcontractor, sub-subcontractor, supplier or distributor, which illustrate some portion of the work, showing fabrication, layout, setting or erection details.
 - 1. Prepared by qualified detailer
 - 2. Identify details by reference to sheet and detail numbers shown on contract drawings
 - 3. Drawn at scale of 3 inches per foot or larger
 - 4. Maximum sheet size: 24" x 36"
 - 5. Reprints of Engineer's drawings are not acceptable for shop drawings.
- B. Product Data:
 - 1. Manufacturer's standard schematic drawings edited to fit this project.

2. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data.
 3.
 - a. Clearly mark each copy to identify pertinent materials, products or models.
 - b. Show wiring diagrams and controls.
 - c. Show performance characteristics and capacities.
- C. Samples: Physical samples to illustrate materials, equipment or workmanship. Approved samples establish standards by which complete work is judged. Maintain at site as directed. Protect until no longer needed.
1. Office samples: Of sufficient size to clearly illustrate:
 - a. Functional characteristics of product or material.
 - b. Full range of color samples.
 - c. After review, samples may be used on construction of project.
 2. Field samples and mock-ups:
 - a. Erect at project site at location approved by Contractor and Owner.
 - b. Construct each sample or mock-up complete, including work of all crafts required in finished work.
 - c. Remove as directed.

1.3 SPECIFIED PRODUCT LIST AND SAMPLES

- A. Submit to Engineer within 20 business days after Notice to Proceed date, a list of product manufacturers and full range of color samples for each manufacturer, and full range of color samples for each manufacturer's product proposed for installation. No colors will be selected prior to submittal of all products requiring a color selection.
- B. Tabulate list of each specification section.

- C. For products specified under reference standards, include with listing of each products:
 - 1. Name and address of manufacturer
 - 2. Trade name
 - 3. Model or catalog number
 - 4. Manufacturer's data
 - a. Performance and test data
 - b. Reference standards.
- D. Subcontractors' names shall be included in list and must coincide with approved subcontractor list.

1.4 CONTRACTOR RESPONSIBILITIES

- A. Contractor shall review and stamp all shop drawings, product data and samples prior to submission. Failure to follow any or all established procedures set forth shall result in submittals being returned without review, at Contractor's expense.
- B. Contractor shall verify:
 - 1. Field measurements
 - 2. Field construction criteria
 - 3. Catalog numbers and similar data.
- C. Contractor shall coordinate each submittal with requirements of work and contract documents.
- D. Contractor's responsibility for errors and omissions shall not be relieved by Engineer's review of submittal.
- E. Contractor's responsibility for deviations in submittals from requirements of contract documents shall not be relieved by Engineer's review unless written acceptance by Engineer of specific deviations is issued.
- F. Contractor shall notify Engineer in writing at time of submission of deviations within submittal from requirements of contract documents.

- G. Contractor shall begin no work that requires shop drawings or product data submittals until return of submittals bearing Engineer's or professional consultant's stamp and initials or signature.
- H. After Engineer's review, distribute shop drawings and/or product data to appropriate suppliers and subcontractors.

1.5 SUBMISSION REQUIREMENTS

- A. **A completed cover sheet provided at the end of this section shall accompany each individual submittal.**
- B. All submittals shall include:
 - 1. Date and revision dates
 - 2. Project title and number
 - 3. Names of:
 - a. Engineer
 - b. Subcontractor
 - c. Sub-subcontractor
 - d. Supplier
 - e. Manufacturer
 - f. Separate detailer when pertinent.
 - 4. Identification of product or material
 - 5. Relation to adjacent structure or material
 - 6. Field dimensions clearly identified as such
 - 7. Specification section and page number, one specification section per submittal
 - 8. Specified standards, such as ASTM number or ANSI
 - 9. Identification of previously approved deviations from contract documents

10. Engineer will not review submittals unless cover sheet is attached to each individual submittal, signed and stamped by the Contractor.
- C. Allow adequate space on submittal cover sheet for Engineer to affix his stamp.

1.6 RESUBMISSION REQUIREMENTS

- A. Shop Drawings:
 1. Contractor shall revise initial drawings as required and resubmit as specified for initial submission.
 2. Contractor shall indicate on drawings any changes, which may have been made, other than those required by Engineer.
- B. Product Data and Samples:
 1. Submit new data and samples as required for initial submission.
- C. Make all resubmittals within 15 days after Engineer's previous review.

1.7 DISTRIBUTION OF SUBMITTALS AFTER REVIEW

- A. Distribute copies of shop drawings and product data bearing Engineer's or professional consultant's stamp to:
 1. Contractor
 2. Project site file
 3. Other concerned subcontractors
 4. Supplier/fabricator.
- B. Contractor shall distribute samples as directed.

1.8 ENGINEER'S REVIEW

- A. Engineer will review all submittals with reasonable promptness.
- B. Engineer will review for:
 1. Conformance with design concept of project.
 2. Information contained in contract documents.

- C. Engineer's review of a separate item does not constitute review of an assembly within which item functions.
- D. Engineer's or professional consultant's stamp, initials or signature certifying to review of submittal will be affixed.
- E. Engineer will return submittals to contractor for distribution.

PART 2 - PRODUCTS *Not Used*

PART 3 - EXECUTION *Not Used*

END OF SECTION

SHOP DRAWING SUBMITTAL

Date: _____

PROJECT: _____

BHMG Project No: _____

Contractor: _____

_____Presented By: _____
Company Name_____
Address_____
Phone/Fax_____
Contact Person_____
E-Mail Address

Item: _____

Spec Section: _____

By approving and submitting these shop drawings, product data and samples, we represent that we have determined and verified all materials, field measurements and field construction criteria related thereto, or will do so, and that we have checked and coordinated information contained within submittal with requirements of the work and contract documents.

Contractor's Signature_____
Date

SECTION 01450

Quality Control

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Quality Assurance – Control of Installation
- B. Welding
- C. Tolerances
- D. References.

1.2 QUALITY ASSURANCE – CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions and workmanship, to produce work of specified quality.
- B. Comply fully with manufacturer's instructions, including each step in sequence.
- C. Should manufacturer's instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as a minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of specified quality.
- F. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.
- G. The Contractor is the quality control inspector for the project. The Contractor shall review the work and verify that it is in conformance with the contract documents. Any work found not to be in conformance shall be corrected by the Contractor, so that it does conform. As a minimum, the Contractor shall reply within seven days of the discovery of work found not to be in conformance with the contract documents, with a written plan of the corrective action required to bring this work into conformance.

- H. The Engineer and the Owner will make periodic inspections to verify quality control measures.

1.3 WELDING

A. Welding Requirements

- 1. Welding shall be performed by qualified welding operators using procedures qualified in accordance with specified applicable codes and standards.

B. Procedure Qualification

- 1. Contractor, subcontractor, or fabricator performing welding under jurisdiction of referenced codes shall be responsible for obtaining and qualifying welding procedures. Structural welding procedures that conform to AWS D1.1 are prequalified as defined in AWS D1.1.
- 2. Contractor shall keep and maintain records and make available to Engineer, if requested, certifying procedure qualification tests have been completed successfully.

C. Welding Certificates

- 1. After Notice of Award, submit to Engineer, if requested, one copy for each person assigned to do field welding of materials installed for this project.
- 2. Show on certificates that each person has passed tests specified by AWS.
- 3. Submit certificates prior to execution of any welding. Certificates are not required for nonstructural tack welding.

D. Performance Qualification

- 1. Contractor, subcontractor, or fabricator performing welding under jurisdiction of referenced codes shall be responsible for testing and qualifying welding operators in accordance with applicable procedures.
- 2. Unless welding operators have been qualified previously by Contractor (within past six months) and have been continuously employed as welders by Contractor following qualification, requalification tests must be completed.
- 3. Engineer reserves the right to require any welder to retake tests

when, in the opinion of Engineer, work of welder creates reasonable doubt as to welder's proficiency. Engineer may witness any required retesting. Tests shall be at no expense to Owner.

1.4 TOLERANCES

- A. Monitor tolerance control of installed products to produce acceptable work. Do not permit tolerances to accumulate.
- B. Comply with manufacturer's tolerances. Should manufacturer's tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

1.5 REFERENCES

- A. For products or workmanship specified by association, trade, or other consensus standards, comply with the requirements of the standard, except where more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date of Contract Documents, except where a specified date is established by code.
- C. Obtain copies of standards when required by product specification sections.
- D. The contractual relationship, duties, and responsibilities of the parties in Contract and those of the Engineer shall not be altered from the Contract Documents by mention or interference otherwise in any reference document.

PART 2 – PRODUCT *Not Used*

PART 3 – EXECUTION *Not Used*

END OF SECTION

SECTION 01610

Product Requirements

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Products
- B. Transportation and Handling
- C. Storage and Protection
- D. Product Selection
- E. Product Options.

1.2 PRODUCTS

- A. “Products” means: new material, machinery, components, equipment, fixtures, and systems forming the work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the work. Products may also include existing materials or components required for reuse.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract documents.
- C. Provide interchangeable components of the same manufacturer for components being replaced.

1.3 TRANSPORTATION AND HANDLING

- A. Transport and handle products in accordance with manufacturer’s instructions.
- B. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.4 STORAGE AND PROTECTION

- A. Store and protect products in accordance with manufacturer's instructions with seals and labels intact and legible.
- B. Store sensitive products in weather-tight, climate-controlled enclosures.
- C. Fabricated products requiring exterior storage shall be placed on sloped supports, above ground.
- D. Provide bonded, off-site storage and protection when site does not permit on-site storage or protection.
- E. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of product.
- F. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- G. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- H. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.5 PRODUCT SELECTION

- A. Provide products that comply with the requirements of the Contract Documents, that are undamaged and, unless otherwise noted, unused at the time of installation.
- B. Provide products complete with accessories, trim, finish, safety guards and other devices and details needed for the installation and for the intended use and effect.
- C. Standard Products: Provide standard products of types that have been produced and used successfully in similar conditions on other projects.
- D. Proprietary Specification Requirements: Where only a single product or manufacturer is named, or where "No Substitution" is indicated, provide the product indicated. No substitutions will be permitted.
- E. Semi-Proprietary Specification Requirements: Where two or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted.

- F. Where products are specified by name, accompanied by the term “or approved equivalent,” comply with provisions for “substitutions” to obtain approval for use of an unnamed product.
- G. Descriptive Specification Requirements: Where specifications describe a product, listing characteristics required without use of a brand name, furnish a product that provides the characteristics and otherwise complies with requirements.
- H. Performance Specification Requirements: Where specifications stipulate compliance with performance requirements, provide products that comply and are recommended for the application. Manufacturer’s recommendations may be contained in product literature, or by certification of performance.
- I. Visual Selection: Where requirements include the phrase “as selected from manufacturer’s standard colors, patterns, textures” or a similar phrase, provide a product that complies with designated requirements. The Engineer will select color, pattern, and texture from the approved product line.
- J. Compliance with Standards: Where specifications require compliance with a standard, select a product that complies with the standard specified.
- K. Visual Matching: Where specifications require matching a sample, the Engineer’s decision on whether a proposed product matches will be final. Where no product matches and complies with other requirements, comply with provisions for “Product Substitutions” for selection of a matching product in another category.

1.6 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.

PART 2 - PRODUCTS *Not Used*

PART 3 – EXECUTION *Not Used*

END OF SECTION

SECTION 01700

Contract Closeout

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this section.

1.2 SUMMARY

- A. This section includes administrative and procedural requirements for contract closeout including, but not limited to, the following:
 - 1. Inspection procedures
 - 2. Project record document submittal
 - 3. Operation and maintenance manual submittal
 - 4. Submittal of warranties
 - 5. Final cleaning.
- B. Closeout requirements for specific construction activities are included in the appropriate sections.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
 - 1. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the work is not complete.
 - 2. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.

1.4 FINAL ACCEPTANCE

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required.
 2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 3. Submit a certified copy of the Engineer's final inspection list of items to be completed or corrected, endorsed and dated by the Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Engineer.
 4. Submit consent of surety to final payment.
 5. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Re-inspection Procedure: The Engineer will reinspect the work upon receipt of notice that the work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Engineer.
1. Upon completion of reinspection, the Engineer will prepare a certificate of final acceptance. If the work is incomplete, the Engineer will advise the Contractor of work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

1.5 RECORD DOCUMENT SUBMITTALS

- A. General: Do not use record documents for construction purposes. Protect record documents from deterioration and loss in a secure, fire-resistant location. Provide access to record documents for the Engineer's reference during normal working hours.
- B. Record Drawings: Maintain a clean, undamaged set of blue or black line white prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the work as originally shown. Mark which drawing is most capable of showing

conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

1. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work.
 2. Mark new information that is important to the Owner but was not shown on Contract Drawings or Shop Drawings.
- C. Maintenance Manuals: Organize operation and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual, heavy-duty, 2-inch (51-mm) 3-ring, vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:
1. Emergency instructions
 2. Spare parts list
 3. Copies of warranties
 4. Wiring diagrams
 5. Recommended “turn-around” cycles
 6. Inspection and adjustment procedures
 7. Shop Drawings and Product Data.

PART 2 – PRODUCTS *Not Used*

PART 3 – EXECUTION

3.1 CLOSEOUT PROCEDURES

- A. Operation and Maintenance Instructions: Arrange for each Installer of equipment that requires regular maintenance to meet with the Owner’s personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer’s representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:

1. Maintenance manuals
 2. Record documents
 3. Spare parts and materials
 4. Identification systems
 5. Control sequences
 6. Warranties and bonds.
- B. As part of instruction for operating equipment, demonstrate the following procedures:
1. Startup
 2. Shutdown
 3. Emergency operations.

3.2 FINAL CLEANING

- A. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion.
 - a. Remove labels that are not permanent labels.
 - b. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
 - c. Clean the site of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits.
- B. Removal of Protection: Remove temporary protection and facilities installed for protection of the work during construction.

- C. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.
 - 1. Where extra materials of value remain after completion of associated work, they become the Owner's property. Dispose of these materials as directed by the Owner.

END OF SECTION

SECTION 16330

Power Transformers

PART 1 - GENERAL

1.1 SCOPE

- A. 1 (One) 138kV to 34.5kV Power transformer with OLTC.

1.2 QUALITY ASSURANCE

- A. All materials, sizes, and capacities shall conform to the requirements of the National Electric Code, the National Electrical Manufacturers Association, ANSI standards, IEEE standards, and prevailing state and local electrical codes.
- B. Where possible, the materials must bear UL label.

1.3 REFERENCE STANDARDS

- A. IEEE C57.12.00 – Standard for General Requirements for Liquid-Immersed Distribution, Power and Regulating Transformers.
- B. IEEE C57.12.10 – Safety Requirements for 230 kV and below Transformers.
- C. IEEE C57.12.28 – Coating System Requirements.
- D. IEEE C57.12.70 – Standard for Terminal Markings and Connections for Transformers.
- E. IEEE C57.12.90 – Standard Test Code for Liquid-Immersed Transformers.
- F. NEMA TP 80050-2013 (R2024) – Transformers, Step Voltage Regulators, and Reactors.

Note: These standards are subject to periodic review. Users are cautioned to secure the latest applicable edition.

1.4 SUBMITTALS

- A. Material to be Submitted:
 - 1. Dimensional outline and physical arrangement drawings, listing

openings, materials of construction and fasteners.

2. Manufacturer's standard published catalog sheets and descriptive bulletins.
 3. Three (3) copies of manufacturer's instruction book, including removal of shipping braces, assembly of substation base, filling with oil if required, special testing, and other procedures necessary before placing the equipment in service.
 4. Electrical point to point wiring diagrams and electrical schematics.
- B. The Manufacturer may submit the information electronically in a format acceptable to the Engineer, with only the final submittal required to be in an electronic and paper format. Acceptable format of drawings is AutoCad, text documents and spreadsheets in Microsoft Office and Schedules in Microsoft Project.

1.5 SHIPPING

- A. Shipping: The Manufacturer shall ship the units and associated equipment, completely assembled to the maximum extent possible, consistent with transportation limitations. No partial shipments shall be allowed.

PART 2 - PRODUCTS

2.1 1 (One) 138kV to 34.5kV POWER TRANSFORMER WITH OLTC

A. Manufacturers:

1. Delta Star
2. SPX Transformer Solutions
3. WEG Transformer
4. Approved Equivalent.

B. Ratings

- | | |
|----------------------|----------------|
| 1. MVA: | 45/60/75 |
| 2. Class: | ONAN/ONAF/ONAF |
| 3. Number of Phases: | 3 |

4. Coolant: Type II Premium Transformer Mineral Oil
5. Frequency: 60 hertz
6. High Voltage 138,000Y/79,670 volt wye
7. High Voltage BIL: 650kV
8. Low Voltage: 34,500Y/19,920 volt wye
9. Low Voltage BIL: 200kV
10. Temperature Rise: 55°C / 65°C
11. AC Utility Power Supply: 120/240 volt
12. DC Utility Power Supply: 125 volt
13. Tertiary: Buried Delta, 13,200 volt

C. Performance

1. Cooling

- a. Transformers shall be designed for continuous self-cooled/fan-cooled winding temperature rise by resistance and shall not exceed 55 degrees C. and hottest-spot winding temperature rise shall not exceed 80 degrees C. The automatic control of the cooling equipment shall consist of a winding temperature relay and 240-volt single phase low velocity fans.
- b. A thermally upgraded insulation system shall be provided allowing continuous loading at 112 percent (112%) of the 55 degrees C. KVA rating with winding temperature rise not exceeding 65 degrees C., hottest-spot temperature rise not exceeding 80 degrees C.

2. Impedance

- a. Impedance shall be in accordance with ANSI C57.12.10-latest revision. Impedance shall be per ANSI standards at rated voltage and rated self-cooled KVA.
 - i. Impedance to be 10%. (138kV / 34.5kV 45 MVA)

3. Core Design

- a. Shall be of the circular construction and design. Rectangular designs are not acceptable.

4. Oil Preservation

- a. The transformers shall be sealed-tank construction with welded cover. During welding of the transformer covers, an inorganic gasket shall be permanently located between the cover and the tank flange to prevent the entrance of weld spatter into the tank. The transformers shall be completely free of PCBs (polychlorinated biphenyl) and transformers shall be so labeled, in conformance with Environmental Protection Agency Regulations for labeling.

5. Overvoltage Protection

- a. The overvoltage protection scheme provided with the transformer shall consist of the following attributes:
 - I. Primary overvoltage protection shall be provided by station class MOV surge arresters, rated at 131kV MCOV with NEMA 4-hole pads for connection, ABB EXLIM or equal.
 - II. The secondary overvoltage protection shall be provided by station class MOV surge arresters, rated at 29kV MCOV with NEMA 4-hole pads for connection, ABB EXLIM or equal.
 - III. The unit shall be factory installed with bare copper bar ground extended up from the base of the transformer to the two sets of surge arresters, supports shall be provided and installed along the route every 2 feet.

D. Construction

1. Core and Coils

- a. The winding shall be constructed of all copper and shall be of circular disk or helix construction, no layer windings shall be allowed.

- b. The core shall be manufactured from premium burr-free, grain-oriented silicon steel and shall be precisely stacked to eliminate gaps in the corner joints.
- c. The core and coils shall be processed through vapor phase drying to remove moisture. The core and coils shall be vacuum processed to ensure maximum penetration of insulating fluid into coil insulation system.
- d. No through core bolts will be allowed.

2. Tank

- a. The transformer shall be of sealed tank, with dry nitrogen blanket construction of sufficient strength to withstand a pressure of 7 psig without permanent distortion, and 15 psig without rupturing.
- b. The tank must be welded using precision cut, steel plate.
- c. The tank base must be designed to allow skidding or rolling in any direction. The tank base shall be elevated from the bottom of the transformer to avoid corrosion of tank.
- d. Extra heavy-duty lifting lugs.
- e. Base designed for rolling, provision for pulling in directions of center lines of segments.
- f. Jacking facilities at four corners of the base.
- g. Two ground pads with tapped holes for tank grounding.
- h. Two hand holes or manholes on the cover.
- i. Manholes shall be furnished with handles.
- j. All gaskets shall be of reusable rubber with means provided for controlled compression.

3. High Voltage De-Energized Taps

- a. The transformer shall be furnished with full capacity high-voltage taps. The tap-changer shall be clearly labeled to reflect that the transformer must be de-energized before operating the tap-changer. The tap-changer shall be operable on the higher voltage only for transformers with dual voltage primaries. The unit shall have the following tap configurations:
 - I. Two – 2 ½% taps above and below rated voltage (split taps).

4. Bushings and Terminals

- a. The transformer shall be provided with three (3) fully insulated termination roof mounted high voltage bushings with NEMA 4-hole pads for connection. HV bushings shall be ABB condenser Type O Plus C bushings, or equal.
- b. The transformer shall be provided with three (3) fully insulated termination roof mounted low voltage bushings, plus a fully insulated, full current rated X0 neutral bushing for WYE connected transformers rated for full three-phase duty with NEMA 4-hole pad for connection. LV bushings shall be ABB condenser Type O Plus C bushings, or equal.
- c. The secondary neutral bushing shall be fitted with a factory installed bare copper bar neutral conductor extending up from the base of the transformer to the neutral bushing with supports every 2 feet.

5. Current Transformers

- a. The transformer shall be supplied with one (1) winding temperature indicator-relay mounted on transformer with contacts (hot-spot CT).
- b. The transformer shall be supplied with two (2) sets of three 1200/5 multi-ratio CTs of accuracy class C800 on each high voltage line bushing.
- c. The transformer shall be supplied with two (2) sets of three 2000/5 multi-ratio CTs of accuracy class C800 on each low voltage line bushing.
- d. The transformer shall be supplied with two (2) 1200/5 multi-ratio CTs of Accuracy class C800 on the X0 neutral bushing.

It shall be supplied with two (2) 1200/5 multi-ratio CTs of accuracy class C800 on the H0 neutral bushing.

- e. All current transformers shall have their signal wires extended and landed in the customer connection junction box on terminal strips with shorting screws.

6. Radiators

- a. Flanged removable, with integral valves hot dipped galvanized steel radiators shall be located and mounted on tank for cooling.
- b. Cooling fans shall be designed and mounted on radiators to provide forced air cooling as specified.

7. Control Termination cabinet junction box components

- a. Cabinet Construction: NEMA 3R minimum, Stainless steel, with swing doors, and locking handle.
- b. Terminal blocks for customer connection.
- c. Lamp with manual switch for compartment illumination.
- d. Convenience outlet.
- e. Strip heaters sized to avoid condensation.
- f. Conduit entrance in bottom of compartment with removable aluminum entrance plate.

8. Power termination cabinet junction boxes

- a. Cabinet construction shall be painted carbon steel with swing door and locking handle,
- b. Box shall be removable from main tank with bolts,
- c. Removable aluminum conduit entrance plate in bottom of box, ¼ inch minimum thickness.

- 9. The transformer shall be fitted with laser engraved nameplate. This nameplate shall meet IEEE C57.12.00 for nameplates.

10. Painting

- a. The transformer coating shall meet all requirements in IEEE C57.12 standard including:
 - I. Salt spray
 - II. Crosshatch adhesion
 - III. Humidity
 - IV. Impact
 - V. Oil resistance
 - VI. Ultraviolet accelerated weathering
 - VII. Abrasion resistance
- b. The tanks and junction boxes shall be cleaned with a cleaning agent to remove grease and oil. A phosphate coating shall then be chemically bonded to the metal to assure coating adhesion and retard corrosion.
- c. The tanks and junction boxes shall be primed with an epoxy coating to provide barrier against moisture, salt and corrosives. The tank shall then be coated with a polyurethane coating to seal and add ultraviolet protection. The tank coating shall meet all requirements of IEEE C57.12.28, and shall be 2 times recommended thickness.
- d. The finish coat shall be ANSI Light Gray #70.
- e. The radiators shall be finished with a hot dip galvanized finish.

11. Nitrogen Blanketing System

- a. A complete single bottle nitrogen regulation system shall be installed with full nitrogen bottle, control valve, supply pressure- gauge, pressure reducing assembly piping, valves, terminal blocks and accessories.
- b. A swing door junction box shall be provided and installed on main tank to house system. A glass inspection shall be in door.

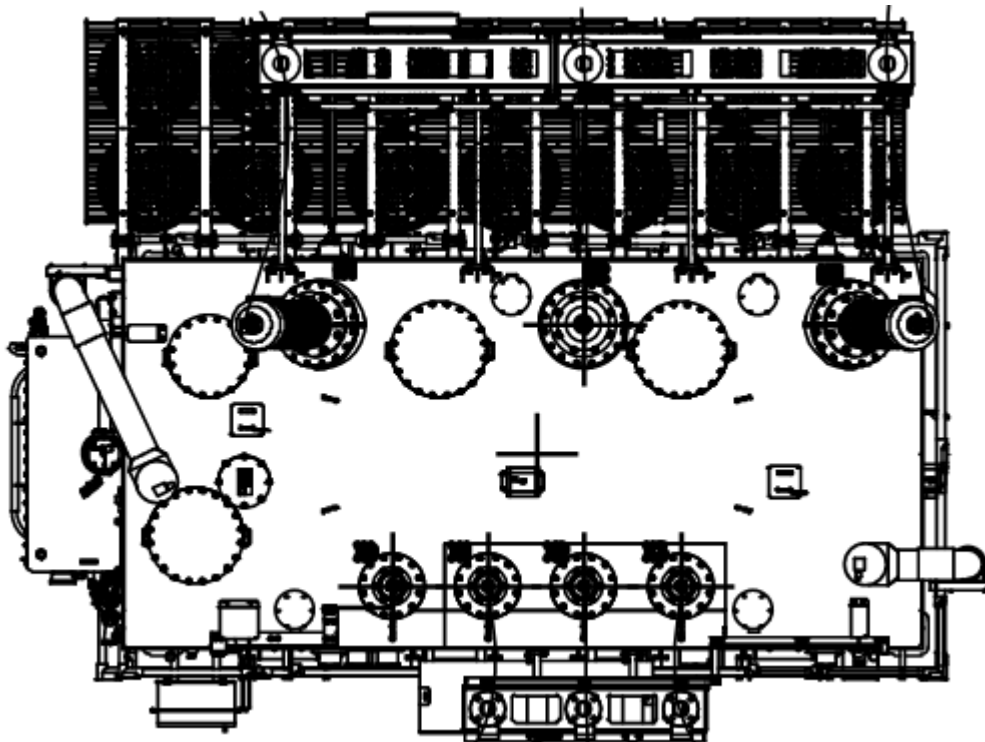
c. Options:

- I. High and low tank pressure alarm points
- II. Terminal Block
- III. Low cylinder pressure switch
- IV. Pressure gauge with alarms
- V. Hoses and tubing
- VI. Fully charged N2 tank.

E. Transformer Physical Layout: Shall comply with the below proposed equipment layout.

Exceptions:

1. Illustration shows a delta-wye transformer. This transformer shall be wye-wye.
2. Locate the control cabinet such that it is not directly beneath the overhead conductors.



F. Load Tap Changer (OLTC)

1. Vacuum on load tap changing equipment shall be furnished to provide the characteristics and features outlined below and shall be designed and guaranteed for 500,000 electrical and mechanical operations before replacement is required; Reinhausen RMV-II or equal.
2. Regulation of voltage – The circuit and components shall be arranged so that a constant voltage held on any high voltage rated KV tap, the equipment will operate to provide +/-10% voltage regulation at the low voltage transformer terminals in (16) 5/8% steps above and below rated voltage. For voltage above rated position, the transformer will deliver rated KVA. For voltages below rated positions, the transformer will deliver at its terminal a current equal to the current at rated KVA and rated voltage.
3. The LTC taps may be located wherever necessary in the windings or circuits to produce the desired result. A series transformer may be used if necessary and shall be power class, round core/coil design, and shall be copper windings.
4. The tap changer shall be designed to withstand full voltage short-circuit on the transformer secondary and primary terminals.
5. Main transformer tank components:
 - a. Series transformer (if required by design)
 - b. Preventative reactor
 - c. CT for line drop compensator (secondary current 0.2 amperes).
6. LTC tank components:
 - a. Tap selector switch and contactor mechanism, with reversing or transfer switch. Electrical limit switches in motor control circuit.
 - b. Drive motor, Reinhausen Tapmotion MD-III
 - c. Mechanical stops at limits of switch movements
 - d. Pressure relief device – automatic resealing, mechanical signal, discharge piping and alarm contact.

- e. Magnetic liquid level gauge (with alarm contacts).
7. Control components:
- a. Voltage level circuit with rheostatic adjustment and test rheostat
 - b. Bandwidth circuit with rheostatic adjustment
 - c. Time delay circuit with rheostatic adjustment
 - d. Automatic/Manual switch, Electrosch Series 24, Catalog #9203DD
 - e. Raise/Lower/Off switch, Electrosch Series 24, Catalog #8845DB, or equal
 - f. Remote/local control switch, Electrosch Series 24, Catalog #24203B
 - g. Line drop compensator with resistance and reactance compensation
 - h. Reactance reversing switch
 - i. Band edge test lights and switch
 - j. Beckwith First Customer Protect Device M-0329B as a backup to Dynamic Ratings DRMCC-T3 LTC controls First Customer protect feature
 - k. Dynamic Rating Inc. LTC position sensor compatible with DRMCC-T3 LTC controls
 - l. “Auto/Off/Manual”, “Remote/Local”, and “Raise/Lower” control switches at the transformer (These controls shall be similar to those furnished with Beckwith LTC control interface panel)
 - m. 5-port ethernet switch, SEL 2725#BGG9. Connect DRMCC to this ethernet switch
 - n. IDEM SPR Magnetic Non-Contact Safety Interlock Switch for both Main and LTC tanks.
 - o. Cutout Switch, for both Main and LTC sudden pressure relays.

8. Operator station components:
 - a. Provision for manual operation with electrical interlock with drive motor
 - b. Position indicator with drag hands (marked 16L-0-16R or 16L-N-16R)
 - c. Motor drive power supply switch with thermal breaker
 - d. Operation counter.

G. Monitoring and Inspection Components

1. The following standard accessories shall be furnished with location in accordance with the latest ANSI C57.12 Standards. Dial type gauges and valves shall be grouped together on the LV side of the transformer for easy accessibility and maintenance. None of these items shall protrude beyond the floor space determined by the radiating surfaces. All gauges over 96 inches from the floor shall have their faces tilted down at an angle of 30 degrees from the vertical or the gauges shall be 6-1/2 inches in diameter. Wells for thermometer bulbs and liquid level gauge floats shall be outside the main tank so as not to require removal for un-tanking.
 - a. Winding Temperature Sensing (with 2 step isolated alarm contacts), Qualitrol 130 or equal
 - b. Sudden Pressure Relay (with contacts for alarm, and contacts for tripping) side mounted, Qualitrol 900 or equal
 - c. Magnetic liquid level gauge (with alarm contacts), Qualitrol 039 or equal
 - d. Dial type oil thermometer (with alarm contacts), Qualitrol OTIWTI or equal
 - e. Pressure vacuum gauge, Qualitrol 050 or equal
 - f. Pressure vacuum bleeder, Qualitrol 070 or equal
 - g. Self-Regenerating desiccant breathers, MESSKO or equal

- h. Gate or open bore type lower (drain and filling) valve, 2" threaded ends with sampling device (3/8"), and caps or plugs. The drain valve and the oil sampling valve will be located to allow draining or sampling from the bottom surface of the tank.
- i. Gate or open bore type upper filling valve, 1" threaded end, with caps or plug.
- j. Cover mounted mechanical pressure relief device for both main and OLTC tanks with automatic resealing-resetting operation and mechanical signal for indication of device operation, along with aluminum piping to direct oil to 2.5 ft above grade, Qualitrol XPRD or equal.

2. Transformer Monitor Support

The transformer shall provide the following facilities to support the installation of transformer monitoring equipment.

a. SENSOR SUPPORT & MOUNTING

- I. A 2.0" brass full bore ball valve shall be mounted approximately 24" to 36" above the transformer tank floor within 6'-0" of the control cabinet.
- II. A 1.0" brass full bore ball valve shall be mounted 4'-0" directly above the lower ball valve.
- III. Both ball valves shall be mounted within 12" off the transformer tank wall in an area void of other obstructions within 8". The valves shall be mounted upside down with the handle under the valve.
- IV. Both valves shall have threaded plugs installed for shipping.
- V. A rigid metal conduit shall be provided from the control cabinet to an 8"X8"X6" NEMA 4X metal junction box mounted at a point between the two valves. This junction box will be used to terminate a 2" control cable conduit from the gas monitor.

b. WIRING

- I. Three 12-point control cabinet terminal blocks shall be provided for wiring of all gas monitor alarm points, analog outputs, CT inputs, and RS485 communications. These terminal blocks will be arranged together in the control cabinet.
- II. All control wiring will be installed and provided by the customer.

c. POWER

- I. A dedicated 120V 15A AC circuit breaker shall be installed in the control cabinet to supply input power to the gas monitor.

3. SCADA

a. Transformer Monitoring & Control System

- I. DRMCC-E3 with user display, current transformers, ambient temperature sensor, top oil temperature sensor, cooling controls, and LTC controls as manufactured by Dynamics Ratings Inc.. The DRMCC-E3 subpanel and display shall be mounted in the transformer control cabinet, wired, programmed, and completely integrated into the transformer's cooling system and LTC and factory tested on the transformer. The following contacts will be tied to the DRMCC-E3:
 - I. Dehydrating breather error
 - II. Dehydrating breather heater
 - III. Sudden pressure relay alarm
 - IV. Liquid temp alarm
 - V. Cooling fans status
 - VI. Remainder, to be determined.

b. Dynamic Ratings Transformer Monitor DRMCC-E3 consisting of:

- I. User Display: - LCD display, pushbuttons, keypad and status LED's for installation in the transformer control cabinet. As an option, it can be installed in the control room (or you can have two displays).

- II. Control Unit (CU) consisting of:
- i. Power Supply Module
 - ii. CPU Module
 - iii. Communications Module with 8 Ports configured as follows:
 - Port #1: RS-485 for connection to the user display
 - Port #2: SCADA (customer to specify RS-232, RD-485 or fiber)
 - Port #3: RS-232 Modem
 - Port #4: RS-485 Calisto
 - Port #5: Spare
 - Port #6: Spare
 - Port # 7: Spare
 - Port # 8: Spare
 - iv. Digital Input Module with 12 status inputs
 - Fan contactor – stage 1 (contactor status) (required)
 - Fan contactor – stage 2 (contactor status) (required)
 - SPR Main Tank
 - Low Oil Main Tank
 - PRD Main Tank
 - Low Nitrogen
 - LTC SRP
 - LTC low oil
 - MTRAB Heater On
 - MTRAB Alarm
 - v. Digital Output Module with 8 relay contacts
 - Cooling Control – stage 1
 - Cooling Control – stage 2
 - LTC Raise (if you use the DR for LTC control)
 - LTC Lower (if you use the DR for LTC control)
 - Major Alarm relay contact output
 - Minor Alarm relay contact output
 - 2 more spare output relays, programmable.

vi. Analog Input Module

- Two RTD inputs (Top Oil & Ambient)
- Two Analog input (LTC Position and spare)
- Two CT inputs (LV Phase B and spare)
- Four Cooling Fan Current inputs (2-Stage 1 & 2-Stage 2)

- III. PT-100 RTD for top oil temperature
- IV. PT-100 RTD for ambient air temperature
- V. Interposing CT for transformer load monitoring
- VI. Second Analog Module providing two RTD inputs and two CT inputs
- VII. Two Additional AC cards for three phase load monitoring
- VIII. Ethernet converter for RJ-45 to fiber
- IX. Optional item – HV bushing monitor

H. Spare Parts

- 1. Each transformer shall be supplied with manufacturer's recommended spare parts, but should include at least the following:
 - (1) – Lot spare gaskets for all removable covers
 - (1) – Spare high voltage bushing
 - (1) – Spare low voltage bushing
 - (1) – Set spares, each illuminating lamp, each fuse and each plug-in breaker used
 - (1) – Quart can, touch-up paint
 - (1) – Lot all manufacturer's recommended spare parts

I. Warranty

- 1. The manufacturer shall provide a standard warranty to repair or replace any equipment manufactured by manufacturer due to defective material or workmanship under normal and proper use, within (5) five years of installation or (5.5) five and one half years from date of shipment.

2. Should the core or coils of one phase require repair or replacement, all three phases shall receive dielectric tests and repair to new transformer values.

J. Guarantee

1. Transformer minimum efficiency and maximum losses shall be guaranteed. The review of the proposals will include a loss evaluation that will be based upon loading at 50MVA (50% OA) and 100MVA (100% OA) and a power cost of \$4,000.00 per kilowatt.
2. If it is determined that the transformer loss exceeds the guaranteed losses, the contract price will be reduced by \$4,000.00 for each kilowatt or fraction thereof, based upon calculated losses as follows.
3. Method:
 - a. $KW \text{ Losses} = \text{No Load Loss} + \text{Load Loss (50\% x OA and 100\% x OA)}$
 - b. $\$ = KW \text{ (Losses)}(\text{From Above}) \times \$4,000.00$
4. Determination of Actual Losses
 - a. The actual losses of the unit supplied shall be determined by test. The certified factory test report shall be the basis for determining actual losses. In the event the Owner waives the right to witness the factory test for losses, the Owner may elect to verify the factory loss test with the unit in service.
 - b. If the Owner's test indicates that the actual losses are more than 3% greater than the factory test, the Owner shall use the losses determined by the in-service test as the basis for assessing any penalties.
 - c. It will be the responsibility of the supplier to prove the correctness of the factory test, which may require the supplier to re-test the unit while in service.
 - d. If the service test is elected, the following procedure will be utilized:
 - I. Input energy consumption will be determined by utilizing metering from the local utility, which is used to determine the monthly charges incurred by the owner.

- II. Output energy will be determined by connecting a kilowatt-hour meter to one set of current transformers provided with the transformer, and metering voltage will be provided by the bus potential transformers.
- III. From the readings provided by the above-mentioned instruments, losses at 50% of full load will be calculated.
- IV. The Owner will allow the supplier to have all instruments and related test equipment checked and calibrated prior to testing. The supplier of the transformer shall bear all expenses incurred for testing and calibrating the aforementioned instruments.
- V. The Owner will give as much notice as possible prior to testing in the event the supplier desires to witness the test.

2.2 CLARIFICATIONS / ADDITIONS

- A. Buried Delta Tertiary Winding:
This transformer shall be provided with a 13.2 kV delta connected buried tertiary winding. This winding shall be self-protecting for faults on the other windings. A grounded separable corner shall be available for opening the winding and disconnecting the ground. The separable corner shall be brought out through two bushings located on the transformer cover. A single delta multi-ratio, C400, 1200:5A, current transformer shall be connected in the delta winding for ground polarization relaying. Current transformer leads shall be routed to the main control cabinet.
- B. The cooling system control circuit shall be wired so that upon opening of a remote contact, all cooling equipment shall be de-energized. This is intended to shut off all cooling equipment in the event of a transformer differential relay trip. The circuit shall be self-resetting upon closing of the remote contact.
- C. Manufacturer shall supply a 15-amp, 120VAC circuit breaker, wired to a terminal block in the main control cabinet, for connection to an oil pit sump pump.
- D. Use control circuit breakers in lieu of fuses with a minimum RMS symmetrical rating of 22,000 amps. Circuit breakers shall be ambient compensated.

- E. The control cabinet(s) shall have a 3-point latch operated by handle with provision for locking.
- F. Include undervoltage relay to detect loss of AC control power, wired to an input on the SEL2515 remote I/O unit. The loss of power relay shall have an adjustable time delay with range of 0.1 to 60 seconds.

PART 3 – EXECUTION

3.1 TESTING

A. Factory Tests

- 1. The following factory tests shall be made on the transformer. All tests shall conform to ANSI/IEEE C57.12.90. The manufacturer shall state by which method the test was made if method is not specifically stated below.
 - a. Insulation Resistance with applied DC voltage of 1000 V for a minimum of one minute.:
 - 1) Each winding-to-ground and to other windings.
 - 2) Core-to-ground.
 - 3) Surge arresters
 - b. Insulation Power Factor:
 - 1) Each winding-to-ground and to other windings.
 - 2) Bushings.
 - 3) Surge arresters.
 - c. Winding ratio tests on normal and all tap positions.
 - d. Winding polarity and phase relation.
 - e. Winding resistance of all windings on rated voltage connections and all noload tap changer positions.
 - f. No load loss at rated voltage.
 - g. Magnetization curve extended to not less than 150 percent rated voltage.
 - h. Impedance and zero phase sequence impedance at base 65 degrees C rating and at maximum 65 degrees C rating.

- i. Temperature rise test performed on this transformer if an exact duplicate transformer's temperature test data can not be submitted.
- j. Temperature indicator test.
- k. Applied potential tests.
- l. Induced potential tests accompanied by partial discharge monitoring shall be performed in accordance with ANSI/IEEE C57.12.90, Part 1, paragraphs 10.8 and 10.9.
- m. Dissolved gas-in-oil analysis before and after the partial discharge test
- n. Standard ANSI impulse tests on all windings and neutral followed by additional partial discharge test.
- o. Audible Sound level test.
- p. Pressure leakage test.
- q. Efficiency at all kVA ratings.
- r. Auxiliary losses at intermediate and maximum 65 degrees C ratings.
- s. All tests shall be made with the transformer's own bushings in place.
- t. Standard IEEE tests on all surge arresters.
- u. Control wiring continuity and grounds.
- v. Control wiring correctness and operational verification.
- w. LTC motor drive mechanism routine per IEEE C57.131.
- x. Sweep frequency resonance analysis consistent with C57.149.
 - i. Frequency range of 20 Hz to 2MHz.
 - ii. Document all test parameters including make, model and serial number of the test device used.
 - iii. Provide test results to owner and owner's engineer.

2. Test witnessing will be as specified in Attachment – Design Requirements data sheets. The Owner shall be given thirty (30) working days' (Monday through Friday) notice prior to testing of the transformer. The Owner shall be given the option of witnessing any or all of the tests. If, after giving notice to the Owner, any test in which the Owner desires to witness is delayed, the manufacturer shall bear any and all additional expenses incurred by the Owner due to the delay, including: travel, lodging, means and wages (including overhead expenses). It is understood that the Owner may select any employee, elected official, or outside consultant to represent the Owner; however, in no event will the manufacturer be held responsible for the expenses of more than two individuals in the event the tests are delayed and the Owner incurs additional expense.
3. Tests necessary to obtain the following information shall be made and five (5) copies of certified test reports shall be submitted to Owner's Engineer and the Owner for approval before the transformer is released for shipment. A copy of the completed transformer nameplate drawing shall be included with each test report copy. Test results files also to be transferred / shared (thumb drive, SharePoint, etc.)
4. Submit to the Owner the following in triplicate at time of delivery of the transformer:
 - a. Certified NEMA test report, including the final calculated value of air core reactance.
 - b. Certified NEMA transformer impulse test report conducted in accordance with ANSI/IEEE C57.12.90.
 - c. Certified test report for surge arresters including the following:
 - 1) 60-hertz sparkover voltage.
 - 2) RIV at rated system voltage.
 - 3) Grading current check.
 - d. Nameplate drawings with all data filled in.

B. Compliance Submittals:

1. Submit as specified in DIVISION 1.
2. Includes but not limited to the following:

- a. Arrangement and outline drawings
- b. Assembly drawings.
- c. External connection diagrams.
- d. Wiring diagrams.
- e. Schematic diagrams.
- f. Bills of Material.
- g. Transformer and LTC nameplate drawings.
- h. Instrument transformer performance curves and data.
- i. Instruction books
- j. Three sets of 8" X 10" color photographs of core and coil assemblies prior to tanking showing front, rear, left side, right side and top views.

C. Field Testing

1. Oil-Filled Transformer Tests:

- a. Core to ground megger test during on car and final inspection.
- b. Verify nameplate data.
- c. Perform instrument transformer tests on CTs if altered during field assembly.
- d. Winding Tests:
 - 1) TTR at all no load taps.
 - 2) TTR load tap changer at all taps with no-load tap changer at the neutral (center) tap.
 - 3) Megger each winding to ground.
 - 4) Megger each combination of high voltage winding to low voltage winding.
 - 5) Set taps as specified by the Owner.

- e. Insulating Oil:
 - 1) Visual inspection.
 - 2) Dielectric test per ASTM D877 during installation and ASTM D1816 for final acceptance prior to energization.
 - 3) Proper oil level.
 - 4) Proper nitrogen blanket.
 - 5) Bushing oil level.
 - 6) Take oil samples for manufacturer's laboratory tests.
 - f. Sudden pressure relay.
 - g. Alarm sensors tests (top oil temperature, winding temperature, low oil, etc.).
 - h. Cooling Equipment
 - 1) Motor rotation.
 - 2) Motor starting current.
 - 3) Equipment control.
 - i. Motor Tests
 - j. Other tests as may be required by the manufacturer.
2. Shortly after the arrival of the transformer to the site, before any connections are made, perform a repeat of the sweep frequency resource analysis test performed by the manufacturer prior to shipment.
- a. Frequency range of 20 Hz to 20 MHz.
 - b. Test shall be in accordance with IEEE C57.149
 - c. If possible, utilize the same make and model of test equipment as used by the manufacturer.
 - d. Document all test parameters including make, model, and serial number of the test device used.
 - e. Compare results to the baseline produced by the manufacturer. Bring any deviations from the baseline results to the attention of the owner.
 - f. Supply test report to owner and owner's engineer.

3.2 DELIVERY AND ASSEMBLY

- A. The Manufacturer shall ship the transformers and their associated equipment, assembled to the maximum extent possible, consistent with transportation limitations. No partial shipments shall be allowed. All shipments shall include full impact recording. Any shipping damage shall be recovered at the full expense of the transformer supplier.
- B. Delivery
 - 1. Manufacturer shall provide the owner with delivery, unloading, setting on the Owner's pad, assembly of the transformers, field testing, and checkout of the unit.
 - a. Delivery: F.O.B. Destination, **TBD** in Batavia, IL
 - b. All labor to unload the transformers shall meet the Illinois Department of Labor's wage laws.
 - c. The transformer foundation is located inside a new existing substation.
- C. Unloading/Rigging
 - 1. Manufacturer shall coordinate and provide all labor and materials to unload and place transformer on owners foundation.
- D. Assembly:
 - 1. The supplier of the transformers shall assume complete responsibility for assembly of the transformers.
 - 2. The transformer supplier shall be completely responsible for the performance of the transformer and the assembly thereof.
 - 3. Regardless of how the unit is assembled prior to being placed in service, the supplier shall arrange to have the complete unit field tested and specified, with the City's Engineer present as a witness.

END OF SECTION