



BIDDING DOCUMENTS

FOR

FURNISHING

69/12.47 kV POWER TRANSFORMER

DELANO
MUNICIPAL UTILITIES

WATER & ELECTRIC SERVICE

DELANO, MINNESOTA

June 2021

DGR Project No. 427704

BIDDING DOCUMENTS

FOR

FURNISHING

69/12.47 kV POWER TRANSFORMER

**DELANO MUNICIPAL UTILITIES
DELANO, MINNESOTA**

June 2021

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

By _____
Chad A. Rasmussen, P.E.

License No. 41434 Date 6-18-2021

DGR Project No. 427704

DGR Engineering

1302 South Union Street
Rock Rapids, IA
(712) 472-2531
dgr@dgr.com

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FURNISHING

69/12.47 kV POWER TRANSFORMER

DELANO MUNICIPAL UTILITIES

DELANO, MINNESOTA

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ADVERTISEMENT FOR BIDS

Sealed bids will be received by the General Manager of Delano Municipal Utilities, Delano, Minnesota, at 11 Bridge Avenue West, Delano, MN 55328, until **1:00 p.m.** on the **12th** day of **July, 2021**, for Furnishing 69/12.47 kV Power Transformer, at which time the bids shall be publicly opened and read aloud.

The material required is as follows:

One (1) 15/20/25 MVA @55°C rise, 16.8/22.4/28 MVA @65°C rise ONAN/ONAF/ONAF, power transformer, 69 kV Delta to 12.47 GRDY/7.2 kV with LTC and accessories.

The above equipment shall be in accordance with the specifications and proposed form of contract now on file in Delano Municipal Utilities offices in said city of Delano, Minnesota, by this reference made a part hereof, as though fully set out and incorporated herein.

Each bid shall be made out on bid forms furnished by the Engineer and shall be accompanied by either a certified check or a bid bond executed in an amount not less than ten percent (10%) of the amount of the Bid. The bid security shall be made payable to Delano Municipal Utilities. The bid security must not contain any conditions either in the body or as an endorsement thereon. Such bid security shall be forfeited to Delano Municipal Utilities as liquidated damages in the event the successful bidder fails or refuses to enter into a contract and post a satisfactory Performance Bond.

Material suppliers desiring a copy of the bid forms and specifications for individual use may obtain them from the office of DGR Engineering, Rock Rapids, Iowa, telephone (712) 472-2531, fax (712) 472-2710, website www.dgr.com, e-mail dgr@dgr.com, no deposit required.

Upon shipment of the complete equipment, the Supplier shall submit to the Owner a detailed statement of the equipment shipped and installed. The Owner shall, within thirty (30) days after delivery receipt of the material and associated invoice, pay the Supplier ninety-five percent (95%) of the contract price of the material.

The Owner shall within thirty (30) days after final completion, field assembly, testing, required test reports, record drawings, final documentation and certification by Engineer, pay the Supplier the remaining five percent (5%) of the contract price.

All materials shall be delivered by the dates set in the Specifications.

Delano Municipal Utilities reserves the right to defer acceptance of any bid for a period not to exceed thirty (30) days after the date bids are received and no bid may be withdrawn during this period. Delano Municipal Utilities also reserves the right to reject any or all bids and enter into such contract as it shall deem to be in the best interest of Delano Municipal Utilities.

DELANO MUNICIPAL UTILITIES

By /s/ Paul Twite
 General Manager

INSTRUCTIONS TO BIDDERS

1.01 FAMILIARITY OF CONDITIONS.

- A. Bidders are required to examine to their satisfaction, the plans and specifications and to make sure that the requirements are fully understood. The failure or omission of any Bidder to examine any form, instrument, or document shall in no way relieve any bidder from any obligation regarding their bid.

1.02 BIDDERS QUALIFICATIONS.

- A. Bidder must be capable of performing the work bid upon. The lowest responsive Bidders will be required to satisfy the Owner as to their integrity, experience, number of employees, equipment, personal, and financial ability to perform and ability to finance the cost of the work.
- B. If the information and data requested by the Owner is not furnished, the Owner may consider the Bidder non-responsive or non-responsible. The Owner reserves the right, in its sole and absolute discretion, to accept the bid of a Bidder despite the fact that said Bidder has not submitted any information, list, data or statement requested.
- C. The Owner reserves the right to reject any bid if the Owner determines, in its sole and absolute discretion, that the Bidder is not properly qualified to carry out the obligations of the Contract and/or to complete the work contemplated by the Contract. Conditional bids will not be accepted.

1.03 METHOD OF BIDDING.

- A. Bids shall be submitted on a unit price or lump sum basis as stated on the Bid form. In preparing a bid, the Bidder shall specify the price, written legibly in ink or typewritten, at which the Bidder proposes to do each item of work. The price shall be stated with respect to each and every alternate item, whether an add alternate, or a deduct alternate. Failure to state a price for any alternate bid item shall constitute a non-responsive bid that will not be considered. The prices shall be stated in figures. In items where unit price is required, the total amount for each item shall be computed at the unit prices bid for the quantities given in the estimate. In the event of discrepancies in the unit price extensions listed in the bid, unit prices shall govern.
- B. For all work let on a unit price basis, the Engineer's estimate of quantities shown on the bid is understood to be approximate only, and will be used only for the purpose of comparing bids. For work let on a lump sum basis, any estimate of quantities provided is furnished for the convenience of Bidders and is not guaranteed.

1.04 BID SECURITY.

- A. Each bid shall be accompanied by bid security as specified in the Advertisement for Bids and made payable to the Owner. Should the bidder receiving the award fail to execute a satisfactory contract and file acceptable bonds within ten (10) days after the award of contract, the Owner may consider Bidder to be in default, annul the Notice of Award, and the bid security of that Bidder will be forfeited. Such forfeiture shall be the Owner's exclusive remedy if Bidder defaults.
- B. The bid security of unsuccessful Bidders will be returned promptly after the award has been made. In no case will the bid security be held longer than thirty (30) days without written permission of the Bidder, except that the bid security of the Bidder to whom the contract is awarded will be retained until he or she has entered into contract and filed an acceptable bond.

1.05 TAXES.

- A. The prices for material items in all Bids shall not include provisions for the payment of any sales taxes payable to the State of Minnesota. The Owner will issue a tax exemption certificate to the successful Bidder.

1.06 ALTERNATE MATERIALS.

- A. Requests for approval of 'or-equal' materials and equipment shall be submitted to the Engineer in writing at least fifteen days prior to receipt of bids. Each request shall conform to the terms and conditions of the bidding documents and to the type, function, and quality standards of approved materials and equipment. The burden of proof of the merit of proposed 'or-equal' materials and equipment is upon the Bidder. The engineer's decision of approval or disapproval of a proposed 'or-equal' item will be final. No substitution shall be approved except by a written addendum issued to all prospective Bidders.
- B. Bidders may submit bids for alternate materials which do not meet all the detailed requirements of the specifications. Such submissions shall be in addition to the basic bid which shall comply with all requirements of the specifications. Bid evaluation and contract award will be made on the basis of the base bid. Alternate materials will then be considered, and the final contract amount adjusted accordingly if the Owner decides to accept bids for alternate materials. In submitting bids for alternate materials, Bidders shall submit manufacturer's data and note the exceptions to the requirements of the plans and specifications.

1.07 TERMS AND CONDITIONS.

- A. The Bidder is invited to attach their standard patent protection and liability limitation conditions, but shall not include any other terms and conditions to this bid. Attachment of additional terms and conditions shall be grounds for disqualification of the submitted bid.

1.08 CHANGES IN QUANTITIES.

- A. Not used.

1.09 SUBMISSION OF BIDS.

- A. Bidders will be furnished with bid form(s) giving the estimate of quantities needed to complete the work. Two copies of the completed bid form(s) and all supporting documentation shall be included with the bid.
- B. If the bid is made by an individual, his or her name and post office address must be shown. If made by a firm or partnership, the name and post office address of the firm or partnership must be shown. If made by a corporation, the person signing the bid must name the state under the laws of which the corporation is chartered, and the name, title, and business address of the executive head of the corporation. Anyone signing a bid as agent may be required to submit satisfactory evidence of his or her authority to do so.
- C. Any changes or alterations made in the official bid form, or any additions thereto, may result in the rejection of the bid. No bid will be considered which contains a clause in which the Bidder reserves the right to accept or reject a contract awarded by the Owner. Bids in which the unit prices are obviously unbalanced may be rejected.
- D. Should the Bidder find discrepancies, ambiguities or omissions from these documents, they should immediately notify the Engineer and an addendum will be sent to all known entities holding copies of the Bidding Documents.
- E. Two copies of each bid form and all supporting documentation shall be provided. Bids shall be placed in an opaque envelope and the envelope sealed and marked "Bid Enclosed – Furnishing 69/12.47 kV Power Transformer" to indicate its contents. If forwarded by mail, the envelope shall be mailed to the following address:

Delano Municipal Utilities
Attn: Paul Twite, General Manager
11 Bridge Avenue West
Delano, MN 55328

- F. Receipt of any Addenda must be acknowledged on the bid form or a copy of any addenda relating to the bid shall be signed and attached to the bid.

1.10 MODIFICATION OR WITHDRAWAL OF BIDS.

- A. A bid may be withdrawn by an appropriate document duly executed in the same manner that a bid must be executed and delivered to the place where bids are to be submitted prior to the date and time for the opening of bids. Upon receipt of such notice, the unopened bid will be returned to the Bidder.

- B. If a Bidder wishes to modify its bid prior to bid opening, Bidder must withdraw its initial bid and submit a new bid prior to the date and time for the opening of bids.
- C. No bid may be withdrawn for a period of thirty (30) days after the scheduled date and time for the receipt of bids.

1.11 CONTRACT AWARD.

- A. Award of the Contract, if an award is made, will be on the basis of the base bid and/or any alternate bid(s) chosen by the Owner, as is in the best interest of the Owner. It is the intent of the Owner to award one (1) Contract for the Power Transformer as is deemed to be in the best interest of the Owner. The effect of the base and evaluated costs, guaranteed delivery date, dimensions and the experience record of the Bidder on units of similar size and rating will be considered in evaluating the bids. This may also include location of manufacturing and assembly, and preference may be given to units manufactured and assembled in the USA. The Owner reserves the right to reject any or all bids, waive technicalities, and make award(s) as deemed to be in the best interest of the Owner. In addition to cost, other items that will impact the award decision include the following:
 - 1. Relevant experience with installations of similar size and type.
 - 2. Support capabilities.
 - 3. Ability to meet specified delivery schedule.
 - 4. Conformance to project specifications.
 - 5. Life cycle and maintenance costs.
 - 6. The Owner's and Engineer's past experience with units manufactured by the Bidder.

1.12 PERFORMANCE BOND.

- A. The Bidder to whom the contract is awarded shall furnish a Performance Bond in an amount equal to the total amount of the bid guaranteeing the faithful performance of the work in accordance with the terms of the contract. Such bond shall be with a surety company authorized to do business in the State of Minnesota and in form acceptable to the Owner. Any costs associated with procuring the necessary bond shall be included in the bid prices.

1.13 EXECUTION OF CONTRACT.

- A. The Bidder to whom the contract has been awarded shall enter into contract with the Owner within ten (10) days after the award has been made.

- B. No bid shall be considered binding upon the Owner until the contract is properly executed by both parties and all required bonds are filed.
- C. The contract, when executed, shall be combined with all the Contract Documents identified in the Material Agreement representing the entire agreement between parties. The Bidder shall not claim any modification resulting from representation or promise made by representative of the Owner or other persons.

1.14 PROJECT SCHEDULE.

- A. The Bidder shall provide guaranteed completion dates in the locations provided on the Bid Form. The Owner is targeting the April 2022 timeframe for delivery of the material to the pad and May 2022 timeframe for assembly and field testing completion.
- B. The Owner reserves the right to deduct from the contract price \$500 per day for each calendar day after the contracted delivery date that the transformer is not delivered to the site. This price reduction shall be in lieu of proving an actual loss via legal or arbitration proceeding.
- C. Field installation and testing work shall be completed by the transformer manufacturer or an appointed representative within thirty (30) days of delivery to the site. The Owner reserves the right to deduct from the contract price \$500 per day for each calendar day after the contracted field installation and testing date that the transformer is not installed and tested. This price reduction shall be in lieu of proving an actual loss via legal or arbitration proceeding.
- D. The Supplier shall provide monthly progress reports to the Engineer during the manufacturing of the transformer.

* * * END OF SECTION * *

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*):

BID

Bid Due Date:

Description (*Project Name— Include Location*):

BOND

Bond Number:

Date:

Penal sum _____

\$ _____

(Words)

(Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER

SURETY

(Seal)

(Seal)

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By:

Signature

By:

Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest:

Signature

Attest:

Signature

Title

Title

Note: Addresses are to be used for giving any required notice.

Provide execution by any additional parties, such as joint venturers, if necessary.

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 Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
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, or
 - 3.2 All Bids are rejected by Owner, or
 - 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 of 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 the 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 the 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 FORM

TO: Delano Municipal Utilities
Delano, Minnesota

FROM: Bidder's Name _____

Address _____

Pursuant to and in compliance with the Advertisement for Bids and the Instructions to Bidders relating thereto, the terms of which are incorporated herein by reference thereto, the undersigned as bidder offers and agrees, if this offer is accepted, to furnish and deliver the equipment and materials in strict conformance with the Specifications forming a part of these contract documents and in accordance with following addenda for the sum indicated on the following bid schedule.

| <u>Addendum Number</u> | <u>Addendum Date</u> |
|------------------------|----------------------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

1. The prices set forth herein do not include any sums which are or may be payable by the seller on account of taxes imposed by the State of Minnesota upon the sale, purchase or use of the equipment. If any such tax is applicable to the sale, purchase or use of the equipment, the amount thereof shall be paid by the Owner.
2. The prices included herein are firm without regard for time of delivery, increase in cost from manufacturer, or any other factor.
3. The price of the equipment set forth herein shall include the cost of delivery to the job site and offloading, assembly, and field testing as set forth in the specifications. The guaranteed delivery date of the transformer shall be included in this Bid. Field testing of the transformer shall be completed no later than thirty (30) days after delivery.
4. Title to the equipment shall pass to the Owner after all required field testing has met the requirements of the specification and the test results have passed the requirements.
5. This bid is void unless a materials contract based on this bid is entered into by the Owner and the Supplier within 30 days after the date hereof.

6. We the undersigned agree to furnish one 69 kV Delta to 12.47 GRDY/7.2 kV power transformer with load tap changer and other accessories as specified with the following maximum guaranteed loss characteristics for the following amount:

| | <u>BASE BID</u> <u>15/20/25/28 MVA</u> | <u>ALTERNATE BID</u> <u>12/16/20/22.4 MVA</u> |
|---------------------------------|---|--|
| a. Base Price* | \$ _____ | \$ _____ |
| b. Field Services Price | \$ _____ | \$ _____ |
| c. Total Purchase Price (6a+6b) | \$ _____ | \$ _____ |

- * **Transportation and offload to the pad shall be included in the Base Price.**
 * **Field services (assembly and testing) shall not be included in Base Price.**

7. The following evaluation price shall be used for evaluation of bids for award of contract.

| | <u>BASE BID</u> <u>15/20/25/28 MVA</u> | <u>ALTERNATE BID</u> <u>12/16/20/22.4 MVA</u> |
|---|---|--|
| a. No-Load Loss, 20°C | _____ kW** | _____ kW** |
| b. Total loss @ base MVA, 85°C | _____ kW** | _____ kW** |
| c. Load loss (7b-7a) | _____ kW** | _____ kW** |
| d. Total Purchase Price (6c) | \$ _____ | \$ _____ |
| e. (7a) x \$8,830 = | \$ _____ | \$ _____ |
| f. (7c) x \$2,450 = | \$ _____ | \$ _____ |
| g. Total Evaluation Price (7d +7e+7f) = | \$ _____ | \$ _____ |

- ** **Guaranteed maximum (see Specifications).**

| | <u>BASE BID</u> <u>15/20/25/28 MVA</u> | <u>ALTERNATE BID</u> <u>12/16/20/22.4 MVA</u> |
|---|---|--|
| 8. Guaranteed Sound Levels | _____ | _____ |
| 9. Guaranteed Auxiliary Losses | _____ | _____ |
| 10. Guaranteed Delivery Date (xx/xx/xx): | _____ | |
| 11. Standard Warranty length included in the base price | _____ | |
| 12. Recommended Spare Parts and Price list attached: | _____ | |

13. The following information is offered in regard to the transformer type and delivery.

Transformer/LTC Manufacturer _____ / _____

Location and Ownership of manufacturing facility _____

| Approximate Weights: | <u>BASE BID</u> <u>15/20/25/28 MVA</u> | <u>ALTERNATE BID</u> <u>12/16/20/22.4 MVA</u> |
|------------------------|---|--|
| Core and Coil (lb) | _____ | _____ |
| Tank and Fittings (lb) | _____ | _____ |
| Oil (lb) | _____ | _____ |
| Total (lb) | _____ | _____ |

| | <u>BASE BID</u> <u>15/20/25/28 MVA</u> | <u>ALTERNATE BID</u> <u>12/16/20/22.4 MVA</u> |
|----------------------------|---|--|
| Approximate Gallons of Oil | _____ | _____ |
| Approximate Dimensions | H_____ | H_____ |
| | W_____ | W_____ |
| | D_____ | D_____ |

(Attach a sketch of the proposed transformer configuration with all dimensions.)

Truck or Rail Delivery* _____

Circular Layer _____

Winding Material and type _____

Shipped with or without oil** _____

Supporting Docs. Attached _____

*If rail delivery is used, the Supplier shall furnish transportation and loading of the transformer from the appropriate rail siding to the job site.

**If the unit is to be filled in the field, the cost of performing this task shall be included and completed by the Bidder after delivery.

Dated this _____ day of _____, 2021.

Bidder _____

Address _____

Authorized Officer _____

Signature _____

Title _____

Bid Question Contact _____

Telephone No. _____

E-mail _____

PERFORMANCE BOND

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER *(name and address):*

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: None See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal *(seal)*

Surety's Name and Corporate Seal *(seal)*

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:
 - 3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
 - 3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
 - 3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
 - 5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
 - 5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
 - 5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
 - 5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
 - 5.4.1. After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
 - 5.4.2. Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.
7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
 - 7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - 7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
 - 7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
14. Definitions
 - 14.1. Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
 - 14.2. Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
 - 14.3. Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
 - 14.4. Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 14.5. Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.
16. Modifications to this Bond are as follows:

GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY:

- A. Materials shall be supplied as specified herein, and shall be in accordance with the applicable NEMA, ANSI, IEEE, IPCEA, ASTM Standards, NEC, and the Standards of the Underwriter's Laboratory.

1.02 CONTRACT AWARD:

- A. The Owner will award one (1) contract for the Power Transformer as deemed in the best interest of the Owner. The following dates represent the proposed schedule for this Contract:

| | |
|-------------------|-------------------------------------|
| July 12, 2021 | Bid Opening |
| July 19, 2021* | Utility Commission Awards Contract |
| April 15-30, 2022 | Delivery of Power Transformer |
| May 1-15, 2022 | Field assembly and testing complete |

*Date subject to change.

1.03 SUBMITTALS:

- A. In addition to any drawings and data submitted with the bid, the Supplier, after award of the contract and before proceeding with the manufacture of the material, shall furnish the Engineer electronic copies of all design calculations, data sheets and drawings covering the design and installation of the material for approval.
- B. The Supplier shall submit structural details and drawings of the transformer outline, schematics, and wiring diagrams for approval. All drawings shall be approved prior to fabrication.
- C. The Supplier shall be responsible for all drawings required to fully document the function of all equipment internal to the control panels. The Supplier shall also note external equipment connections on the wiring diagrams.
- D. The Supplier shall supply to the Engineer an electronic copy in .pdf and an AutoCAD compatible format of each of the above-mentioned drawings for all submittals.
- E. Drawings submitted shall be in 11 x 17 format.

- F. Drawings shall be transmitted with a cover letter and such letter shall indicate the submittal numbers, drawings included in transmittal, and date sent.
- G. Approval of final Supplier's drawings or data by the Engineer shall not relieve the Supplier of any part of his responsibility to meet all the requirements of this specification or as to the correctness of his drawings and data. Further, approval of the Engineer does not relieve the Supplier of responsibility for the adequacy of the design.
- H. Shop drawings for all material shall be submitted within 6 weeks of award.
- I. Allow 2-3 weeks for the Engineer's review of the shop drawings.
- J. See the Technical Specifications for additional submittal requirements.

1.04 SHIPPING AND DELIVERY PROCEDURES:

- A. The Bid(s) shall include F.O.B to the transformer pad at the project location in Delano, Minnesota. The project site address is as follows:

Downtown Substation
Delano Municipal Utilities
11 Bridge Avenue West
Delano, MN 55328
- B. Supplier shall notify the Owner when equipment is ready for shipment **at least 7 days prior to delivery**. In addition, seller shall advise the Owner of method of shipment, projected routing and estimated time in shipment.
- C. Title to the equipment shall pass to the Owner upon acceptance testing and checkout of the equipment and receipt of all required documentation.
- D. Deliveries Accepted: Monday-Friday, 8:00 AM – 3:00 PM, working days only.
- E. Supplier shall also coordinate delivery in advance with the Owner's substation construction Contractor to ensure that site preparations are complete and the Contractor can schedule to be on-site during delivery of the equipment.
- F. The Supplier shall coordinate delivery locations with the Owner and Engineer.
- G. The transformer must adhere to the size constraints laid out in the technical specifications.
- H. The seller shall investigate all limitations in regard to shipping and offloading the equipment and include the costs for such limitations in the Bid. The transformer shall be shipped as completely assembled as transportation limits allow.

- I. The transformer shall be shipped on a cushioned low-boy truck recently inspected and determined to be 100 percent operable, or other means agreed to by Owner. If rail delivery is used, the Supplier shall furnish transportation and loading of transformer from the appropriate rail siding to the job site.
- J. A minimum of two (2) separate three-directional impact recorders shall be installed on the truck, railroad car, or any other means of transportation for the transformer during the entire shipping process. The impact recorders shall be mounted on the truck, railcar, or other transportation means prior to shipment. Correct operation of all impact recorders shall be confirmed before shipment leaves the factory. Impact recorder results shall be provided to the Engineer, in an electronic file format via E-mail.
- K. The transformer shall be shipped with the vacuum/pressure gauges installed and connected. Prior to shipment, the seller shall affix signed and dated weatherproof tags to the vacuum/pressure gauges listing the gauge readings, the ambient temperature, and the barometric pressure at the time of reading. Transformer shall be shipped with a dry-air or dry nitrogen sealed tank oil preservation system to assure positive pressure.
- L. Prior to shipment, all gauge and indicator glass shall be thoroughly cleaned and covered with non-adhesive shipping protectors.
- M. Insulating oil, if shipped separately, shall be delivered to the construction site F.O.B. destination, freight prepaid. For transformers shipped dry, oil shall be delivered by tank truck. For transformers shipped oil filled, any make up oil of quantities less than 1,000 gallons shall be provided in 55 gallon non-returnable drums.
- N. If the transformer is shipped without oil, the transformer supplier shall include in their base bid price the cost of vacuum oil filling the unit in the field.
- O. Bushings shall be shipped in crates suitable for long term storage, either in an upright position or at an incline as specified by the manufacturer. These storage requirements shall be clearly marked on the shipping container.

1.05 INSURANCE REQUIREMENTS:

- A. General - The Supplier shall secure and maintain such insurance policies as will protect that Supplier and unless otherwise specified, the Owner and its agents, from claims for bodily injuries, death or property damage, which may arise from operations under this contract whether such operations be by the Supplier or anyone employed directly or indirectly by them. The Supplier shall not commence work under this contract until the Supplier has obtained all insurance required herein and such insurance has been approved by the Owner. The Supplier shall deliver to the Owner executed copies of all policies or a certificate of insurance. No policy shall

be canceled until thirty (30) days after notice of cancellation is given to the Owner in writing. The Supplier agrees to hold harmless, indemnify and defend the Owner and its agents from all loss and damage, including damage to person or property, arising from any act by, or negligence of, Supplier or its subcontractors or the officers, agents, or employees of either while engaged in the performance of this contract, or while in or about the building or premises, or rising from accident or any injury not caused by act of Owner or Owner's agents, its agents or servants, or anyone employed by Owner, other than this Supplier, to any Supplier or officer, agent, or employee of a subcontractor while engaged in or about the performance of this contract, or while in or about Owner's premises, or arising from liens or claims for services rendered or labor or materials furnished in or for the performance of this contract.

B. Coverages and Limits: The Supplier shall provide insurance to include a minimum of the following coverages and associated limits:

| <u>Coverage</u> | <u>Limits</u> |
|--|---|
| 1. Worker's Compensation Employer's Liability | Statutory \$100,000 each employee \$100,000 each disease \$500,000 each accident |
| 2. Comprehensive General Liability- Combined Single Limit | \$1,000,000 each occurrence \$2,000,000 aggregate |
| 3. Automobile Liability- Combined Single Limit | \$1,000,000 each occurrence |
| 4. Umbrella (Excess) Liability | \$2,000,000 each occurrence |

C. Additional Insured: The Owner, Engineer, and each of their employees, officers or agents shall be named as an additional insured under the prime Supplier's insurance policies.

Owner: Delano Municipal Utilities
11 Bridge Avenue West
Delano, MN 55328

Engineer: DeWild Grant Reckert and Associates Company
dba DGR Engineering
1302 South Union Street
Rock Rapids, IA 51246

1.06 WARRANTY:

- A. Supplier shall furnish a standard warranty package with the material.
- B. The warranty shall be in effect 60 months from date of energization.**
- C. Shall be comprehensive, without deductibles, and shall cover all equipment furnished by Supplier, whether or not it was manufactured by the Supplier.
- D. Warranty shall be a 60 month in/out warranty, including, but not limited to, the following:
 - 1. Removal of transformer from service.
 - 2. Disconnecting primary and secondary conductors and control cables.
 - 3. Loading, hauling and delivery of transformer to repair facility.
 - 4. Inspection and repair of the transformer.
 - 5. Loading, hauling, and delivery of the transformer to the Owners site.
 - 6. Reconnecting primary and secondary conductors and control cables.
- E. All repair parts, labor, and travel expenses necessary for repairs at the job site shall be included.

1.07 TERMS AND CONDITIONS:

- A. The Bidder is invited to attach their standard patent protection and liability limitation conditions, but shall not include any other terms and conditions to this bid. **Any terms or conditions submitted with the Bid other than the terms or conditions herein listed shall be grounds for disqualification of bid. All additional costs required to meet this specification shall be deemed to be included in the base price.**

* * * END OF SECTION * * *

TECHNICAL SPECIFICATIONS

PART 1 - GENERAL

1.01 SCOPE:

- A. The Advertisement for Bids, Instructions to Bidders, Bid Form, and General Requirements of the Contract are hereby made part of this Section.
- B. Work under this Section includes supplying, assembling testing and completing field services of the power transformer as herein specified.

1.02 PAYMENT:

- A. Payment shall be at the Contract unit prices as shown on the Bid Form.
- B. Purchase Price Adjustment:
 - 1. The total purchase price of the power transformer shall be adjusted to reflect the difference between actual transformer test losses and the guaranteed transformer losses submitted with the Bid.
 - 2. The adjustments shall be made in accordance with the per KW "cost of losses" submitted.
 - 3. No adjustment in purchase price shall be made if either of the test losses is less than the guaranteed losses.
 - 4. The load and no-load losses will be evaluated independent of each other
 - 5. If one of the loss factors meets or is below the guaranteed losses the resultant evaluation assessment will be zero and no credit will be added to the other loss evaluation assessment.
 - 6. Reported losses shall be tested at the ONAN base rating of the transformer. Winding losses shall be corrected to 85 ° C; no-load losses shall be reported at 20 ° C.

1.03 DRAWINGS AND MANUALS

- A. Approval drawings:
 - 1. Submit as electronic files in AutoCAD and .pdf compatible formats via e-mail to the Engineer.
 - 2. Drawings shall be no larger than 11X17.
 - 3. Drawings and instructions shall be submitted to the Engineer prior to manufacture of the transformer.

B. Final Drawings and Images:

1. Furnish three (3) paper sets and one (1) electronic .pdf and AutoCAD files of the following:
 - a. Nameplate drawing.
 - b. Outline of main tank and associated equipment.
 - c. Control schematics and wiring diagrams of all equipment.
 - d. Connection diagrams.
 - e. Outline of arresters and bushings.
 - f. Instruction books for transformer and all equipment.
2. Furnish all final drawings no later than 10 days following the final test of equipment.
3. Submit electronic files on a CD or via a secure cloud file sharing service.
4. High resolution digital color photographs of the core and coils before installation in the transformer tank shall be taken from each side, each end, and the top for all transformers. Photos shall be submitted to Engineer after assembly of core and coils. Prints of photos shall be included in each instruction book furnished. Pictures shall also be provided to the Engineer promptly after being taken.

C. All drawings, manuals, nameplates, including nameplates for auxiliary devices shall be printed in English.

PART 2 - PRODUCTS

2.01 SERVICE CONDITIONS AND STANDARDS:

- A. The transformer shall be a newly manufactured unit and comply with and meet or exceed all applicable standards of ANSI and NEMA. The latest revision of these standards shall apply and are not limited to the following specific standards.
- B. The transformer shall be designed and built to meet the most recent requirements outlined in IEEE C57.12.00, IEEE C57.12.90.
- C. The transformer covered by this specification shall meet the Short-Circuit Qualification Requirements given in ANSI Standard C57.12.90 entitled "Distribution and Power Transformer Short-Circuit Test Code", prepared by IEEE Transformer Committee as an amplification of ANSI Standard C57.12.00, Section 7, entitled "Short-Circuit Characteristics". **The bidder shall submit, with the Bid, certified short-circuit test data for a transformer of the same manufacturer, type and style, with similar size and voltage ratings.**
- D. The transformer oil supplied with the transformer covered in this specification shall comply with the most recent version of ASTM D3487, "Mineral Oil Used in Electrical Apparatus".
- E. The design of the equipment must conform to current OSHA and NESC regulations and requirements.
- F. In the event of a conflict between industry standards and this specification, the manufacturer shall notify the Engineer and secure clarification resolving the conflict before proceeding with the work.
- G. The equipment shall be designed for satisfactory service for the ice and wind loads of NESC heavy loading district.
- H. The equipment shall be suitable for outdoor service at an elevation of not more than 3,300 feet above sea level in a climate with ambient temperatures ranging from -40° C to +40° C.
- I. The equipment shall be designed to withstand the seismic loads as defined and calculated in IEEE 693 "IEEE Recommended Practice for Seismic Design of Substations (current revision)" at the final transformer installation location. The equipment shall continue to perform its intended function during and after such seismic stresses.
- J. All components shall be readily available in the United States and identifiable by manufacturer's name and part number.

2.02 TRANSFORMER RATINGS:

- A. The general purpose shall be for use as an outdoor, three phase, 60 Hz, oil immersed transformer.
- B. The transformer shall be 69 kV Delta-12.47/7.2 kV GNDY with the following ratings:

| | High Voltage <u>H-Winding</u> | Low Voltage <u>X -Winding</u> |
|-------------------------------------|----------------------------------|----------------------------------|
| Basic Impulse Level (BIL) | 350 kV | 110 kV |
| Winding MVA @ 55°C | | |
| ONAN @ 55°C | 15 MVA | 15 MVA |
| ONAF (1 st stage) @ 55°C | 20 MVA | 20 MVA |
| ONAF (2 nd stage) @ 55°C | 25 MVA | 25 MVA |
| Winding MVA @ 65°C | | |
| ONAN @ 65°C | 16.8 MVA | 16.8 MVA |
| ONAF (1 st stage) @ 65°C | 22.4 MVA | 22.4 MVA |
| ONAF (2 nd stage) @ 65°C | 28 MVA | 28 MVA |
| Winding Connections | Delta | Wye |
| System Neutral | | Grounded |

The BIL of the XO bushing shall be 110 kV.

- C. The high voltage winding shall be equipped with full capacity de-energized high voltage taps of \pm two (2) 2-1/2 percent above and below both high voltage ratings.
- D. The transformer shall be designed for operation within standard excitation limits. Noise level shall not exceed 3 DB below NEMA standard average audio levels at rated full nameplate rating and any operating position with all fans on.
- E. Standard impedance shall be furnished according to ANSI standard C57.12.10.
- F. No current path components, ancillary equipment or other design aspects shall limit use of full peak-load capabilities as defined in these ANSI loading limits.

2.03 CONTROL POWER:

- A. Control power for the rapid rise relay shall be ungrounded 125 VDC. All equipment shall be capable of being operated at 139.9 VDC when the station battery is being equalize charged.

2.04 AUXILIARY POWER:

- A. All auxiliary equipment shall be single phase and shall be supplied from a 120/240 VAC single phase, 60 HZ source.

2.05 LIGHTNING PROTECTION AND GROUNDING:

- A. Lightning arresters as specified below shall be supplied and installed on each phase and mounted to the transformer tank. Arresters shall be furnished for both the high and low side. Arresters shall be light gray in color. Arrester ratings shall be as follows:
- (3) High side - 60 kV metal oxide varistor (MOV), with MCOV rating of 48 kV, station class arresters.
 - (3) Low side - 10 kV metal oxide varistor (MOV), with MCOV rating of 8.4 kV, station class arresters.
- Furnish Ohio Brass or ABB, no equal.
- B. A copper ground bar shall be provided for connecting the lightning arresters to the ground grid. The bar shall be mounted to the tank and routed from the bottom of the tank to the lightning arresters and back to the bottom of the tank in a looped configuration. The copper bar shall have holes for connecting a 2-hole NEMA pad at each end and at each lightning arrester. The copper ground bar shall be on both the high and low sides. The system neutral shall be connected to the low side ground bar with 4/0, 19 strand class B copper cable (bare). The copper ground bar for each side shall terminate at a grounding pad. The arresters shall be tied to the copper ground bar with 4/0, 19 strand class B copper cable (bare).
- C. Grounding pads shall be located diagonally opposite each other on the transformer. Each pad should be suitable for a NEMA 2-hole grounding terminal. The only additional ground connections required in the field shall be the installation of ground connectors to the substation ground grid.

2.06 COOLING EQUIPMENT:

- A. Cooling equipment controls, cable and mounting accessories shall be provided, ready for connection of the power supply.
- B. The transformer shall be equipped with fans and radiators.
- C. The fan power supply shall be 240 volts AC single phase.
- D. All conduit, wiring, and automatic controls shall be pre-wired at the factory and controls located in the transformer control box.
- E. The controls shall include a 240 volt power supply breaker, control contactor, "manual"- "off"- "automatic" switch, and a loss of voltage relay with one set of contacts open when the relay is energized for use in relaying "loss of voltage" signal to a transformer annunciator.
- F. Cooling selector control switches shall be Electroswitch Series 24, no equal.

- G. Sensing for the fan control shall be from the hot spot winding temperature indicator.
- H. Forced air cooling fans shall have plug-in type connectors. Furnish Krenz Vent, California Turbo, or Waukesha Electric, no equal.
- I. Removable radiators shall have oil tight valves on the tank at the inlet and outlet connections of each radiator. Inlet and outlet flanges shall be sealed with steel plates for shipment. Removal of radiator shall not require draining of oil from any device other than the equipment being removed. Radiators shall be fully assembled and attached to the tank during testing at the factory, to assure proper alignment prior to shipping. All radiators shall be interchangeable and hot dipped galvanized. Each radiator section shall have a drain valve (with end-plug) and a top fill plug.

2.07 CURRENT TRANSFORMERS:

- A. Current transformers shall be factory installed.
- B. The current transformers shall be multi-ratio with five primary taps and relaying accuracy class of C800, with fully distributed windings where the turns are equally spaced around the circumference of the core and a thermal rating of 2.0. Available ratios shall be in accordance with ANSI/IEEE C57.13.

- C. Furnish CTs as follows:

| <u>Bushings</u> | <u>CT Position</u> | <u>Ratio</u> |
|-----------------|--------------------|--------------|
| H1,H2,H3 | 1 | 1200/5 MR |
| | 2 | 1200/5 MR |
| X1, X2, X3 | 1 | 1200/5 MR |
| X0 | 1 | 1200/5 MR |

- D. Separate CTs shall be provided for the winding hot spot temperature indication circuit and the LTC line drop compensator circuit.
- E. Acceptable CT manufacturers are ABB, Associated Engineering, General Electric, or Meramec.

2.08 BUSHINGS:

- A. Bushings shall be in accordance with ANSI/IEEE Standard C57.19.01-2000.
- B. Bushings shall be porcelain ANSI No. 70 light gray color. Only ABB, PCORE (formerly LAPP), and WARCO bushings are acceptable on this transformer.
- C. High side bushings shall be porcelain, cover mounted, and installed in Segment 3. A NEMA 4-hole aluminum terminal pad shall be provided for each of the bushings.

- D. Low side bushings and the neutral (Xo) bushing shall be side tank mounted inside the air terminal chamber. Terminals shall be standard NEMA 8 bolt, 1-3/4 inch spacing. Bushings shall be suitable for copper-cable connections.
- E. Bushing general requirements and testing shall conform to ANSI/IEEE Standard C57.19.100. Bushings shall have a C1 power factor <0.5% and a C2 power factor <1.0% at 20°C. C1 and C2 power factor values and capacitance shall be indicated on the bushing nameplate. A certified test report shall be supplied for each bushing.
- F. The transformer shall be tested with the bushings that will be shipped with the unit. Test bushings are not allowed.
- G. Busbar extensions shall be provided from the low-side bushings in the ATC to serve as a termination point for the external power cables to be installed by Others. These extensions shall be configured to provide ample clearance between the arresters and the cable shield grounds on the power cable terminators being installed by Others. The bus shall be sized for 125% of full transformer capacity, and shall be fixed with the necessary support insulators, as required. Terminals shall be standard NEMA 4 hole, with 1-3/4 inch spacing for external power cable terminations. The arresters shall be factory connected to the low-side bushings or busbar with 4/0, 19 strand class B copper cable (bare) and 2-hole NEMA pads.
- H. Bushing bus-bar supports shall be furnished. Bus-bar supports shall attach to the bus-bar in an independent hole other than the cable connection holes. Bus-bar support mounting shall be constructed of insulating material with adjustable means to increase or decrease tension. Bus-bar supports shall be attached to the air terminal chamber ceiling and any cross member supports required shall be mounted off the air terminal chamber walls. Bus-bar support components shall be designed to be easily removed and reassembled for assembly of cable to the bus-bar if needed. Other support means may be considered with approval by the Engineer.

2.09 TEMPERATURE SENSING AND RELAY EQUIPMENT:

- A. The manufacturer shall provide a transformer monitor to be used for temperature monitoring, automatic cooling control, and alarm collection. Unit shall include fiber-optic Ethernet option, and 125 VDC control power. Unit will require RTD's for top oil temperature, winding temperature, and ambient temperature.
- B. The transformer alarms shall be wired to the transformer monitor. This shall include but not limited to:

Status:

1. Stage 1 Cooling Fans On
2. Stage 2 Cooling Fans On

Alarms:

1. Loss of Cooling Power-Stage 1
2. Loss of Cooling Power-Stage 2
3. Loss of AC-LTC
4. Loss of DC

5. Mechanical Pressure Relief-Main
 6. Mechanical Pressure Relief-LTC
 7. Sudden Pressure
 8. Low Oil-Main Tank
 9. Low Oil-LTC
 10. Oil temperature alarm-Main Tank
 11. Oil temperature alarm-LTC
 12. LV Winding Temperature
- C. Unit also shall have analog inputs for the tap position indication.
- D. Manufacturer shall recommend settings for control/alarm and unit shall be completely wired, programmed, and implemented at the factory.
- E. Provide SEL 2414, part number 241421A3A9X3A3A0830, Key Code 0735, part number to be verified by manufacturer for compatibility with other supplied equipment.
- F. A standard magnetic type liquid level gauge, with 6 inch diameter dial shall be provided. Gauge face to be graduated to indicate critical low, low, 25° C, and high oil levels. Gauge shall have three sets of SPDT contacts, one for critical low oil level for tripping, one for low oil level alarming, and one for high oil level alarming. All alarm leads shall be connected with a quick disconnect connector routed through conduit and landed on terminal blocks located in the transformer control cabinet. Provide Qualitrol or Messko, no equal.
- G. Liquid temperature indicator shall be furnished for the main tank and LTC tank. Indicator shall be Qualitrol or Messko with 6 inch diameter dial. Gauge shall have two sets of SPDT contacts, one for alarming and one for tripping. Gauge shall have a manual resettable drag hand. Switch leads shall be connected with a quick disconnect connector and routed through conduit to the transformer control cabinet. Manufacturer shall preset alarm and trip set points
- H. Winding hot spot temperature indicator shall be furnished. Indicator shall be Qualitrol or Messko with 6 inch diameter dial. Gauge shall have two sets of SPDT contacts, one for alarming and one for tripping. Gauge shall have a manual resettable drag hand. Switch leads shall be connected with a quick disconnect connector and routed through conduit to the transformer control cabinet. Manufacturer shall preset alarm and trip set points.
- I. A rapid pressure rise relay shall be furnished and prewired to a seal-in relay located in the transformer control box. The rapid pressure rise relay shall be flange mounted to a shut off valve. The seal-in relay shall have a 125 VDC operating coil with a minimum of 3 normally open contacts for sealing-in, target indication, and trip. A reset button shall also be provided. Provide Qualitrol 900 Series Rapid Pressure Rise Relay and 909-300 seal-in relay or approved equal.
- J. A pressure relief device with standard alarm switch and a visual indicating flag for each oil filled compartment shall be supplied. One set of normally open contacts shall be provided for signaling operation to SCADA. Switch leads shall be

connected with a quick disconnect connector and routed to the control cabinet. Provide Qualitrol XPRD Pressure Relief Device or approved equal.

- K. The Supplier shall supply and install steel or aluminum piping to direct the flow of oil from each pressure relief device to a point 1 foot above the base of the transformer. Support the piping as required. Piping and supports shall be painted to match the color of the transformer.
- L. An alarm for loss of AC power to the cooling system shall be provided.

2.10 OIL AND OIL PRESERVATION:

- A. Oil preservation shall be accomplished by means of automatic nitrogen gas equipment with alarm contacts for low cylinder and high/low transformer tank pressure and with gas sampling capability. An enclosure with a condensation heater shall be furnished to protect oil preservation equipment. Furnish pressure vacuum gauge for tank pressure and also pressure gauge for gas cylinder. Furnish inlet and outlet lines from the transformer tank gas space to the nitrogen gas system. Each line to be furnished with a shut-off valve.
- B. Oil shall be Type II (oxidation inhibited) mineral insulating oil of petroleum origin for use as an insulating and cooling agent in power transformers with 0.3% inhibitor content.
- C. The oil shall meet all applicable requirements of Type II mineral oil as defined in the latest revision of ASTM Standard D3487-87A. Transformer nameplate shall contain manufacturer's certification that the insulation oil used meets all federal requirements for PCB concentrations.
- D. A pressure-vacuum gauge shall be provided on the main tank. Also provide a pressure-vacuum bleeder for the main tank.
- E. The Supplier shall furnish a certified report at the time of delivery of the transformer indicating compliance with all regulations concerning polychlorinated biphenyl's (PCBs).

2.11 CORE AND COILS:

- A. The core shall be constructed using low loss cold-rolled grain-oriented silicon steel. Steel is to be cut to width, annealed and coated with an inorganic insulating material.
- B. Cores shall be constructed using stepped circular cross-sections with fully mitered step lap joints for all windings except the series winding or preventative autotransformer if used. No section of the core assembly shall be bolted together for support. Core legs shall be bonded with epoxy cement after assembly.
- C. The core shall be insulated from its support frames and connected to ground at only one point. The core ground strap is to be brought out through the tank cover and

grounded using a low voltage bushing and a small JIC box or other suitable mechanical protection.

- D. All windings shall be made of copper rectangular magnet wire with thermally upgraded paper used for turn to turn insulation. Continuously transposed conductor can be used where appropriate. The conductor is to be tested prior to insulation wrapping through the use of burr detectors or similar device to ensure that there are not any burrs or nicks in the conductor. The insulating paper shall be applied in either single or multiple strands in such a manner that there is a 30% overlapping of the paper surfaces. Sufficient tension shall be maintained during the insulation application to prevent loose wraps.
- E. Winding cylinders shall be made from a single piece of high density material as manufactured by EHV Weidmann, Lignostone, or approved equal. All coil spacers shall be keyed to the winding cylinder and to vertical key strips on the outside of the coil.
- F. Coils shall have their full circumference supported by the frame assembly. Coil supports and full circumference clamping rings shall be fabricated using high density material as manufactured by EHV Weidmann, Lignostone, or approved equal.
- G. The transformer, including all core and coil assemblies, shall be power class, circular core/coil design. The high side shall be disk wound and the low side shall be disk or helical construction. **Rectangular core and coils are not acceptable for this transformer.**
- H. Core and coils shall be dried using a “vapor phase” system prior to filling.
- I. The regulating winding shall be fully distributed and be electrically independent from or placed in a separate winding tube from the high and low voltage windings.
- J. The core and coil assembly shall be dry enough to obtain a power factor of 0.5% or less at 20°C.

2.12 MECHANICAL FEATURES – MAIN TANK:

- A. The de-energized tap changer on the high voltage side shall have the operating handle(s) brought out to the side of the tank with provision for padlocking.
- B. A magnetic liquid level gauge with two-step normally open contacts shall be furnished. The first step shall alarm on a low oil level condition, with the second step initiating a breaker trip upon a critical low oil level. A minimum of two contacts per stage shall be wired and accessible in the transformer control cabinet. Manufacturer shall recommend settings for the transformer supplied and implement these at the factory.
- C. A tank pressure gauge shall be provided to monitor nitrogen gas pressure in the tank. A minimum of two individually adjustable, normally open alarm contacts

associated with the pressure on the tank shall be included. Manufacturer shall recommend settings for the transformer supplied and implement these at the factory.

- D. A tank valve shall be provided to serve as drain valve, bottom filter press connection, and liquid sampling valve.
- E. A valve shall be furnished for top filter press connection.
- F. Provide lifting hooks on the tank, lifting eyes on the cover and provision for jacking.
- G. The transformer base shall have members forming a rectangle which shall permit rolling in the directions of the centerlines of the segments. The points of support of these members shall be so located that the safe angle of tilt of the base shall be at least 15 degrees from the horizontal with or without oil in the transformer. Arrangement for pulling the transformer parallel to centerlines of segments shall be provided in the base. A flat-bottom unit also may be furnished.
- H. The main tank cover shall be domed to ensure water runoff and welded to the tank. An inorganic gasket shall be permanently installed between the cover and the tank to prevent weld splatter from entering the tank. A minimum of two (2) manhole covers shall be provided with a raised rim to discourage entrance of moisture. Manhole covers shall have a handle and be of the bolt-on type.
- I. All seams and joints shall be welded on the inside and outside. The tank and radiators shall be designed to withstand an internal operating pressure of 8 psi with a margin of at least 25% over pressure. The tank and radiators shall be designed to withstand full vacuum. All external tank supports and stiffeners shall be box beam construction, continuously welded, and shall not be pressurized to provide sufficient support.
- J. A complete stainless steel instruction nameplate shall be furnished and mounted on the transformer.
- K. The surface shall be washed with an iron phosphate conversion with a chrome seal before priming and painting.
- L. The exterior surface shall first be primed with a two part zinc chromate epoxy primer. Then a force cured two part urethane enamel topcoat shall be applied using plural component equipment that automatically measures and mixes the paint system. The exterior coating shall be a minimum of 3 mils thick and capable of meeting ANSI C57.12.28.
- M. Tank finish shall be ANSI #70 gray. The top of the tank shall be coated with a nonskid surface. The tank bottom shall be covered with an asphalt undercoating. Extra touch-up paint shall be furnished with the transformer. Inside of the control compartment shall be painted white.

- N. The interior of the transformer tank, tank cover, and LTC compartment shall be coated with white oil resistant epoxy enamel compatible with transformer oil per ANSI 3455.
- O. All auxiliary wiring shall be terminated in a cabinet mounted on the side of the transformer tank located in Segment 2. Cabinet shall be completely weathertight, gasketed, with a three point latching mechanism. Cabinet shall have swing doors with lock down in open position, padlockable in the closed position. All equipment shall be provided with marked terminal blocks for interconnecting wiring with remote control panels. A drill plate on bottom of control box shall be provided for conduit entrance. A copper ground bus shall be provided, tapped for grounding of current transformers, etc.
- P. The tank and radiators shall be fabricated from steel with sufficient strength to withstand normal service stresses without distortion or damage.
- Q. All joints in the tank and radiators shall be made oil tight and gas tight by welding inside and outside. Seams on all tank wall corners will NOT be acceptable.
- R. All exterior wiring shall be placed in weather-proof conduit, rigid or flexible as appropriate based on the applications. Conduit shall be securely attached to the transformer.
- S. The operating mechanism/control cabinet shall be rated NEMA 3S, dust tight, rain tight, and sleet and ice proof with a three-point latching mechanism. Provide anti-condensation heater(s) as required.
- T. The transformer shall be furnished with an air terminal chamber, containing the low side bushings, neutral bushing, and lightning arresters. The LV air terminal chamber shall be provided with hinged doors on front side for easy access and installation. The air terminal chamber shall have access removable covers/doors on the sides. The doors shall be completely weathertight, gasketed, and shall be provided with a stainless steel or cast handle and three point latching mechanism. The bottom of terminal chamber shall extend to the base of the transformer. The terminal chamber shall be equipped with a removable plate for terminating conduits. The terminal chamber shall be installed in Segment 4 as defined by ANSI Standard C57.12.10.

2.13 LOAD TAP CHANGER:

- A. The LTC mechanism shall be mounted in a separate compartment in Segment 2 as defined by ANSI Standard C57.12.10 (not in the main tank), that will permit completely draining all the oil in the compartment without draining the oil in the main transformer tank.
- B. The tap changer shall provide voltage regulation of 10 percent raise, or lower, in (16) 5/8 percent steps, both raise and lower.
- C. The LTC compartment shall be capable of withstanding full vacuum in the main tank without damage to the LTC compartment or components.

- D. The LTC shall be vacuum type and shall be sized to fit the ampacity requirements of the transformer.
1. Vacuum type shall be Reinhausen Manufacturing, Inc. type RMV-II. A vacuum bottle protective circuit shall be provided with a set of contacts for alarm purposes with the RMV-II tap changer.
- E. Tap changer shall consist of a motor operated tap changer. The tap changer shall also be provided with a weatherproof compartment for all control components needed for automatic LTC control, terminal boards, conduit entrance and circuit breaker for control power.
- F. The tap changer shall have full rated kVA taps above normal and current rating corresponding to full load current at rated voltage on all taps below normal voltage. Tap changer shall be designed to regulate the low voltage side and shall be installed in the LV winding, high voltage LTC's are not acceptable.
- G. The tap changer shall be rated for 500,000 operations before contact replacement. The tap changer motor shall be rated for 120/240 VAC single phase.
- H. The tap changer controller shall be digital with remote monitoring and control capabilities intended for a substation integration scheme, mounted inside the control cabinet. Furnish Beckwith type M-2001D. The unit shall be capable of communicating in DNP 3.0 communications protocol. Furnish the Beckwith S-2001D TapTalk® software that will be used to connect the unit via a remote laptop or other device(s). Also provide M-0329B backup control.
1. The controller settings will be furnished by the Engineer for testing at the manufacturing facility. Provide the Engineer 2 weeks notice prior to testing of the LTC controller settings.
 2. The Supplier shall provide the Engineer with a brief report verifying testing has been completed, whether the settings are satisfactory for proper controller operation, and recommendations for final setting implementation and commissioning.
- I. The tap changer controller shall be equipped with the following accessories:
1. Voltage test terminals.
 2. Alpha-numeric Vacuum Fluorescent Display VFD. Option V.
 3. Communications equipment. Front-panel local data port for connection to a portable computer, USB 1.1. Include communication software for installation on Owner's computer.
 4. Communications port (COM1-top) shall interface with fiber optic (ST) and RS-485. Option 4S.

5. Communications port (COM2-top) shall interface with standard RS-232. Option 20.
 6. Ethernet port (COM3-top) shall be RJ-45 jack. Option C.
 7. Communications protocol shall be MODBUS and DNP 3.0. Option 0.
- J. Tap changer shall be equipped with the following accessories:
1. The Supplier shall furnish a dual column breather (DCB) or auto recharging dehydrating breather system to the LTC of the transformer. The system shall remove moisture from incoming air into the LTC tank. DCB shall be shipped as a single, integrated assembly along with accessories necessary for installation. The DCB controller shall have indicating LEDs of breather status and hardwired alarm contact to terminal block in primary control cabinet. Power for DCB shall be integrated into the existing 120/240 VAC supply for transformer and not require an independent power circuit.
 2. Manual tap changing crank or handwheel.
 3. Position indicator with drag hands and electric reset momentary switch. The reset switch shall be located in an easily accessible location in the control panel compartment. **Indicator shall be located in a position that is easily seen by a person standing on the ground directly adjacent to the unit, with the control cabinet doors closed.**
 4. Interlock to prevent electrical operation with crank installed.
 5. Current source for compensator. Provide an LDC-CT as required.
 6. Liquid level indicator for LTC compartment with two-step normally open contacts shall be furnished. The first step shall alarm on a low oil level condition, with the second step initiating a breaker trip upon a critical low oil level. A minimum of two contacts per stage shall be provided. Manufacturer shall recommend switch settings for the transformer supplied.
 7. Drain and filter valves for LTC compartment.
 8. LTC control cabinet shall be equipped with a 120 V, 20 A weatherproof receptacle.
 9. LTC control cabinet shall be equipped with a door-activated LED light.
 10. LTC control cabinet shall be provided with a positive temperature coefficient heater to minimize condensation. Provide High Voltage Supply 1030 or equal. Quantity and size of heaters shall be determined by Supplier.
 11. Static voltage sensing device.
 12. Non-resettable operation counter.

13. Local-remote-off switch with spare contact for remote switch position indication located inside the transformer control cabinet.
 14. Circulating current apparatus including paralleling reactor, appropriate control circuits and switch, paralleling current transformers, and lock-out relaying equipment with normally open contact for alarming high circulating current, to allow transformer to be operated in parallel.
 15. Provide terminal blocks and provisions for remote auto-manual switching and remote raise-lower switching, located inside the transformer control cabinet. Remote switches by Others.
- K. Provide all necessary selsyns and contacts to provide remote position indication. Furnish a solid state remote position indicator and transducers in the transformer cabinet (INCON 1250B). Also furnish a current loop interface (Beckwith M-2025B) to connect the 0-1 mA output of the 1250B to the Beckwith M2001D controller, which will provide tap position indication in the controller. Locate devices inside the transformer control cabinet. INCON shall be factory programmed.
- L. The load tap changer mechanism is to be furnished with its own nameplate which fully describes the system. Items to be included, but not limited to, are manufacturer, model number, year of manufacture, maximum rated through current, type of mechanism, and the amount of oil (gallons).
- M. Minimum and maximum control cabinet heights above ground shall be 24 inches and 72 inches, respectively. Control cabinet shall have swing doors with lock down in open position, padlockable in the closed position.

2.14 CONTROL WIRING REQUIREMENTS:

- A. All taps of the multi-ratio BCTs shall be brought to an accessible shorting-type terminal block in the control cabinet. Shorting type terminal blocks shall be General Electric Type EB-27 or equal.
- B. All wiring shall be identified at the terminal blocks to designate its source and function. Terminal blocks shall be General Electric type EB-25 or equal.
- C. All wiring in the cabinet shall be neat in appearance. Wires shall be terminated with ring type insulated lugs, with both lug and insulation securely crimped.
- D. All control circuits shall be protected with appropriately identified breakers or hinged knife blade disconnect switch and clip mounted fuses.
- E. Control and auxiliary circuits shall be wired with #12 AWG, minimum, switchboard wire. All current transformer wiring shall be #10 AWG, minimum, switchboard wire. All switchboard wire shall be XL or ETFE (Tefzel 750) insulated, stranded wire, type SIS.

- F. All alarm and auxiliary contacts shall be suitable for use on an ungrounded 125 VDC. The contacts shall be individually wired out to terminal blocks and shall be electrically isolated.
- G. All control wiring between compartments and/or cabinets shall be enclosed in metal raceways.

2.15 TRANSFORMER DIMENSIONS:

- A. This transformer will replace an existing transformer at the Owner's substation. The dimensions and configuration of the proposed transformer shall be arranged to accommodate existing connections and space limitations.

2.16 ACCEPTABLE MANUFACTURERS:

- A. A transformer from the following list of manufacturers only shall be furnished, unless written permission is obtained from the Engineer or Owner.
 - 1. ABB Kuhlman.
 - 2. Delta Star Inc.
 - 3. SPX Transformer Solutions (Waukesha Electric Systems)
 - 4. Pennsylvania Transformer.

PART 3 - EXECUTION

3.01 TESTING AND REPORTS:

- A. All tests shall be made in accordance with the latest revision of ANSI Standard C57.12.00 for a Class II transformer and a certified test report in electronic '.pdf' and hard copy (one per manual) versions shall be provided. Any and all factory and field tests that are required by the manufacturer and are required so as not to void any part of the warranty, shall be made by the manufacturer and its personnel. Any and all costs as well as equipment required for and associated with these required tests shall be the responsibility of this Bidder. Standard tests include but are not limited to the following tests:
 - 1. Resistance measurements of all windings on the rated voltage tap and at the tap extremes.
 - 2. Ratio tests on rated voltage connections and on all tap connections.
 - 3. Polarity and phase-relation tests on rated voltage connections.
 - 4. No load loss at rated voltages on rated voltage connections.

5. Exciting current at rated voltage on rated voltage connections.
6. Impedance and load losses at rated current on rated voltage connections and on the tap extremes.
7. Mechanical leak test on tank and coolers.
8. Applied potential tests.
9. Induced potential tests.
10. Impulse tests or production line impulse test may be accepted as a substitute for the standard test if approved by the Engineer.
11. Insulation power factor test. Power factor test shall be made on each oil filled bushing, individual winding to ground, and between windings. The values of bushing and winding power factor shall not exceed 0.5 percent, when corrected to 20°C.
12. Winding temperature rise for each stage of cooling specified.
13. The transformer design shall be adequate to withstand short circuits, with the fault current limited only by the impedance of the transformer itself.
14. Partial discharge test and RIV test shall be performed simultaneously on all windings. No partial discharge greater than 300 pico-coulombs shall be acceptable.
15. Sweep frequency response testing shall be performed to generate a “footprint” of the winding positioning to be used to determine if the windings have moved or shifted. This critical determination of winding movement will be used as basis for future evaluation of the integrity of the transformer.

B. Oil screen tests for the main tank and LTC include the following.

1. Liquid Screen Analysis:
 - a. Dielectric test (ASTM D877 and D1816-2)
 - b. Neutralization [Acid Number (D-974)]
 - c. Interfacial Tension (D-971)
 - d. Moisture (D-1533)
 - e. Color Number (D-1500)
 - f. Visual and Sediment Examination (D-1524)
 - g. Power Factor @ 25°C and @ 100° C (D-924)
 - h. Specific Gravity (D-1298)
2. Gas-In-Oil Analysis:
 - a. Hydrogen
 - b. Oxygen
 - c. Nitrogen

- d. Methane
- e. Carbon Monoxide
- f. Carbon Dioxide
- g. Ethane
- h. Ethylene
- i. Acetylene

*Gas-In-Oil Analysis tests shall be performed before all electrical testing.

- C. The Owner or Engineer reserves the right to witness the tests at the manufacturer's facilities. Provide a minimum of 2 weeks notice prior to factory testing.
- D. The Owner or Engineer reserves the right to inspect the completed core and coil assembly prior to tanking. The manufacturer shall notify the Owner and Engineer not less than five days prior to the date of tanking to allow the customer to witness tanking, if so desired.

3.02 FIELD SERVICES:

- A. The Supplier shall include the cost of installation and field services for each transformer in the spaces provided on the Bid Form. The services shall include the following items at a minimum. The Supplier shall also attach a detailed description with the Bid of the services to be performed.
- B. The services shall include receiving the transformer, unloading, placement of unit on concrete pad, attachment of all radiators and accessories, and filling of oil as required. The Supplier shall inspect the unit and repair any damage experienced during shipment.
- C. The services shall include testing the unit. The minimum tests shall be standard field test, including, but not limited to TTR, megger check, core ground check, and LTC operation tests, and shall include all tests required in order not to void the warranty. Certified test reports shall be supplied. Attach a complete list of tests proposed with the Bid.
- D. In addition to standard field tests, the Supplier shall furnish certified oil tests covering the oil tests listed below. The Supplier shall send the samples to lab approved by the Owner. These tests shall be done in the field after the transformer is placed on the pad, NOT at the manufacturing site.
 - 1. Liquid Screen Analysis:
 - a. Dielectric test (ASTM D877 and D1816-2)
 - b. Neutralization [Acid Number (D-974)]
 - c. Interfacial Tension (D-971)
 - d. Moisture (D-1533)
 - e. Color Number (D-1500)
 - f. Visual and Sediment Examination (D-1524)
 - g. Power Factor @ 25°C and @ 100° C (D-924)
 - h. Specific Gravity (D-1298)

2. Gas-In-Oil Analysis:
 - a. Hydrogen
 - b. Oxygen
 - c. Nitrogen
 - d. Methane
 - e. Carbon Monoxide
 - f. Carbon Dioxide
 - g. Ethane
 - h. Ethylene
 - i. Acetylene

*Gas-In-Oil Analysis tests shall be performed before all electrical testing.

- E. Submission of a Bid with per diem or hourly rate without including a total or limit to this section will be grounds for disqualification of the bid.
- F. The Supplier shall include hourly or daily rate for additional work beyond the scope of this contract in the event these services are required.
- G. **The field services shall be completed within 15 days after delivery of the transformer.**

* * * END OF SECTION * * *

MATERIAL AGREEMENT

THIS AGREEMENT made as of ____, 2021 between _____ (hereinafter called the "Supplier"), and Delano Municipal Utilities (hereinafter called the "Owner"),

WITNESSETH, that the Supplier and the Owner for the considerations hereinafter named agree as follows:

1.01 SCOPE OF WORK.

- A. The Supplier agrees to sell and deliver to the Owner and the Owner agrees to purchase and receive from the Supplier equipment in strict accordance with the documents entitled "Furnishing 69/12.47 kV Power Transformer" for Delano Municipal Utilities.

1.02 THE CONTRACT DOCUMENTS.

- A. The Contract Documents shall consist of this written Agreement, Bid Form, Advertisement for Bids, Instructions to Bidders, Addendums issued numbers ____, Insurance Policies and Certificates, General Requirements, Performance Bond, drawings and specifications, tests and engineering data, approved change orders, Supplier's Requests for Payment, and all addenda issued by the Owner prior to the awarding of the Contract (collectively, the "Contract Documents"). All of the Contract Documents listed in this Material Agreement are hereby incorporated by this reference as fully as if they were set out in this Agreement in full, all of which documents and instruments are incorporated by the signature of the parties hereto.

1.03 TIME OF COMPLETION.

- A. The work to be performed under this contract shall be commenced upon execution of this Agreement. Material shall be fully delivered by _____ *[To be updated with Supplier's guaranteed delivery date]*, and onsite Field Services shall be fully completed by _____ *[To be updated with date 30 days after delivery date]*.

1.04 THE CONTRACT SUM.

- A. The Owner shall pay the Supplier for the equipment, in current funds: The Owner shall pay to the Supplier for performance of the work encompassed by this Agreement, and the Supplier will accept as full compensation therefore the lump sum of \$ _____, subject to adjustment as provided by the Contract Documents, to be paid by progress payments in cash or its equivalent in the manner provided for in the Contract Documents.

1.05 PAYMENT.

- A. Payment to the Supplier for the equipment shall be made on the basis of ninety five percent (95%) of the base bid for the equipment, within 30 days of receipt of the equipment in acceptable condition and associated invoice. Payment shall be made for

the remaining 5 percent (5%) of the contract price, less calculated penalties, within 30 days after final completion, field testing, and receipt of test reports, final drawings, certification by the Engineer, and associated invoice.

1.06 TERMINATION.

- A. This Agreement may be terminated by either party upon seven (7) days written notice should the other party breach the terms of this Agreement and, that party fails to initiate and diligently pursue a cure to such breach within the seven (7) day period after receiving such written notice.

1.07 ASSIGNMENT.

- A. The Supplier shall not assign all of his rights or obligations under this Agreement without the express written consent of the Owner. Upon any assignment even though consented to by the Owner, the Supplier shall remain liable for the performance of the work under this Agreement.

1.08 PARTIAL INVALIDITY.

- A. If any provisions of this Agreement are in violation of any statute or rule of law of the State of Minnesota, then such provisions shall be deemed null and void to the extent that they may be violative of law, but without invalidating the remaining provisions hereof.

1.09 WAIVER.

- A. No waiver of any breach of any one of the agreements, terms, conditions or covenants of this Agreement by the Owner shall be deemed or imply or constitute a waiver of any other agreement, term, condition or covenant of this Agreement. The failure of the Owner to insist on strict performance of any agreement, term, condition or covenant, herein set forth, shall not constitute or be construed as a waiver of the Owner's rights thereafter to enforce any other default; neither shall such failure to insist upon strict performance be deemed sufficient grounds to enable the Supplier to forego or subvert or otherwise disregard any other agreement, term, condition or covenant of this Agreement.

1.10 ENTIRE AGREEMENT.

- A. The within Agreement, together with the Contract Documents, constitute the entire agreement of the parties hereto. No modification, change, or alteration of the within Agreement shall be of any legal force or effect unless in writing, signed by all the parties.

1.11 COUNTERPARTS.

- A. This Agreement may be executed in several counterparts and each such counterpart shall be deemed an original.

1.12 GOVERNING LAW.

- A. Venue for any and all legal actions regarding or arising out of the transaction covered herein shall be solely in the District Court in and for Wright County, State of Minnesota or the United States District Court for the State of Minnesota. This transaction shall be governed by the laws of the State of Minnesota.

1.13 INSURANCE REQUIREMENTS:

- A. The Supplier shall secure and maintain such insurance policies as specified in the General Requirements of this Contract.

1.14 NOTICES.

- A. All notices, requests, demands and other communications given or to be given under this Agreement shall be in writing and shall be deemed to have been duly given when served if served personally, or on the second day after mailing if mailed by first class mail, registered or certified, postage prepaid, and properly addressed to the party to whom notice is to be given as set forth below.

If to Owner:

If to Supplier:

Delano Municipal Utilities
11 Bridge Avenue West
Delano, MN 55328

1.15 RISK OF LOSS.

- A. Risk of loss of the Equipment shall remain with Supplier until the Equipment has been unloaded, inspected, and accepted by the Owner or Owner's Representative, at which time risk of loss shall pass to Owner. Notwithstanding the foregoing, if Owner rejects the Equipment as non-conforming, risk of loss of the Equipment shall be and remain with Supplier until Supplier corrects the non-conformity or Buyer accepts the Equipment.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives all as of the day and year first above written.

DELANO MUNICIPAL UTILITIES
 Owner

 Supplier

By _____

By _____

ATTEST:

ATTEST:

By _____

By _____