

# **Project Manual & Specifications**

## **Animal Control Facility Generator**

**Bid No. 2026-05**

**Prepared for:  
Town of Montville  
310 Norwich-New London Turnpike  
Uncasville, Connecticut 06382**

September 26, 2025

Prepared By:  
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# **I.            ADVERTISEMENT FOR BIDS**

**TOWN OF MONTVILLE**  
INVITATION FOR PROPOSALS BID #2026-05

The Town of Montville is interested in receiving proposals for a 100 A, 3-Phase Diesel Standby Generator at the Animal Control Facility. A copy of the specifications is available at [www.montville-ct.org](http://www.montville-ct.org).

All proposals are due no later than **October 23, 2025 at 10:00 AM** and must be received at the Finance Office prior to the due date and time. A proposal must be delivered by hand, or by regular or overnight mail to the Town of Montville, Finance Office, 310 Norwich/New London Turnpike, Uncasville, Connecticut 06382, with the proposal contained in a sealed envelope marked **“Animal Control Facility Generator”**. The proposal must be signed by a Company official. Proposals will be opened and read aloud in the Finance Office.

In addition to other reservations and conditions contained in the proposal documents, the Town of Montville reserves the right to waive any technical defects in the proposals received; to waive any formalities or irregularities; to reject any and all proposals for any reason, including that it or they do not conform to the terms and conditions described herein, as determined by the Town in its sole discretion; to accept or reject any part of any proposal received; to present and negotiate terms of a contract together or separately with any party submitting a proposal; to determine qualifications exclusively and finally; to request additional qualifications; and to select any proposal or part thereof based on any combination of factors, including the amount proposal, the time of completion, and the Town’s best interests. The Town further reserves the right to retain all proposals submitted and to use any ideas in a proposal regardless of whether or not that proposal is selected.

Leonard G. Bunnell Sr., Mayor  
Town of Montville

## **II.                    INFORMATION TO BIDDERS**



## **INFORMATION TO BIDDERS**

1. **Bid Documents:**

Complete sets of the Bidding Documents are available digitally only as stated in the advertisement or invitation to bid. Neither the Owner nor Engineer will be responsible for full or partial sets of Bid Documents obtained from any other source.

Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2. **Interpretations and Addenda:**

No interpretation of the meaning of the Drawings, Specifications, or other prebid documents will be made to any bidder orally. Every request for such interpretation must be in writing and addressed to Kyle Haubert, CLA Engineers, Inc., 317 Main Street, Norwich, CT 06360; Fax: 860-886-9165, email at: [khaubert@claengineers.com](mailto:khaubert@claengineers.com). Interpretations or clarifications considered necessary in response to such questions will be issued by Addenda. Questions received less than seven (7) days prior to the date and time for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner or Engineer.

Potential Bidders are responsible for checking the Town of Montville website at <http://www.townofmontville.org/> for any addendums and updates regarding this Bid.

3. **Receipt of Bids:**

Sealed bids **(1 original & 1 PDF copy on a USB)** for the “**Animal Control Facility Generator**” will be received at the Finance Office, Montville Town Hall located at 310 Norwich New London Tpke, Uncasville, Connecticut 06382, at the time specified in the advertisement for bids, then opened and read aloud.

The envelopes containing the bids must be sealed and designated as “**Animal Control facility Generator**”.

The Owner may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities in or reject any and all bids. Conditional or qualified bids will not be accepted. Any bid received after the time and date specified shall not be considered. Should there be reasons why the contract cannot be awarded within the specified period the time may be extended by mutual agreement between the Owner and the bidder.

4. Definitions:

The following terms as used in this contract are defined as follows:

- A. Owner - The Owner of the project is Town of Montville, acting through the Mayor.
- B. Contractor - The term "Contractor" as hereinafter used shall refer to the General Contractor for this job.
- C. Owner's Representative - The term "Owner's Representative" as hereinafter used shall refer to any authorized staff, engineer or inspector who is appointed by the Owner to supervise, test or oversee the work herein specified.
- E. Contract - Wherever the term "contract" is used in this document, it shall mean the actual bid form, information to bidders, agreement, specifications, contract drawings or formal purchase order issued to the Contractor.
- F. Project Site - The project site is located at the Town of Montville Animal Control Facility, 225 Maple Avenue, Uncasville, CT.

5. The Owner reserves the right to reject any or all bids, or any part of any bid or waive any informality in bids received, where such action is deemed in the best interest of the Owner.

6. Experience:

The Owner will not award this contract unless the Contractor furnishes satisfactory evidence of his/her ability and experience to perform this work, and that he/she has sufficient capital and equipment to enable him/her to execute the work successfully and to complete it within specified time. As part of the bid, at the request of the Owner, the Contractor must submit a list of five similar and successfully completed jobs whose relevance to the proposed job shall be deemed by the Owner. The name, address, and telephone number of a contact person involved with each of these projects must be included.

7. Method of Award-Lowest Qualified Bidder

If, at the time this Contract is to be awarded, the lowest base bid submitted by a responsible bidder which demonstrates adequate experience and does not exceed the amount of funds then estimated by the Owner as available to finance the Contract, the Contract will be awarded on the lowest base bid. If such bid exceeds such amount, the Owner expressly reserves the right to increase or decrease any class, item, or part of the work, and this reservation includes the omission of any such item, items, class, or part of the work as may be decided by the Owner at unit prices submitted by the bidder to bring the Contract within available funds; or the Owner may reject all bids. In determining the lowest qualified bidder the total price bid for the Basic Contract will be used.



8. Time of Completion & Liquidated Damages:

The selected Contractor must obtain bonding, insurance and sign a contract within five (5) days of receipt of notice of award. The bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" of the Owner. The date of the "Notice to Proceed" may be coordinated with the Contractor to accommodate product lead times.

The Work will be substantially completed within **30 calendar days** after the date when the Contract Times commence as outlined in the Notice to Proceed.

Contractor and Owner recognize that time is of the essence and that Owner will suffer financial loss if the Work is not completed within the times specified above, plus any extensions thereof allowed in accordance with the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner **\$1,000.00** for each day that expires after the time specified in the Paragraph above for Substantial Completion until the Work is substantially complete.

9. Employment of Labor:

The wages paid to mechanics, laborers or workmen employed upon the work herein contracted to be done shall be at a rate equal to the rate of wages prevailing for the same work in the same trade or occupation in the Montville area as determined by the labor Commissioner of the State of Connecticut. See Section 31-53 of the General Statutes of the state of Connecticut, Revision of 195S, as amended.

Public Act 79-325 passed by the 1979 Legislature covers exemptions from Section 31-53 of the General Statutes. Under the new exemptions, effective October 1985, the regulations that the prevailing wage must be paid for work performed by contractors and subcontractors in connection with work on public facilities will not apply:

To public work alterations, repair, refinishing projects with total cost of less than \$100,000.

To public works new construction with a total cost of less than \$1,000,000.

**All Contractors are informed that the project is considered Alteration/Repair Work.**

All Contractors are advised to inform themselves and to comply with the requirements of Federal, State and local laws governing the employment of labor. The Contractor shall provide certified payroll sheets to the Town, which shall include all employees involved with the project for each payroll period during the course of the project.

10. Bid Security:

Each bid must be accompanied by a certified check of the bidder, or a bid bond prepared on the form of bid bond attached hereto, duly executed by the bidder as principal and having as surety thereon a surety company approved by the Owner, in the amount of **5 percent (5%)** of the bid. Such checks or bid bonds will be returned to all but the three lowest bidders within five days after the opening of bids, and the remaining checks or bid bonds will be returned promptly after the Owner and the accepted bidder have executed the contract; or if no award has been made within 60 days after the date of the opening of the bids, upon demand of the bidder at any time there-after, so long as he has not been notified of the acceptance of his bid. The bid bond of the successful bidder will be retained until the payment bond and performance bond have been executed and approved, after which it will be returned.

11. Contract Security:

The Contractor shall furnish a Performance Bond and Payment Bond in amounts equal to at least one hundred percent (100%) of the contract price as security for the faithful performance of the Contract, and for the payment of all persons performing labor on the project under this contract and furnishing materials, equipment and all other incidentals in connection with this contract. The Surety on such a bond shall be a duly authorized surety company satisfactory to the Owner and the cost of the same shall be paid by the Contractor prior to the starting of any work, the bonds must be approved by the Owner and be in the Owner's hands. The bonds must be from a surety company licensed and approved to do business in the State of Connecticut.

12. Guarantee:

The Contractor at no cost to the Owner shall replace any material or workmanship found to be defective for up to one year from the date of acceptance by the Superintendent. Upon notification of defective material or workmanship, the Contractor shall immediately replace such defective areas, unless otherwise instructed by the Owner. To this end the Contractor shall provide a maintenance bond through the guarantee period. The bonding company shall be acceptable to the Owner.

**III.**

**PROPOSAL FORMS**

## **BID FORM**

TOWN OF MONTVILLE  
ANIMAL CONTROL FACILITY GENERATOR  
MONTVILLE, CONNECTICUT

TO: Town of Montville  
Finance Office  
310 Norwich-New London Tpke.  
Uncasville, CT 06382

FROM: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The undersigned, having familiarized (himself, itself, themselves) with the existing conditions on the Project Site affecting the cost of the work, and with the Contract Documents for the **Town of Montville Animal Control Facility Generator** project and hereby proposes to furnish all supervision, technical personnel, labor, materials, equipment, tools, appurtenances, services, materials not supplied by the Owner, and anything else necessary, including utility and transportation services required to perform and complete this Contract, all in accordance with the Contract Documents, at and for the unit prices for work in place for the following work items.

Unit prices are to be written in both words and figures. In case of discrepancy, the unit price shown in words will govern.

**The quantity of the units shown below is given for the purpose of determining the Award. The Owner reserves the right to increase or decrease these quantities. Payment to the Contractor will be based on completed measured quantities of these work items.**

### **ITEM DESCRIPTION**

1. Furnish and install the Town of Montville Animal Control Facility Generator  
100 A, 3 Phase, Diesel Standby Generator  
Including but not limited to generator delivery, placement, fuel, wiring, conduit, startup testing, and all other items required for a fully functioning standby generator.

**Lump Sum Price:** \_\_\_\_\_

**Lump Sum Price in Words:** \_\_\_\_\_  
\_\_\_\_\_

**Anticipated Generator Lead Time:** \_\_\_\_\_

This contract is to be awarded to that responsible Bidder whose total bid is the lowest number of dollars for the above items.

The undersigned agrees, if awarded the Contract, to execute and fully complete all work in accordance with the Information To Bidders. The undersigned has checked carefully all the above figures and understands that the OWNER will not be responsible for any errors or omissions on the part of the undersigned in making up this bid.

The Contractor acknowledges the receipt of the following Addenda;

Addendum No. \_\_\_\_\_, dated \_\_\_\_\_

Addendum No. \_\_\_\_\_, dated \_\_\_\_\_

Addendum No. \_\_\_\_\_, dated \_\_\_\_\_

Enclosed is the Bidder's Bond, Certified Check or Cashier's Check No. \_\_\_\_\_ in the amount of five (5%) of the Bid.

Contractor understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding. The Contractor agrees that this bid shall be good and may not be withdrawn for a period of 60 calendar days after the scheduled closing time for receiving bids.

In submitting this Bid, Bidder represents that:

- A. Bidder has examined and carefully studied the Bidding Documents, other related data identified in the Bidding Documents including any addenda.
- B. Bidder has visited the Sites and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.
- E. Based on the information and observations referred to in Paragraph D above, Bidder does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- F. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

- G. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
- H. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

Respectfully submitted:

By \_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Business Address)

\_\_\_\_\_  
(Telephone Number)

\_\_\_\_\_  
(Email or Fax)

(SEAL - if bid is by a corporation)

## **BID BOND**

KNOW ALL MEN BY THESE PRESENTS, that we the undersigned, \_\_\_\_\_

\_\_\_\_\_, as PRINCIPAL, and \_\_\_\_\_  
as SURETY are held and firmly bound unto the Town of Montville hereinafter called the  
"OWNER", in the penal sum of Five Percent of Total Bid Dollars, (\$5% of Total Bid) lawful  
money of the United States, for the payment of which sum well and truly to be made, we bind  
ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally,  
firmly by these Presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted  
the Accompanying Bid, dated \_\_\_\_\_, 20\_, for

*Town of Montville – Animal Control Facility Generator*

NOW, THEREFORE, if the Principal shall not withdraw said Bid within the period specified  
therein after the opening of the same, or, if no period be specified, within ninety (90) days after  
the said opening, and shall within the period specified therefor, or if no period be specified, within  
ten (10) days after the prescribed forms are presented to him for signature, enter into a written  
Contract with the Owner in accordance with the Bid, as accepted, and give bond with good and  
sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment  
of such Contract; or in the event of the withdrawal of said Bid within the period specified, or the  
failure to enter into such Contract and give such bond within the time specified, the Principal shall  
pay the Owner the difference between the amount specified in said Bid and the Amount for which  
the Owner may procure the required work or supplies or both, if the latter be in excess of the  
former, then the above obligation shall be void and of no effect, otherwise to remain in full force  
and virtue.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several seals this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body. In presence of:

(Individual Principal)

(SEAL)

(Partnership)

(Business Address)

(SEAL)

Attest:

(Business Address)

By: \_\_\_\_\_

\_\_\_\_\_

(Corporate Principal)

(Business Address)

By: \_\_\_\_\_ Affix  
Corporate  
Seal

Attest:

\_\_\_\_\_

(Corporate Surety)

By: \_\_\_\_\_ Affix  
Corporate  
Seal

Countersigned

by \_\_\_\_\_

Attorney-in-Fact, State of \_\_\_\_\_

(Power-of-Attorney for person signing for surety company must be attached to bond.)



## **PROPOSED SUBCONTRACTORS**

THE BIDDER SHALL STATE THE NAMES OF ALL THE SUBCONTRACTORS THAT HE PROPOSES TO USE. ATTACH ADDITIONAL SHEETS IF NEEDED.

If none, write "None" \_\_\_\_\_

\*Description of Work \_\_\_\_\_

Proposed Subcontractor, Name \_\_\_\_\_

Address \_\_\_\_\_

\*Description of Work \_\_\_\_\_

Proposed Subcontractor, Name \_\_\_\_\_

Address \_\_\_\_\_

\*Description of Work \_\_\_\_\_

Proposed Subcontractor, Name \_\_\_\_\_

Address \_\_\_\_\_

\*Insert description of work and subcontractors' names as may be required.

This is to certify that all names of the above-mentioned subcontractors are submitted with full knowledge and consent of the respective parties.

The Bidder warrants that none of the proposed subcontractors have any conflict of interest as respects this contract.

Bidder \_\_\_\_\_  
(Fill in Name)

By \_\_\_\_\_  
(Signature and Title)

## **PROPOSED SUPPLIERS**

THE BIDDER SHALL STATE THE NAMES OF PROPOSED MATERIAL SUPPLIERS FOR THE PROJECT. ATTACH ADDITIONAL SHEETS IF NEEDED.

If none, write "None" \_\_\_\_\_

\*Description of Material \_\_\_\_\_

Proposed Supplier, Name \_\_\_\_\_

Address \_\_\_\_\_

\*Description of Material \_\_\_\_\_

Proposed Supplier, Name \_\_\_\_\_

Address \_\_\_\_\_

\*Description of Material \_\_\_\_\_

Proposed Supplier, Name \_\_\_\_\_

Address \_\_\_\_\_

\*Insert description of work and suppliers names as may be required.

This is to certify that all names of the above-mentioned suppliers are submitted with full knowledge and consent of the respective parties.

The Bidder warrants that none of the proposed suppliers have any conflict of interest as respects this contract.

Bidder \_\_\_\_\_  
(Fill in Name)

By \_\_\_\_\_  
(Signature and Title)

## **STATEMENT OF BIDDER'S QUALIFICATIONS**

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information he desires.

1. Name of Bidder.
2. Permanent main office address.
3. When organized.
4. If a corporation, where incorporated.
5. How many years have you been engaged in the contracting business under Your present firm or trade name?
6. Contracts on hand: (Schedule these, showing amount of each contract and the appropriate dates of completion.
7. General character of work performed by your company.
8. Have you ever failed to complete any work awarded to you? If so, where and why?
9. Have you ever defaulted on a contract? If so, where and why?
10. List the more important projects recently completed by your company, stating the approximate cost for each, and the month and year completed.
11. List your major equipment available for this contract.
12. Experience in construction work similar in importance to this project.
13. Background and experience of the principal members of your organization including the officers.
14. Will you, upon request, fill out a confidential detailed financial statement and furnish any other information that may be required by the OWNER?

15. The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the Owner or representative in verification of the recitals comprising this Statement of Bidder's Qualifications.

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
(Name of Bidder)

By \_\_\_\_\_

Title \_\_\_\_\_

State of \_\_\_\_\_ )  
 ) ss.

County of \_\_\_\_\_ )

\_\_\_\_\_ being duly sworn deposes and says that he is \_\_\_\_\_  
\_\_\_\_\_ of \_\_\_\_\_  
(name of organization)

and that the answers to the foregoing questions and all statements therein contained are true and correct.

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Notary Public

My Commission expires \_\_\_\_\_ 20\_\_\_\_.

## **NONDISCRIMINATION IN EMPLOYMENT**

State of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) ss

\_\_\_\_\_, being first duly sworn, deposes and says that:

(1) He is (owner, partner, officer, representative, or agent), of \_\_\_\_\_  
\_\_\_\_\_, the bidder that has submitted the attached bid;

(2) Said bidder (has \_\_\_\_\_) (has not \_\_\_\_\_) previously performed work subject to the President's Executive Order No. 11246, or any preceding similar Executive Order.

Signed \_\_\_\_\_

\_\_\_\_\_  
Title

Subscribed and Sworn to before me

this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

\_\_\_\_\_  
Title

My Commission expires \_\_\_\_\_, 20\_\_\_\_.

## **NON-COLLUSION AFFIDAVIT OF PRIME BIDDER**

State of \_\_\_\_\_ )  
 ) ss.  
County of \_\_\_\_\_ )

\_\_\_\_\_, being first duly sworn, deposes and says that:

- (1) He is (owner, partner, officer, representative or agent) of \_\_\_\_\_, the Bidder that has submitted the attached bid;
- (2) He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;
- (3) Such Bid is genuine and is not a collusive or sham Bid;
- (4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from Bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Owner or any person interested in the proposed Contract; and
- (5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(Signed) \_\_\_\_\_

\_\_\_\_\_  
(Title)

Subscribed and sworn to before me  
this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

\_\_\_\_\_  
(Title)

My Commission expires \_\_\_\_\_, 20\_\_\_\_.

## **CERTIFICATE AS TO CORPORATE PRINCIPAL**

I, \_\_\_\_\_, certify that I am the Secretary of the corporation named as Principal in the within bond; that \_\_\_\_\_, who signed the said bond on behalf of the Principal was then \_\_\_\_\_ of said corporation; that I know his signature, and his signature thereto is genuine; and that said bond was his duly signed, sealed, and attested to for and in behalf of said corporation by authority of this governing body.

(Corporate Seal)

\_\_\_\_\_  
Title: \_\_\_\_\_

## **IV. AGREEMENT AND BOND FORMS**

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**Town of Montville**

**Town of Montville** Generator

Animal Control Facility Generator

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**CLA Engineers, Inc.**

Civil • Structural • Survey

Civil • Structural • Survey



## AGREEMENT

THIS AGREEMENT, made this the \_\_\_\_ day of \_\_\_\_\_ 2025, by and between Town of Montville, Connecticut acting herein through Leonard G. Bunnell Sr., Mayor, hereinafter called “OWNER” and \_\_\_\_\_ *to be determined* \_\_\_\_\_ an *individual, a partnership, a corporation* doing business at \_\_\_\_\_ *to be determined* \_\_\_\_\_ hereinafter called the “CONTRACTOR”.

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned;

1. The CONTRACTOR will commence and complete the **Animal Control Facility Generator**.
2. The CONTRACTOR will furnish all of the material not supplied by Owner, supplies, tools, equipment, labor and other services necessary for the construction and completion of the PROJECT described herein.
3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS WITHIN 10 calendar days after the date of the NOTICE TO PROCEED and will complete the same within **30** consecutive calendar days unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.
4. The CONTRACTOR agrees to perform all the work described in the CONTRACT DOCUMENTS and comply with the terms therein for the amount of \$ T.B.D. \_\_\_\_\_ as shown in the Bid schedule.
5. The CONTRACTOR agrees the sum of 5% of progress pay estimates will be retained until final acceptance of the PROJECT further the sum of 2% of the total PROJECT will be retained for a period of ninety days from final acceptance of the work.
6. The term “CONTRACT DOCUMENTS” means and includes the following:

Invitation to Bid  
Information to Bidders  
Bid Proposal  
Bid Bond  
Proposed Subcontractors  
Statement of Experience  
Qualification Statement

Contract Agreement  
Form of Payment Bond  
Form of Performance Bond  
Technical Specifications  
Drawings prepared by CLA Engineers, Inc.  
Specifications prepared by CLA Engineers, Inc.  
Addenda:

No. \_\_\_\_\_, dated \_\_\_\_\_

No. \_\_\_\_\_, dated \_\_\_\_\_

No. \_\_\_\_\_, dated \_\_\_\_\_

7. The OWNER will pay the CONTRACTOR in the manner and at such times as set forth in the General Conditions such amounts as required by the CONTRACT DOCUMENTS.
8. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns. IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in (3 copies) each which shall be deemed an original on the date first above written.

OWNER: \_\_\_\_\_ Town of Montville \_\_\_\_\_

BY \_\_\_\_\_  
(Leonard G. Bunnell Sr., Mayor)

ATTEST \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

BY \_\_\_\_\_

ATTEST \_\_\_\_\_

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That we \_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_ a \_\_\_\_\_  
(Corporation, Partnership, or Individual)

hereinafter called "Principal" and \_\_\_\_\_  
(Surety)

of, \_\_\_\_\_ State of \_\_\_\_\_ hereinafter called the

"Surety", are held and firmly bound unto The Town of Montville, hereinafter  
(Owner)

called "Owner", in the penal sum of \_\_\_\_\_ Dollars  
(\$ \_\_\_\_\_) in lawful money of the United States, for the payment made, we  
bind ourselves, and successors, jointly presents of which sum well and truly to be our heirs,  
executors, administrators and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered  
into a certain contract with the Owner, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_, a copy  
of which is hereto attached and made a part hereof for the construction of:

TOWN OF MONTVILLE

ANIMAL CONTROL FACILITY GENERATOR

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all  
the undertakings, covenants, terms, conditions, and agreements of said contract during the original  
term thereof, and any extensions thereof which may be granted by the Owner, with or without  
notice to the Surety, and if he shall satisfy all claims and demands incurred under such contract,  
and shall fully indemnify and save harmless the Owner from all costs and damages which it may  
suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense  
which the Owner may incur in making good any default, then this obligation shall be void;  
otherwise to remain in full force and effect.

shall abridge the right of any beneficiary thereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in six (6) counterparts, each one of which shall be deemed an original, this the \_\_\_\_ day of \_\_\_\_, 20\_\_.

ATTEST:

\_\_\_\_\_  
(Principal) Secretary  
(SEAL)

\_\_\_\_\_  
Principal  
By \_\_\_\_\_ (s)

\_\_\_\_\_  
(Address-Zip Code)

\_\_\_\_\_  
Witness as to Principal

\_\_\_\_\_  
(Address-Zip Code)

\_\_\_\_\_  
Surety

ATTEST:

\_\_\_\_\_  
(Surety) Secretary  
(SEAL)

By \_\_\_\_\_  
Attorney-in-Fact

\_\_\_\_\_  
Witness as to Surety

\_\_\_\_\_  
(Address-Zip Code)

\_\_\_\_\_  
(Address-Zip Code)

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is Partnership, all partners should execute bond.

PROVIDED, FURTHER, that ~~Payment Bond~~ Payment Bond value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work of to the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby ~~(Waive of Contract)~~ (Waive of Contract) such change, extension of time, alteration or addition to the terms of the contract or to the work of to the specifications. (Corporation, Partnership, or Individual)

hereinafter called "Principal" and \_\_\_\_\_

PROVIDED, FURTHER, that no final settlement ~~(Surety)~~ (Surety) between the Owner and the Contractor of, \_\_\_\_\_ State of \_\_\_\_\_ hereinafter called

the "Surety", are held and firmly bound unto The Town of Montville  
(Owner)

hereinafter called "Owner", in the penal sum of \_\_\_\_\_ Dollars  
(\$ \_\_\_\_\_) in lawful money of the United States, for the payment made, we bind ourselves, and successors, jointly presents of which sum well and truly to be our heirs, executors, administrators and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered into a certain contract with the Owner, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_ , a copy of which is hereto attached and made a part hereof for the construction of:

TOWN OF MONTVILLE

ANIMAL CONTROL FACILITY GENERATOR

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the Owner, with or without notice to the Surety, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in six (6) counterparts, each one of which shall be deemed an original, this the\_\_ day of\_\_\_\_\_, 20\_.

ATTEST:

\_\_\_\_\_  
(Principal) Secretary  
(SEAL)

\_\_\_\_\_  
Principal  
By \_\_\_\_\_ (s)

\_\_\_\_\_  
(Address-Zip Code)

\_\_\_\_\_  
Witness as to Principal

\_\_\_\_\_  
(Address-Zip Code)

\_\_\_\_\_  
Surety

ATTEST:

\_\_\_\_\_  
(Surety) Secretary  
(SEAL)

By \_\_\_\_\_  
Attorney-in-Fact

\_\_\_\_\_  
Witness as to Surety

\_\_\_\_\_  
(Address-Zip Code)

\_\_\_\_\_  
(Address-Zip Code)

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is Partnership, all partners should execute bond.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder of the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work of to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor

## **V. GENERAL CONDITIONS**





## ARTICLE 1 CONTRACT AND CONTRACT DOCUMENTS

The drawings, plans, specifications, addenda, Special Conditions, the Advertisement for Bid, the Information for Bidders, and the Bid Proposal as accepted by the OWNER, shall be binding upon the parties to this Agreement as if fully set forth therein. Whenever the term Contract Documents is used it shall mean and include the drawings, specifications and addenda. The OWNER shall interpret his own requirements. In case of conflict or inconsistency between the provisions of the signed portions of the Contract Documents and those of the specifications, the provisions of the signed portions shall govern.

## ARTICLE 2 DEFINITIONS

The following terms as used in this contract are defined as follows:

- A. Owner - The Owner of the project is the **Town of Montville**.
- B. Contractor - The term "Contractor" as hereinafter used shall refer to the General Contractor for this job.
- C. Owner's Representative - The term "Owner's Representative" as hereinafter used shall refer to any engineer or inspector whom the Owner may designate to inspect, test or oversee the work herein specified.
- D. Contract - Wherever the term "contract" is used in the General Conditions, it shall mean the actual bid form, specifications, Plans, General Conditions, Special Conditions and formal purchase order issued to successful bidder.

The rights and obligations of the CONTRACTOR under this contract shall include, but not be limited to the following:

## ARTICLE 3 REPRESENTATIONS OF THE CONTRACTOR

The Contractor represents and warrants:

- a. That he is financially solvent and that he is experienced and competent to perform the type of work required under this contract and that he is able to furnish the plant, materials, supplies, or equipment that may be necessary to perform the work as specified.
- b. That he is familiar with all Federal, State and municipal laws, ordinances, orders, and regulations which may in any way effect the project work, or the employment of persons thereon, including but not limited to any special acts relating to the work or to the project of which it is a part.
- c. That such temporary and permanent work required by the contract documents to be done by him will be satisfactorily constructed and can be used for the purpose for which it was intended and that such construction will not injure any person or damage property.
- d. That he has carefully examined the drawings, specifications, and addenda, if any, and the site of the work and that from his own investigations, he has satisfied himself as to the nature and location of the work, the character of equipment and other facilities needed for the performance of the work, the general and local conditions, and all other items that may effect the work.
- e. That he is aware of the hazards involved in the work and the danger to life and property both evident and inherent and that he will conduct the work in a careful and safe manner without-injury to persons or property.

#### ARTICLE 4 CONTRACT SECURITY

The Contractor shall furnish a Performance Bond and Payment Bond in amounts equal to at least one hundred percent (100%) of the contract price as security for the faithful performance of the Contract, and for the payment of all persons performing labor on the project under this contract and furnishing materials, equipment and all other incidentals in connection with this contract. The Surety on such a bond shall be from securities listed on the most recent IRS Circular 570, satisfactory to the Owner and the cost of the same shall be paid by the Contractor. Prior to the starting of any work, the bonds must be approved by the Owner and be in the Owner's hands. The bonds must be from a surety company licensed and approved to do business in the State of Connecticut.

#### ARTICLE 5 CONTRACTOR'S OBLIGATIONS

The Contractor shall perform all work in a good workmanlike manner, and in accordance with the plans and specifications and any supplements thereto, and according to any directions or orders given by the Owner unless otherwise stipulated. He shall furnish all supplies, materials, except those supplies and materials furnished by the Owner, facilities, equipment, tools and anything else necessary or proper to perform and complete the work required by this contract. He shall furnish, erect, maintain, and remove any construction plant or temporary work as may be required. He alone shall be responsible for the safety, efficiency-, and adequacy of his plant, appliances, and methods and for any damage which may result from their failure or their improper construction maintenance, or operation. The Contractor shall observe, comply with, and be subject to all terms, conditions, requirements, and limitations of the contract and specifications and shall do, carry on, and complete the entire work to the satisfaction of the Owner.

The Contractor shall be solely responsible for all the work and shall provide all precautionary measures necessary for preventing injury to persons or damage to property. All injury or damage of whatever nature resulting from the work or resulting to persons, property, or the work during its progress, from whatever cause, shall be the responsibility of the Contractor.

The Contractor shall hold the Owner and Engineer, or their duly authorized agents, harmless and defend and indemnify them against damages or claims for damages due to injuries to persons or property arising out of the execution of the project work, and for damages to materials furnished for the work, for infringement of inventions, patents, and patent rights used in doing the work, and for any act, omission, or instance of neglect by the Contractor, his agents, employees, or subcontractors.

The Contractor shall bear all losses resulting to him, including but not limited to losses sustained on account of the character, quality, or quantity of any part of the work, or all parts of the work, or because the nature of the conditions in or on the project site are different from what was estimated or indicted, or on account of the weather, elements, or other causes.

#### ARTICLE 6 SUPERINTENDENCE BY THE CONTRACTOR

The Contractor shall give the work the constant attention necessary to facilitate the progress thereof and shall cooperate with the Owner in every possible way.

At the site of the work, the Contractor shall, at all times, employ a suitably experienced construction superintendent who shall have full authority to act for the Contractor. It is understood that the employment of such representative shall be acceptable to the Owner and shall be such a person as can be continued in the capacity for the duration of the contract, unless he ceases to be on the Contractor's payroll.

#### ARTICLE 7 CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES

Within five (5) days after the date of "Notice to Proceed" the Contractor shall deliver to the Owner an estimated construction progress schedule in a form satisfactory to the Owner, showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the contract documents and the anticipated amount of each monthly payment that will become due the Contractor in accordance with the progress schedule. The

Contractor shall also furnish the Owner: 1. a detailed estimate, giving a complete breakdown of the contract price; and 2. periodic itemized estimates of the work done for the purpose of making partial payments thereon.

#### ARTICLE 8 USE OF PREMISES AND REMOVAL OF DEBRIS

The Contractor undertakes, at his own expense:

- a. To take every precaution against injuries to persons or damage to property.
- b. To store his apparatus, materials, equipment, and supplies in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or any others.
- c. To place upon the work or any part thereof, only such loads as are consistent with the safety of that portion of the work.
- d. To clean frequently all refuse, scrap, and debris caused by his operations, and to dispose of same away from the site, so that the work site is maintained in a neat, workmanlike appearance.
- e. To effect all cutting, fitting, or patching of his work required to make the same conform to the drawings and specifications, and except with the consent of the Owner, not to cut or otherwise alter the work of any other contractor.
- f. Before final payment, to remove all surplus materials false work, temporary structures, including foundations thereof, plants of any description, and debris of any nature resulting from his operations and to dispose of same away from the site, so that the site is left in a neat, orderly, and workmanlike condition.

#### ARTICLE 9 GENERAL WARRANTY

Neither the final certificate of payment nor any provision in the contract documents nor partial or entire occupancy of the premises by the Owner shall constitute an acceptance of work not done in accordance with the contract documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty workmanship or materials.

The Contractor shall remedy any defects in the work and pay for any damage to other work resulting therefrom, which shall appear within a period of one year (1) from the date of final acceptance of the work, unless a longer period is specified by the Owner. The Owner will give final notice of observed defects with reasonable promptness.

#### ARTICLE 10 PROTECTION OF WORK AND PROPERTY - EMERGENCY

- a. The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this contract. He shall at all times safely guard and protect his own work, and that of adjacent property, from damage. The Contractor shall replace or make good any such damage, loss, or injury at no additional expense to the Owner.
- b. In case of an emergency which threatens loss or injury of property, and/or safety of life the Contractor will be allowed to act, without previous instructions from the Owner, in a diligent manner. He shall notify the Owner immediately thereafter. Any claim for compensation by the Contractor due to such extra work shall be promptly submitted to the Owner for approval.
- c. Where the Contractor has not taken action but has notified the Owner of an emergency threatening injury to persons or damage to the work or to any adjoining property, he shall act as instructed or authorized by the Owner.

- d. The amount of reimbursement claimed by the Contractor on account of any emergency action shall be determined in the manner provided elsewhere in the contract documents.

#### ARTICLE 11 WEATHER CONDITIONS

In the event of temporary suspension of the work or during inclement weather, or whenever the Owner shall direct, the Contractor shall, and shall cause his subcontractors to protect carefully his and their work and materials against damage or injury from the weather. If, in the opinion of the Owner, any work or materials are damaged or injured by reason of failure to protect them on the part of the Contractor, or any of his subcontractors, or otherwise damaged or injured by the Contractor's negligence, or are found to be defective, such materials or work shall be removed and replaced at the expense of the Contractor.

#### ARTICLE 12 THE OWNER'S AUTHORITY

The Owner shall give all orders and directions contemplated under this contract and specifications relative to the execution of the work. The Owner shall determine the amount, quality, acceptability, and fitness of the several kinds of work and materials which are to be paid for under this contract and shall decide all questions which may arise in relation to said work and the construction thereof. The Owner's estimates and decisions shall be final and conclusive, except as herein otherwise expressly provided. In case any question shall arise between the parties hereto relative to said contract or specifications, the determination or decision of the Owner shall be a condition precedent to the right of the Contractor to receive any money or payment for work under this contract affected by such questions. The Owner shall decide the meaning and intent of any portion of the specifications and of any plans or drawings where the same may be found to be obscure or be in dispute. Any differences or conflicts in regard to their work which may arise between the Contractor and other contractors performing work for the Owner, shall be adjusted and determined by the Owner.

#### ARTICLE 13 ALL WORK SUBJECT TO CONTROL BY THE OWNER

- a. In the performance of the work, the Contractor shall abide by all orders, directions, and requirements of the Owner, and shall perform all work to the satisfaction of the Owner, and at such times and places, by such methods, and in such manner and sequence as he may require. The Owner shall determine the amounts, quality, acceptability, and fitness of all parts of the work. The Owner shall interpret the drawings, specifications, contract documents, all other documents, and the extra work orders. The Owner shall also decide all other questions in connection with the work. The Contractor shall employ no plant, equipment, materials, methods or men to which the Owner objects and shall remove no plant, materials, or equipment or other facilities from the work site without the Owner's permission. Upon request the Owner will confirm in writing any oral order, direction, requirement, or determination.
- b. Inspectors shall be authorized to inspect all work done and materials furnished. Such inspection may extend to all parts of the work and to the preparation or manufacture of the materials to be used. The presence or absence of an inspector shall not relieve the Contractor from any requirements of the contract. In case of any dispute arising between the Contractor and the inspector as to materials furnished or the manner in which the work is being executed, the inspector shall have the authority to reject material or suspend work until the question has been decided by the Owner. The inspector shall not be authorized to revoke, alter, enlarge, relax, or release any requirement of these specifications, nor to approve or accept any portion of the work, nor to issue instructions contrary to the drawings and specifications. The inspector shall in no case act as foreman or perform other duties for the Contractor, or interfere with the management of the work by the latter. Any advice which the inspector may give the Contractor shall in no way be construed as binding the Owner, or the Engineers in any way, nor releasing the Contractor from the fulfillment of the terms of the contract.

#### ARTICLE 14 THE OWNER'S CONTROL NOT LIMITED

The enumeration in this contract of particular instances in which the opinion, judgment, discretion, or determination of the Owner shall control or in which work shall be performed to his satisfaction or subject to his approval or inspection, shall not imply that only matters similar to those enumerated shall be so governed and performed, but without exception all the work shall be so governed and performed.

#### ARTICLE 15 RIGHT OF THE OWNER TO TERMINATE THE CONTRACT

In the event that any of the provisions of this contract are violated by the Contractor, or any of his subcontractors, the Owner may serve written notice upon the Contractor and the Surety of its intention to terminate the contract, such notice to contain the reasons for such intention to terminate the contract. If within ten days (10) such violation or delay shall not cease and satisfactory arrangement of correction made, the contract shall, at the expiration of the ten days, cease and immediately serve notice thereof upon the Surety and the Contractor, and the Surety shall have the power to take over and perform the contract, provided, however, that if the Surety does not commence performing thereof within ten days (10) from the date of mailing to such Surety of Notice of termination, the Owner may take over the work and prosecute the same to completion by contract or force account at the expense of the Contractor, and the Contractor and his Surety shall be liable to the Owner for any excess cost occasioned the Owner thereby.

#### ARTICLE 16 INTERPRETATION OF THE DRAWINGS AND SPECIFICATIONS

Except for the Contractor's executed set, all drawings and specifications are the property of the Owner. The Owner will furnish the Contractor, without charge, three (3) sets of the drawings and specifications. Additional sets will be furnished upon request, at actual cost of reproduction. Such drawings and specifications are not to be used on other work and those sets in usable condition shall be returned to the Owner upon request at the completion or cessation of the work or termination of the contract.

The Contractor shall keep one (1) copy of the drawings and specifications at the work site at all times and shall give the Owner and their representatives access thereto. Anything on the drawings and not mentioned in the specifications, or anything in the specifications that is not shown on the drawings shall have the same force and effect as if mentioned in both. In case of conflict or inconsistency between the drawings and the specifications, the specifications shall take precedence. Any discrepancy in the figures and the drawings shall be immediately submitted to the Owner for decision and the decision of the Owner shall be final. In case of differences between small and large scale drawings, the larger scale drawings shall take precedence .

#### ARTICLE 17 INSPECTION

The authorized representatives and agents of the Owner shall be permitted to inspect all work materials, payrolls, records of personnel, invoices for materials, and other relevant data and records.

#### ARTICLE 18 REPORTS, RECORDS AND DATA

The Contractor and each of his subcontractors, shall submit to the Owner such schedules of quantities, and costs, progress schedules, payrolls, reports, estimates, records, and other data as the Owner may request concerning the work Performed or to be performed under this contract.

#### ARTICLE 19 RIGHTS-OF-WAY AND SUSPENSION OF WORK

Land and rights-of-way for the purpose of this contract shall be furnished by the Owner to the extent shown on the drawings; the Owner will use due diligence in acquiring said lands and rights-of-way as speedily as possible.

If however, lands or rights-of-way cannot be obtained before work on the project begins, the Contractor shall begin his work upon such land or rights-of-way as have been previously acquired by the Owner, and no claims for damages whatsoever will be allowed by reason of the delay in obtaining the remaining land and rights-of-way. Should

the Owner be prevented or enjoined from proceeding with the work, or from authorizing its prosecution, either before or after the commencement by reason of litigation, or by reason of its inability to procure the lands or rights-of-way for the said work, the Contractor shall not be entitled to make or assert a claim for damages by reason of the said delay, or to withdraw from the contract except by consent of the Owner. Time for completion of work will be extended to such time as the Owner determines will compensate for the time lost by such delay, such determination to be set forth in writing.

#### ARTICLE 20 SUBCONTRACTORS

The Contractors may utilize the services of specialty subcontractors on those parts of the work which, under normal contracting practices, are performed by specialty subcontractors.

The Contractor shall not award work to any subcontractor other than those listed in his bid, without the prior written approval of the Owner, which approval will not be given until the Contractor submits a written statement concerning the proposed award to the subcontractor, which statement shall contain such information as the Owner may require.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work, to bind the subcontractors to the contract documents insofar as applicable to the subcontract work and to give the Contractor under any provisions of the contract documents.

Nothing contained in this contract shall create any contractual relationship between the Owner and any subcontractor.

#### ARTICLE 21 ASSIGNMENTS

The Contractor shall not assign the whole or any part of this contract or any monies due or to become due hereunder without the written consent of the Owner. In case the Contractor assigns all or part of any monies due or to become due under this contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due or to become due to the Contractor shall be subject to prior claims of all persons, firms, or corporations for services rendered or materials supplied for the performance of the work called for in this contract.

#### ARTICLE 22 MUTUAL RESPONSIBILITY OF CONTRACTORS

If, through acts of neglect on the part of the Contractor, any other contractor or any subcontractor shall suffer loss or damage to the work, the Contractor agrees to settle with such other contractor or subcontractor by agreement or arbitration. If such other contractor or subcontractor shall assert any claim against the Owner on account of any damage alleged to have been sustained, the Owner shall notify the Contractor who shall indemnify and save harmless the Owner against any such claim.

#### ARTICLE 23 SEPARATE CONTRACTS

The Owner reserves the right to let other contracts in connection with the construction of the contemplated work of the project, or contiguous projects of the Owner. The Contractor, therefore, will afford to any such other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, will properly connect and coordinate his work with theirs, and will not commit or permit any act which will interfere with the performance of their work.

The Contractor shall coordinate his operations with those of other contractors. Cooperation will be required in the arrangement for storage of materials and in the detailed execution of the work. Failure by the Contractor to keep informed on the progress of the work, or failure to give notice of the lack of progress or defective workmanship by others, shall be construed as acceptance by him of the status of the work as being satisfactory for proper coordination with and performance of his own work.

#### ARTICLE 24 SAFETY AND HEALTH REGULATIONS

These contract documents, and the joint and several phases of construction hereby contemplated, are to be governed, at all times, by the applicable provisions of the Federal law(s) including but not limited to the following:

1. Williams-Steiger Occupational Safety and Health Act, 1970, Public Law 92-596;
2. Part 1910 of the Occupational Safety and Health Standards, Chapter XVII of Title 29, Code of Federal Regulations.
3. This project is subject to all of the Safety and Health Regulations (CFR 29, Part 1926 and all subsequent amendments) as promulgated by the U.S. Department of Labor on June 24, 1974.

In the event of any inconsistencies between the above laws and regulations and the provisions of these contract documents, the laws and regulations shall prevail.

#### ARTICLE 25 MATERIALS, SERVICES AND FACILITIES

It is understood that, except as otherwise specifically stated in the contract documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever, necessary to protect, execute, complete, and deliver the work within the specified time.

It is necessary for some work to be performed after regular hours, on Saturdays, Sundays, or legal holidays as designated by the Owner. Any work necessary to be performed after regular hours, on Saturdays, Sundays, or legal holidays shall be performed by the Contractor without additional expense to the Owner.

#### ARTICLE 26 CONTRACTOR'S TITLE TO MATERIALS

No material, supplies, or equipment for the work shall be purchased by the Contractor or any subcontractor, subject to any chattel mortgage or under a conditional sale or other agreement by which an interest therein or in any part thereof is retained by the seller or supplier. The Contractor warrants good title to all material, supplies, and equipment installed or incorporated in the work and further warrants upon completion of all work, to deliver the premises, together with all improvements and appurtenances constructed or placed thereon by him, to the Owner free from any claims, liens, or charges, or encumbrances and further agrees that neither he nor any person, firm, or corporation furnishing any material or labor for any work covered by this contract shall have the right to a lien upon the premises or any improvement or appurtenance thereon.

#### ARTICLE 27 INSPECTION AND TESTING OF MATERIALS

All materials and equipment used in the construction of the project shall be new and of current manufacture. Testing will be done in accordance with accepted standards and as directed by the Owner; the laboratory or inspection agency shall be selected by the Owner. Except as specified elsewhere in these specifications, the Owner will pay for laboratory inspection.

All materials and workmanship shall be subject to inspection, examination, and testing by the Owner at any and all times during manufacture and/or construction and at any and all places where such manufacture and or construction is carried on, to establish conformance with these specifications and suitability for uses intended. Without additional charge the Contractor shall furnish promptly all reasonable facilities, labor, and materials necessary to make tests so required safe and convenient; he shall also furnish any mill, factory, or other such tests based on the Standards and Tentative Standards of the American Society for Testing Materials as required by the Owner.

## ARTICLE 28 CONTRACTOR'S BOND AND INSURANCE

Each Bidder must be able to enter into contract, covering the work, within 10 days from the acceptance of his proposal.

The successful bidder must, within 10 days from the date of acceptance of his proposal, furnish and file with the Owner, a corporate performance bond and payment bond or equivalent security, guaranteeing, completion of the job in accordance with the proposal. This bond or equivalent security shall be for 100% of the amount of the contract. The cost of a bond is to be figured as part of the cost of the job. The Surety Company must be one licensed to do business in the State of Connecticut, from securities listed on the most recent IRS Circular 570 and must be satisfactory to the Owner.

The successful bidder must, within 10 days from the date of acceptance of his proposal, file with the Owner, Workmen's Compensation, Comprehensive General Liability, Comprehensive Auto Liability, Certificates of Insurance satisfactory to the Owner, in compliance with the law, and in the following form and amount:

### Project Insurance Requirements

Contractor/Vendor will agree to maintain in force at all times during which work/services are to be performed, the following minimum limits of insurance coverage. The insurance company(ies) must be licensed with the State of Connecticut and have a Financial Strength Rating of "A-" or higher and a Financial Size Rating of VIII or higher from A.M. Best Company. The limits of liability for insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations.

CLA Engineers, Inc. and the Town of Montville shall be listed as additional insured as outlined in the following requirements.

If subcontractors are employed, same limits as named above shall apply and the certificate of insurance must be filed with the Owner.

Contractors shall observe and comply with all Federal, State and local laws, ordinances and regulations. Contractors shall indemnify and save harmless the Town, all of its officers, agents and servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation or negligence whether by the bidder, his employees, his consultant and/or their employees.

### Insurance Requirements

Contractor shall agree to maintain in force at all times during the contract the following minimum coverages and shall name Town of Montville as an Additional Insured on a primary and non-contributory basis to all policies, except Workers Compensation. All policies should also include a Waiver of Subrogation.

Insurance shall be written with Carriers approved in the State of Connecticut and with a minimum AM Best's Rating of "A-" VIII. In addition, all Carriers are subject to approval by Town of Montville .

|                                      |                                         | (Minimum Limits) |
|--------------------------------------|-----------------------------------------|------------------|
| General Liability                    | Each Occurrence                         | \$1,000,000      |
|                                      | General Aggregate                       | \$2,000,000      |
|                                      | Products/Completed Operations Aggregate | \$2,000,000      |
| Auto (Any Auto Incl Hired/Non-Owned) | Combined Single Limit                   | \$1,000,000      |



|                        |                 |             |
|------------------------|-----------------|-------------|
| Excess Liability       | Each Occurrence | \$1,000,000 |
|                        | Aggregate       | \$1,000,000 |
| Professional Liability | Each Claim      | \$1,000,000 |
|                        | Aggregate       | \$1,000,000 |

If any policy is written on a "Claims Made" basis, the policy must be continually renewed for a minimum of two (2) years from the completion date of this contract. If the policy is replaced and/or the retroactive date is changed, then the expiring policy must be endorsed to extend the reporting period for claims for the policy in effect during the contract for two (2) years from the completion date.

|                                                   |                          |             |
|---------------------------------------------------|--------------------------|-------------|
| Workers' Compensation and<br>Employers' Liability | WC Statutory Limits      |             |
|                                                   | EL Each Accident         | \$1,000,000 |
|                                                   | EL Disease Each Employee | \$1,000,000 |
|                                                   | EL Disease Policy Limit  | \$1,000,000 |

Original, completed Certificates of Insurance must be presented to Town of Montville & Montville Board of Education prior to contract issuance. Contractor agrees to provide replacement/renewal certificates at least 60 days prior to the expiration date of the policies. Should any of the above-described policies be cancelled, limits reduced, or coverage altered, 60 days written notice must be given to Town of Montville.

No contract shall be binding upon the Owner until such bond shall have been given and until Comprehensive General Liability, Comprehensive General Auto Liability and Workmen's Compensation policy certificates indicated-above have been filed with the Owner and approved as to form and sufficiency by the Owner. The insurance policy certificate provided by the successful bidder and all subcontractors shall carry a statement by the insurance company that the Owner will receive at least ten (10) days notice prior to cancellation of any portion of the policies or any modifications in the insurance coverage that may affect the Owner's interest. The cost of all insurance coverage shall be included in the price of the contract cost.

The insurance company must be licensed to do business in the State of Connecticut and must be satisfactory to the Owner. THE OWNER MUST BE NAMED AS ADDITIONAL INSURED.

#### ARTICLE 29 REPRESENTATIONS OF CONTRACTOR

The Contractor represents and warrants that he is financially solvent and that he is experienced and competent to perform the type of work outlined in the specifications and drawings and that he has carefully examined the drawings and specifications along with addendum (or addenda), if any, and the site of the work, and that from his own investigations, he has satisfied himself as to the nature and location of the work, the character, quality and quantity of surface and sub-surface materials likely to be encountered, the character of equipment and other facilities needed for the performance of the work, the general and local conditions and all other materials which may in any way affect the work or its performance and that he is aware of the hazards involved in the work and the danger to life and property both evident and inherent and that he will conduct the work in a careful and safe manner without injury to persons or property. He further warrants that any injury to persons or property resulting from the work shall be the sole responsibility of the Contractor.

#### ARTICLE 30 INDEMNITY OF OWNER BY CONTRACTOR

The Contractor shall indemnify and save harmless the Owner against any and all damages to property or injuries to or death of any person or persons, including property and employees or agents of the Owner, and shall defend, indemnify and save harmless the Owner from any and all claims, demands, suits, actions or proceedings of any kind or nature including workmen's compensation claims, of or by anyone whomsoever, in any way resulting from or arising out of the operations in connection herewith, including operations of subcontractors and acts or omissions of employees or agents of Contractor or his subcontractors. Insurance coverage specified herein and in any special conditions constitutes the minimum requirements and said requirements shall in no way lessen or limit the liability of Contractor under the terms of the contract. The Contractor shall procure and maintain, at his own cost and expense, any additional kinds and amounts of insurance which, in his own judgment, may be necessary for his proper protection in the prosecution of the work. The Contractor agrees to well and truly save and indemnify and keep harmless, the Owner against all liability, judgments, costs and expenses which may in any wise come against the Owner or which may in any wise result from carelessness, omission or neglect of the Contractor or his agents, employees or workmen in any way arising or resulting from the operation in connection herewith, including all liability to the Owner resulting from the failure to erect or maintain sufficient railing or fence as required by Section 13a111, Connecticut General Statutes, and against all liability from defects claimed to be in violation of Section 13a-149, Connecticut General Statutes. Any additional cost of this save harmless insurance coverage shall be included in the price of the contract.

#### ARTICLE 31 TERMINATION FOR CONVENIENCE

The Owner hereby reserves the right to terminate the performance of this contract for any reason the Owner deems appropriate. The Owner will pay all actual costs to date of termination, however, the Contractor shall not be entitled to any profit on furnished or unearned work.

#### ARTICLE 32 COMPETENT HELP TO BE EMPLOYED

The Contractor shall employ experienced foreman, craftsmen and other workmen competent in the work in which they are to be engaged. All work shall be accomplished by able, skilled and competent personnel. If any person employed on the work by the Contractor shall appear to be incompetent or unreliable in any way, he shall be discharged immediately upon the request of the Owner and shall not -again be employed on the work.

#### ARTICLE 33 SPIRITUOUS LIQUORS AND DRUGS

The Contractor shall neither permit nor suffer the introduction or use of -spirituous liquors upon the work embraced in this contract. Dope or drugs of any kind unless ordered by a physician are prohibited. Any employee found using spirituous liquors, dope or drugs of any kind unless ordered by a physician shall be immediately discharged.

#### ARTICLE 34 PROHIBITING EMPLOYEE DISCRIMINATION BY CONTRACTOR

The Contractor agrees and warrants that in the performance of this contract he will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religion, national origin, sex, or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved in any manner prohibited by the laws of the United States or of the State of Connecticut, and further agrees to provide the commission on human rights and opportunities with such information requested by the commission concerning the employment practices and procedures of the Contractor as relate to the provisions of this section.

#### ARTICLE 35 CLAIMS FOR EXTRA WORK

After the contract has been signed, no claims for extra work will be honored. unless authorized in writing by the Owner.

## ARTICLE 36 WORK CHANGES

The Owner may make changes in the scope of the work required to be performed by the Contractor under the Contract by making additions thereto, or by omitting work therefrom, without invalidating the Contract, and without relieving or releasing the Contractor from any of his obligations under the Contract or any guarantee given by him pursuant to the Contract provisions, and without affecting the validity of the guaranty bonds, and without relieving or releasing the surety or sureties of said bonds. All such work shall be executed under the terms of the original Contract unless it is expressly provided otherwise.

Except for the purpose of affording protection against any emergency endangering life or property, the Contractor shall make no change in the materials used or in the specified manner of constructing and/or installing the improvements or supply additional labor, services or materials beyond that actually required for the execution of the Contract, unless in pursuance of a written order from the owner authorizing the Contractor to proceed with the change. No claim for an adjustment of the Contract price will be valid unless so ordered. Upon request the Contractor shall supply the Owner with a detailed proposal for the changes showing quantities of, and unit prices for his work and that of any subcontractor involved. No such change order shall be considered, however, unless approved by the Owner and their duly authorized representatives prior to its issuance. Upon receipt of the written order the Contractor shall proceed with the work as and when directed. The amount of compensation to be paid to the Contractor for extra or additional work so ordered shall be determined as follows:

- (1) By such applicable Unit Price, if any, as set forth in the Agreement, or
- (2) If no such Unit Prices are so set forth, or if the total net change increases or decreases the total Contract price more than 25 percent (25%) then by a Lump Sum mutually agreed upon by the Owner and the Contractor, and establish as follows:

For work to be performed under a Lump Sum agreement the Contractor may apply a 15% allowance for overhead and profit against the net cost of work actually to be performed by him except that in the event the change in work to be performed by him results in a net omission then no percentage for overhead and profit shall be allowed.

The Contractor is permitted a 5% allowance to be applied against the net cost to a subcontractor for work actually performed by the subcontractor, but on any change involving more than one subcontractor, their net costs and/or net omission shall be combined as one before consideration is given to the application of the 5% for the Contractor's overhead and profit, and, in the event the Contractor shows a net omission for the changes as it affects the work actually to be performed by him, he is permitted only the 5% applied to the amount (if any) by which the net cost to the subcontractor exceeds the net omission by the Contractor.

For work to be performed by a subcontractor the cost to the Owner may include the net cost to the subcontractor plus an allowance of an amount not to exceed 15% of the net cost for the subcontractor's overhead and profit, except that in the event that the change in work results in a net omission for the subcontractor there shall be no application of the 15% overhead and profit.

Net cost to the Contractor and/or subcontractor shall be that defined in sub-section (3) of this article, but in every case taxes imposed by law upon labor employed at the site shall be excluded; and all credits (which in the case of the Contractor shall include net omissions by the subcontractor) shall be deducted before the percentage can be applied.

For the purposes of applying the provisions of the article, the Owner will not recognize other than a direct subcontractor of the Contractor nor permit the aggregate allowance to exceed 20% as applied above, to the net cost of work performed by any subcontractor.

- (3) If no such unit prices are set forth and if the parties cannot agree upon a lump sum, then the Owner may at his option either: 1) order the work to be done and compensated for in the following manner: by the actual net cost in money to the Contractor of the materials, the wages of applied labor, insurance, taxes imposed by law on labor employed on the work, plus such rental for equipment (other than tools)

required and approved for such additional work. After excluding taxes imposed by law upon labor employed on the work, the Contractor shall receive 15% of the actual net cost outlined above as compensation for all other items of profit and costs or expenses including administration, overhead, superintendent, materials used in temporary structures, allowances (including provision for overhead and profit) made by the Contractor to subcontractors, additional premiums upon performance bond of the Contractor and the use of small tools; or (2) the Owner may order that item or portion of work omitted without invalidating any of the terms thereof, and there shall be deducted from the contract price the value as estimated by the Engineer of the labor and material omitted from the contract, if any be omitted.

#### ARTICLE 37 OWNER'S RIGHT TO DO WORK

If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this contract, the Owner, after five (5) days written notice to the Contractor may, without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost thereof from the payment, then or thereafter due the Contractor.

#### ARTICLE 38 PAYMENTS

Payment for the work will be made when the work outlined in the specifications is completed or in accordance with the terms stated herein. Invoices shall be prepared in prescribed form by the Contractor and shall be submitted to the Owner's Superintendent in triplicate for checking and certifications.

No payment or compensation of any kind shall be made to the Contractor for damages because of hindrance or delay from any cause in the progress of work. whether such hindrance or delays be avoidable or unavoidable.

#### ARTICLE 39 PAYMENT TO SUB-CONTRACTOR

The Owner assumes no obligation to pay to or to see to the payment of any sum to any sub-contractor.

#### ARTICLE 40 WORK IN INCLEMENT WEATHER

The Owner or the Owner's Superintendent will determine when conditions are unfavorable for work and may order the work or any portion of it suspended whenever, in his opinion the conditions are not such as will insure first class work. In general, work shall be prosecuted throughout the year and the Contractor will be expected to keep work going and employment of labor as continuous as possible. However, the Contractor shall, and shall cause his subcontractors to protect carefully his and their work against damage or injury from the weather. If this is not done to the Owner's satisfaction and any damage to the work occurs, the work shall be removed and replaced at the expense of the Contractor.

#### ARTICLE 41 POWER AND WATER

Should the Contractor require electric power and/or water, he shall make necessary arrangements with the Owner for securing it and bear any expense involved, unless expressly provided for otherwise in the specifications.

#### ARTICLE 42 TOILET ACCOMMODATIONS

The Contractor shall provide necessary sanitary toilet accommodations for the workmen.

#### ARTICLE 43 LIENS

The final payment for the work will not be made until the Owner is satisfied that no liens have, or can be placed for material or labor on this work. If required by the Owner, waivers of liens may be required. If the Contractor, or any subcontractor refuses to furnish a release or waiver of liens, they may furnish a bond satisfactory to the Owner to indemnify the Owner against any liens.

#### ARTICLE 44 PROGRESS PAYMENTS

The CONTRACTOR may submit periodically, but not more than once each month, a Request for Payment for work done. The CONTRACTOR shall furnish the OWNER all reasonable facilities required for obtaining the necessary information relative to the progress and execution of the work.

Within fifteen (15) days of submission of any Request for Payment by the CONTRACTOR, the OWNER shall:

- a. Approve the Request for Payment as submitted, or
- b. Approve such other amount as he shall decide is due the CONTRACTOR, informing and CONTRACTOR in writing of his reasons for approving the amended amount, or
- c. Withhold the Request for Payment, informing the CONTRACTOR in writing of his reasons for withholding it.

Within thirty (30) days from the date of approval of the Request for Payment the OWNER will:

- a. Pay the Request for Payment as approved less a five percent (5%) retainage, until substantial completion of the project, at which time the retainage will be reduced to two percent (2%) until final completion.
- b. Withhold payment in whole or in part on an approved Request for Payment to the extent necessary to protect himself from loss on account of any of the following causes discovered provided he informs the CONTRACTOR in writing of his reasons for withholding payment in whole or in part:
  1. Defective work.
  2. Evidence indicating the probable filing of claims by other parties against the CONTRACTOR.
  3. Failure of the CONTRACTOR to make payments to Subcontractors, material suppliers or labor.
  4. Damage to another Contractor.

#### ARTICLE 45 GENERAL GUARANTEE

The Contractor shall guarantee his work for a period of one (1) year after the date of the Owner's Superintendent's final inspection and acceptance as evidenced by final payment. he shall during that period repair promptly, at his own cost and expense all breaks, failures or defects which develop in his work as a result of faulty material or workmanship. The performance bond shall remain in effect through the guarantee period.

#### ARTICLE 46 FINAL INSPECTION AND ACCEPTANCE

Upon receipt of written notice from the Contractor that his work is complete, the Owner's Superintendent will make a final inspection and will notify the Contractor of all instances in which the work fails to comply with the specifications as well as any defects which he may discover. The Contractor shall thereupon immediately rebuild, alter and restore the work so that it will comply with the specifications and he shall remedy any defects at his own cost and expense and to the satisfaction of the Owner's Superintendent. Upon the completion of such alterations or repairs the Owner's Superintendent will issue his certificate of final acceptance of work. The issuance of such certificate of final acceptance by the Owner's Superintendent shall not prevent the Owner from recovering damages at any subsequent time for work found to be actually defective.

ARTICLE 47 FINAL PAYMENT

The acceptance by the Contractor of payment for the final invoice, made after the Owner's Superintendent's certification of final acceptance as provided for in these General Conditions, shall release the Owner and every agent of the Owner from all further claims or liabilities to the Contractor of whatever nature, except for the remaining sum or sums of money withheld under the provisions of the contract.

ARTICLE 48 CORRECTION OF FAULTY WORK AFTER FINAL PAYMENT

The approval of the final Request for Payment by the Owner and the making of the final payment by the Owner to the Contractor shall NOT relieve and Contractor of the responsibility for faulty materials or workmanship. The Owner shall promptly give notice to faulty materials or workmanship and the Contractor shall promptly replace any such defects discovered within two years from the date of written acceptance of the work. The Owner shall decide all questions arising under this paragraph.

ARTICLE 49 USE OF "HE", "HIS" OR "HIM"

Whenever in these specifications the masculine words, "he", "his", or "him" are used pertaining to the Contractor, Owner, Engineer or any other entity or person it shall be for brevity, and in no way is any sexual discrimination intended.

ARTICLE 50 LICENSING

All work shall be performed by an Electrician licensed to perform work in the State of Connecticut.

## **VI.**

## **SPECIAL CONDITIONS**





#### ARTICLE 1 GENERAL

- (a) The Owner and the Contractor agree that the following special conditions shall apply to the work to be performed under this Contract and that such provisions shall supersede any conflicting provisions of this Contract.
- (b) The rights and remedies of the Owner provided for in these clauses are in addition to any other rights and remedies provided by law and under this Contract.

#### ARTICLE 2 CONTRACTOR TO CHECK DIMENSIONS AND SCHEDULES

The Contractor will be required to check all dimensions and quantities shown on the drawings or schedules given to him by the Owner, and shall notify the Owner of all errors therein which he may discover by examining and checking the same. The Contractor shall not take advantage of any error or omissions in these specifications, drawings, or schedules. The Owner will furnish all instructions should such error or omissions be discovered, and the Contractor shall carry out such instructions as if originally specified.

#### ARTICLE 3 PROTECTION OF TREES

The Contractor shall take special care to preserve and protect from injury all trees located along the lines of construction, and no such trees shall be cut down, trimmed, or otherwise cut without permission from the Owner.

#### ARTICLE 4 SEQUENCE OF THE WORK

The Contractor shall be required to prosecute his work in accordance with a schedule prepared by him in advance, in accordance with additional requirements specified herein and approved by the Owner. This scheduling shall state the methods and shall forecast the times of doing each portion of the work. Before beginning any portion of the work, the Contractor shall give the Owner advance notice and ample time for making necessary preparation.

#### ARTICLE 5 STREETS AND SIDEWALKS TO BE KEPT OPEN

The Contractor shall at all times keep the streets and highways in which he may be working open for pedestrian and vehicular traffic. If in the opinion of the Owner, the interest of abutters and the public requires it, the Contractor shall bridge or construct planking across trenches at street crossings and roads or private ways. The Contractor shall conduct his work in such a manner as the Owner may direct from time to time. No sidewalk shall be obstructed where it is possible to avoid it.

The Contractor shall provide all necessary fire crossings at principal intersections or ways usually traveled by fire apparatus with provisions for the apparatus so it can travel along the line of the pipe installations.

#### ARTICLE 6 LIGHTS, BARRIERS, WATCHMEN, AND INDEMNITY

The Contractor shall erect and maintain such barriers, lighting, warning lights, danger warning signals, and signs that will prevent accidents during the construction work and protect the work and insure the safety of personnel and the public at all times and places; the Contractor shall indemnify and protect the Owner and the Engineer in every respect from injury or damage whatsoever caused by any act of neglect by the contractor or his subcontractors, or their servants or agents, including any claims arising out of failure to erect and maintain sufficient railing or fence as required by Section 13A-111 Connecticut General Statutes from claims or defect in violation of 12A-14q Connecticut General Statutes.

The fact that the Department of Public Works may retain control of the premises, or that it or its agents may take action to erect or maintain railings or fences shall not relieve the Contractor's obligations hereunder.

In addition to the above, when and as necessary, or when required by the Owner, the Contractor shall post sign and employ watchmen or flagmen for the direction of traffic at the site and for excluding at all times unauthorized persons from the work site.

The Contractor shall be responsible for excluding at all times from the land within the easement areas, all persons not directly connected with the work.

#### ARTICLE 7 NIGHTWORK

Nightwork, or work on Saturdays, Sundays, or legal holidays requiring the presence of an engineer or inspector, will not be permitted except as designated by the Owner in case of an emergency. Should it be necessary for the Owner to operate an organization for continuous nightwork or for emergency nightwork, the lighting, safety and other facilities which are deemed necessary shall be provided by the Contractor. Compensation for this work shall be considered as having been included in the prices stipulated for the appropriate items of work as listed in the bid, and no extra compensation will be paid by the Owner.

#### ARTICLE 8 DIFFERING SITE CONDITIONS

- (a) The Contractor shall promptly and before such conditions are disturbed, notify the Owner in writing of:  
(1) sub-surface or latent physical conditions at the site differing materially from those indicated in this contract, or (2) unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in this contract. The Owner shall promptly investigate the conditions, and if he finds that such conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under this contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the contract modified in writing accordingly.
- (b) No claim of the Contractor under this clause shall be allowed unless the Contractor has given the notice required in (a) above; provided, however, the time prescribed therefore may be extended by the Owner.
- (c) No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this contract.

#### ARTICLE 9 DISPOSAL OF MATERIALS

The materials used in the construction of the work, shall be disposed away from the site in such manner so that will not endanger persons or the work, and so that free access may be had at any time to all hydrants and gates in the vicinity of the work. The materials shall be kept trimmed up so that as little inconvenience as possible to the public or adjoining tenants is caused.

#### ARTICLE 10 INTERFERENCE WITH EXISTING STRUCTURES

Whenever it may be necessary to cross or interfere with existing culverts, drains, sewers, water pipes, fixtures, guardrails, fences, gas pipes, or other structures needing special care, due notice shall be given to the Owner, and the work shall be done according to his directions. Whenever required, all-objects shall be strengthened to meet any additional stress that the work herein specified may impose upon it, and any damage caused shall be thoroughly repaired. If so directed by the Owner, the location of any existing structure shall be changed to meet the requirements of the new work.

The Contractor shall be responsible for all broken mains or utilities encountered during the progress of the work and shall repair and be responsible for correcting all damages to the Owner. The Contractor shall contact the proper utility or authority to correct or make any changes due to utilities or other obstructions during the Project but the entire responsibility and expense shall be with the Contractor.

All damaged items of work or items required to be removed and replaced due to construction shall be replaced or repaired by the Contractor to the complete satisfaction of the property Owner and/or the Owner, and at no additional expense to the Owner.

#### ARTICLE 11 FINISHING AND CLEANING UP

In completing his operations, the Contractor shall immediately remove all surplus material, tools, and other property belonging to him, leaving the entire street or surroundings free and clean and in good order, at no additional expense to the Owner. The Contractor shall exercise special care in keeping the rights-of-way and private lands upon which work is performed free and clean of all debris, and shall remove all tools and other property when they are not in use.

#### ARTICLE 12 CLEAN UP AT THE CONTRACTOR'S EXPENSE

In case the Contractor fails or neglects to promptly remove all surplus materials, tools, and incidentals after backfilling, leaving the street or surrounding area clean and free of debris, and do the required repaving when ordered, the Owner may, after 24 hours notice, cause the work to be done and the cost thereof deducted from any payment due to the Contractor.

#### ARTICLE 13 RIGHTS OF ACCESS

Nothing herein contained or shown on the drawings shall be construed as giving the Contractor exclusive occupancy of the work area. The Owner or any other contractors employed by him, the various utility companies, - contractors or subcontractors employed by State or Federal agencies, or any other agencies involved in the general- project or upon public rights-of-way, may enter upon or cross the area of work or occupy portions of the area as is directed or necessary. When the territory of one contract is the convenient means of access to the other, the Contractor shall arrange his work in such a manner as to permit such access to the other and prevent unnecessary delay to the work as a whole.

#### ARTICLE 14 EXISTING UTILITIES OR CONNECTIONS

The location of existing underground pipes, conduits, and structures as shown has been collected from the best available sources and the Owner together with his agents, does not imply or guarantee the data and information in connection with underground pipes, conduits, structures, and such other parts, as to their completeness, nor their locations as indicated. The contractor shall assume that there are existing water, gas, and other utility connections to each and every building enroute, whether they appear on the drawings or not. Any expense and/or delay occasioned by utilities and structures or damage thereto, including those not shown, shall be the responsibility of the Contractor, at no additional expense to the Owner.

Before proceeding with construction operations, the Contractor shall make such supplemental investigations, including exploratory excavations by hand digging, as he deems necessary to uncover and determine the exact locations of utilities and structures and shall have no claims for damages due to encountering subsurface structures or utilities in locations other than those shown on the drawings, or which are made known to the Contractor prior to construction operations. The Contractor shall be responsible and liable for all damages to existing utilities and structures.

#### ARTICLE 15 PLANK CROSSINGS

As required or directed by the Owner, the Contractor shall install in selected locations suitable plank crossings, substantially built and reinforced to sustain vehicular traffic across excavations. No separate payment will be made for this work, the cost of which shall be included in the prices stipulated for the appropriate items in the work as listed in the bid.

#### ARTICLE 16 CLEANING FINISHED WORK

After the work is completed, the pipes, manholes, and structures shall be carefully cleaned free of debris and dirt, broken masonry, and mortar, and left in first class condition, ready to use. All temporary or excess materials shall be disposed of off-site and the work left broom clean, to the satisfaction of the Owner.

#### ARTICLE 17 FIRE PREVENTION AND PROTECTION

All State and municipal rules and regulations with respect to fire prevention, fire-resistant construction, and fire protection shall be strictly adhered to and all work and facilities necessary therefor shall be provided and maintained by the Contractor in an approved manner.

All fire protection equipment such as water tanks, hoses, pumps, extinguishers, and other materials, and apparatus, shall be provided for the protection of the contract work, temporary work, and adjacent property. Trained personnel experienced in the operation of all fire protection equipment and apparatus shall be available on the site whenever work is in progress, and at such other times as may be necessary for the safety of the public and the work.

#### ARTICLE 18 WORK BY OTHERS

The Owner reserves the right to do any other work which may be connected with, or become a part of, or be adjacent to the work embraced by this contract, at any time, by contract or otherwise. The Contractor shall not interfere with the work of such others as the Owner may employ, and shall execute his own work in such a manner as to aid in the execution of the work of others as may be required. No backfilling of trenches or excavations will be permitted until such work by the Owner is completed.

#### ARTICLE 19 TEMPORARY POWER

The Contractor shall make all the necessary arrangements with the power company for providing temporary electric power for his use. All unauthorized sources of power, such as from neighboring homes, shall be prohibited.

#### ARTICLE 20 FAILURE TO REPAIR

Any emergency arising from the interruption of electric, gas, water, telephone, sewer and cable service due to the activities of the Contractor, shall be repaired by the Contractor as quickly as is possible.

If and when, in the opinion of the Owner, the Contractor is not initiating repair work as expeditiously as possible upon notification to do so, the Owner may, at his own option, make the necessary repairs using his own forces or those of others. The cost of such repairs shall be subtracted from the payments due to the Contractor.

#### ARTICLE 21 CONTRACTOR TO LAY OUT HIS OWN WORK

The Owner will establish such general reference points as in his judgment will enable the Contractor to proceed with the work. The Contractor, at his own expense, shall provide all materials and equipment and such qualified helpers as the Owner may require for setting the general reference points and shall protect and preserve all stakes, benches, and other markers used to identify the reference points. The Contractor shall lay out all the Contract work from the above and shall be responsible for the accuracy of all lines, grades, and measurements. He will be required to employ at no extra expense to the Owner, a Connecticut registered land surveyor or registered professional engineer who shall perform all layout work for the construction of the Contract work, including all lines, grades, and measurements.

#### ARTICLE 22 - COOPERATION WITH UTILITIES

The Contractor shall coordinate his operations with the Owners of all underground or overhead utility lines within the project area.

The Contractor shall be liable for all damages or claims received or sustained by any persons, corporations or property in consequence of damage to the existing utilities, their appurtenances, or other facilities caused directly or indirectly by the operations of the Contractor.

ARTICLE 22 - EMERGENCY TELEPHONE NUMBER

The CONTRACTOR is required to provide the OWNER with a telephone number which can be used during emergencies, 24 hours per day, seven days per week, to reach the CONTRACTOR.

## **VII. TECHNICAL SPECIFICATIONS**

SECTION 1.00  
GENERAL REQUIREMENTS

1.01 SUMMARY OF WORK

1.01.1 Description:

Work under this contract includes supplying all material, equipment and labor incidental thereto to perform the work outlined on the project plans and generally includes the following:

- A. Furnish and install the diesel standby generator as specified herein
- B. All costs for delivery, shipping, lifting, hoisting, rigging, etc. shall be included in the lump sum price bid.
- C. Coordinate, furnish, and install all conduit and/or wiring as needed for a fully functioning diesel standby generator.
- D. Perform startup testing and training for staff.
- E. Fuel tank shall be full of diesel fuel prior to final acceptance of the work.
- F. Restore all disturbed surfaces.

The contractor shall purchase, provide, and install all materials (temporary and permanent) and equipment necessary to complete the work specified in Contract Documents.

The entire work provided for in these technical specifications shall be constructed and finished in every respect in a good workmanlike and substantial manner. It is not intended that the specifications shall show every detail piece of material or equipment, but such parts and pieces as may be in accordance with the best practices and regulatory requirements, even though not shown, shall be furnished and installed. All materials and equipment shall be new unless specifically stated otherwise in these Contract Documents.

1.01.2 Location of Site:

The work site for this contract lies at the *Animal Control Facility (Under Construction)*, 225 Maple Avenue, Uncasville, Connecticut as shown on the Contract Drawings.

1.01.3 Work Sequence

Work shall be sequenced so as to allow for uninterrupted flow or use of existing utilities, unless otherwise depicted on the plans. The contractor shall conform to the sequences of work as outlined in the Specifications. Variations or modifications to the work sequences shall be submitted in writing to the Engineer prior to construction, for their approval.

The contractor shall coordinate work with Owner as outlined in the Construction Drawings and Specifications, where appropriate, or as required by the Owner.

All costs associated with sequencing of work and coordination shall be included in the bid prices for other items.

The Contractor shall submit a construction schedule and modify it from time to time as need arises. The Construction schedule shall be based on the specified completion time. The Construction Schedule shall show the order of work including such significant tasks as construction of lines, connections, backfill and compaction, leakage tests, temporary and permanent restoration. The Construction Schedule shall be submitted for the Owner's approval prior to start of Construction and updated at the time of submitting each request for progress payment.

#### 1.01.5 Project Coordination

The work included in these Contract Documents is to be performed under the responsibility of a single prime contract. The Contractor is responsible for the coordination of all the work, whether performed by its own personnel or its subcontractor, and will maintain such procedures as necessary to keep its workman and suppliers informed of project progress so as not to unnecessarily delay completion of the Work.

#### 1.01.6 Standard Specifications / Codes

The following codes and specifications shall apply and shall be considered a part of this specification as though it were bound herein.

- A. The Standard Specifications for Roads, Bridges, and Incidental Construction, Supplement Form 819, dated 2024 of the State of Connecticut, as specifically referenced to in the Technical Specifications.
- B. Connecticut Building and International Code  
(Latest Edition with Amendments and Revisions)
- C. National Electrical Code (NFPA 70)  
(Latest Edition with Amendments and Revisions)
- D. Connecticut Fire Safety Codes
  - NFPA 101 National Fire Safety Code
  - Amendments to the CT Fire Safety Code (Latest Edition)
  - CGS 29-317 Oil Burning & Equipment Code (Latest Edition)
  - CGS 29-329 Gas Equipment & Piping Code (Latest Edition)
- E. Connecticut Boiler Code



SECTION 1.02  
MOBILIZATION

1.0 DESCRIPTION

This section shall consist of all work associated with the mobilization and demobilization of the contractor's forces and equipment necessary for performing the work required under the contract. It does not include mobilization and demobilization for specific items of work for which payment is provided elsewhere in the contract.

This section shall also include costs for required bonds, insurances and other incidental preconstruction items associated with the startup and completion of the work.

Mobilization shall include the following:

- A. Costs for performance and payment bonds.
- B. Costs for insurances.
- C. Provide, maintain, and remove temporary sanitary facilities.
- D. Establishing and removing temporary staging areas, lay down areas, and offices if needed.
- E. Any and all startup costs, removal costs, transportations costs, or costs or fees associated with mobilizing equipment or personnel to the project site and off the project site at the completion of work.

4.0 MEASUREMENT AND PAYMENT

No separate measurement or payment shall be made for this item and all costs in connection there with shall be included in other contract items.

ENGINE GENERATORS

PART 1 - GENERAL

**1.1 SUMMARY**

- A. Provide labor, materials, services, equipment, and transportation necessary for complete and operational factory tested, paralleled electrical generation systems, 100 amps, 3 phase, 400 volt and specified herein and including, but not limited to the following:
  - 1. Battery charger.
  - 2. Engine-generator set.
  - 3. Paralleling capability.
  - 4. Enclosed muffler.
  - 5. Exhaust piping external to set.
  - 6. System controller.
  - 7. Outdoor enclosure.
  - 8. Remote annunciator.
  - 9. Remote stop switch.
  - 10. Starting battery.
  - 11. System commissioning.

**1.2 DEFINITIONS**

- A. Operational Bandwidth: The total variation from the lowest to highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.
- B. Steady-State Voltage Modulation: The uniform cyclical variation of voltage within the operational bandwidth, expressed in Hertz or cycles per second.

**1.3 SUBMITTALS**

- A. Product Data: Include the following:
    - 1. Data on features, components, accessories ratings and performance.
    - 2. Thermal damage curve for generators.
    - 3. Time-current characteristic curves for generator protective device.
    - 4. Certified generator sets fuel consumption curve.
    - 5. Evidence of UL2200 Listing.
    - 6. Evidence of EPA emissions certification for diesel gas configurations.
  - B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components and location and size of each field connection.
    - 1. Dimensioned outline plan and elevation drawings of engine-generator set and other components specified.
-

2. Design Calculations: Signed and sealed by a qualified professional engineer. Calculate requirements for selecting vibration isolators and seismic restraints and for designing vibration isolation bases.
  3. Vibration Isolation Base Details: Signed and sealed by a qualified professional engineer. Detail fabrication, including anchorages and attachments to structure and to supported equipment. Include base weights.
  4. Wiring Diagrams: Power, signal, and control wiring.
- C. Welding certificates.
- D. Manufacturer Seismic Qualification Certification: Submit certification that engine-generator set, batteries, battery racks, accessories, and components will withstand seismic forces Include the following:
1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
    - a. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."
  2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
  3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements
- E. Submit Qualification Data for testing agency, including a sample of a representative Field Quality Control Test Report.
- F. Certified summary of prototype-unit test report.
- G. Certified Test Reports: For components and accessories that are equivalent, but not identical, to those tested on prototype unit.
- H. Certified Summary of Performance Tests: Demonstrate compliance with specified requirement to meet performance criteria for sensitive loads.
- I. Test Reports:
1. Report of factory test on units to be shipped for this Project, showing evidence of compliance with specified requirements. Systems not tested in parallel at the factory will not be accepted.
  2. Report of sound generation.
  3. Report of exhaust emissions showing compliance with EPA and other applicable regulations.
  4. Report of UL2200 Listing.
  5. Field quality-control test reports.
- J. Certification of Torsional Vibration Compatibility: Comply with NFPA 110.
- K. Operation and Maintenance Data: For packaged engine generators to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 and Division 26, include the following:
-

1. List of tools and replacement items recommended to be stored at the Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.

L. Warranty: Special warranty specified in this Section.

#### **1.4 QUALITY ASSURANCE**

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

1. Maintenance Proximity: Not more than 4 hours' normal travel time from Installer's place of business to Project site.
2. Engineering Responsibility: Preparation of data for vibration isolators and seismic restraints of engine skid mounts, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

B. Manufacturer Qualifications: A qualified manufacturer that has produced and commissioned a minimum of one thousand (1000) integrated paralleled systems. Maintain, within fifty (50) miles of Project site, a service center capable of providing training, parts, and emergency maintenance repairs.

C. Source Limitations: Obtain packaged generator sets and auxiliary components through one (1) source from a single manufacturer.

D. Product Options: Drawings indicate size, profiles, and dimensional requirements of packaged generator sets and are based on the specific system indicated. Refer to Section 016000 "Product Requirements."

E. Welding: Qualify procedures and personnel according to ASME Boiler and Pressure Vessel Code: Section IX for welding exhaust and cooling system piping.

F. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

G. Comply with NFPA 37.

H. Comply with NFPA 70.

I. Comply with NFPA 99.

J. Comply with NFPA 110 requirements for Level 1 emergency power supply system.

K. Engine Exhaust Emissions: Comply with applicable state and local government requirements.

L. Noise Emission: Comply with applicable state and local government requirements for maximum noise level at adjacent property boundaries due to sound emitted by generator set including engine, engine exhaust, engine cooling-air intake and discharge, and other components of installation.

#### **1.5 COORDINATION**

A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases.

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**1.6 DELIVERY, STORAGE AND HANDLING**

- A. Deliver engine generator system and auxiliary system components to their final locations in protective wrappings, containers and other protection that will exclude dirt and moisture and prevent damage from construction operations. Remove protection only after equipment is safe from such hazards.

**1.7 WARRANTY**

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of packaged engine generators and associated auxiliary components that fail in materials or workmanship within specified warranty period. Alternate Bi-Fuel Bid must also include single source warranty responsibility for all components including bi fuel accessories. Third party warranties will not be accepted.

- 1. Warranty Period: Five (5) years from date of Substantial Completion.

**1.8 MAINTENANCE SERVICE**

- A. Initial Maintenance Service: Beginning at Substantial Completion, provide twelve (12) months' full maintenance by skilled employees of manufacturer's designated service organization. Include quarterly exercising to check for proper starting, paralleling, load transfer, and running under load. Include routine preventive maintenance as recommended by manufacturer and adjusting as required for proper operation. Maintenance agreements shall include parts and supplies as used in manufacture and installation of original equipment.

**1.9 EXTRA MATERIALS**

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Fuses: One (1) for every ten (10) of each type and rating, but not less than one (1) of each.
  - 2. Indicator Lamps: Two (2) for every six (6) of each type used, but not less than two (2) of each.
  - 3. Filters: One (1) set each of lubricating oil, fuel, and combustion-air filters.

**PART 2 - PRODUCTS****2.1 MANUFACTURERS**

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. Cummins
  - 2. Kohler Generators
  - 3. Generac

**2.2 ENGINE-GENERATOR SET**

- A. Packaged engine-generator set shall be a coordinated assembly of compatible components.
-

- B. Power Output Ratings: Nominal ratings as indicated, with capacity as required to operate as a unit as evidenced by records of prototype testing.
- C. Output Connections: Three-phase, four-wire.
- D. Safety Standard: Comply with ASME B15.1.
- E. Nameplates: Each major system component shall be equipped with a nameplate to identify manufacturer's name and address, and model and serial number of component.
- F. Fabricate engine-generator-set mounting frame and attachment of components to resist generator-set movement during a seismic event when generator-set mounting frame is anchored to building structure.
- G. Mounting Frame: Adequate strength and rigidity to maintain alignment of mounted components without depending on concrete foundation. Mounting frame shall be free from sharp edges and corners and shall have lifting attachments arranged for lifting with slings without damaging components.
  - 1. Rigging Diagram: Inscribed on metal plate permanently attached to mounting frame to indicate location and lifting capacity of each lifting attachment and generator-set center of gravity.

## 2.3 GENERATOR-SET PERFORMANCE

- A. Oversizing generator compared with the rated power output of the engine is permissible to meet specified performance.
    - 1. Nameplate Data for Oversized Generator: Show ratings required by the Contract Documents rather than ratings that would normally be applied to generator size installed.
  - B. Steady-State Voltage Operational Bandwidth: Two percent (2%) of rated output voltage from no load to full load.
  - C. Steady-State Voltage Modulation Frequency: Less than 1 Hz.
  - D. Transient Voltage Performance: Not more than ten percent (10%) variation for fifty percent (50%) step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within 0.5 second.
  - E. Steady-State Frequency Operational Bandwidth: Plus or minus 0.25 percent of rated frequency from no load to full load.
  - F. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.
  - G. Transient Frequency Performance: Less than 2-Hz variation for a fifty percent (50%) step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within three seconds.
  - H. Output Waveform: At no load, harmonic content measured line to neutral shall not exceed two percent (2%) total with no slot ripple. The telephone influence factor, determined according to NEMA MG 1, shall not exceed fifty percent (50%).
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- I. Sustained Short-Circuit Current: For a 3-phase, bolted short circuit at system output terminals, the system shall supply a minimum of three hundred percent (300%) of rated full-load current for not less than 10 seconds and then clear the fault automatically, without damage to winding insulation or other generator system components.
- J. Excitation System: Permanent Magnet Generator. Performance shall be unaffected by voltage distortion caused by nonlinear load.
- K. Start Time: Comply with NFPA 110, Type 10, system requirements.

## 2.4 SERVICE CONDITIONS

- A. Environmental Conditions: Engine-generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:
  - 1. Ambient Temperature: Minus 15 to plus 40 deg C.
  - 2. Relative Humidity: Zero to ninety-five percent (0-95%).
  - 3. Altitude: Sea level to 1000 feet.

## 2.5 ENGINE

- A. Fuel: Deisel.
- B. Rated Engine Speed: 1800 rpm.
- C. Maximum Piston Speed for V-10 Cylinder Arrangement: 1677 fpm.
- D. Lubrication System: The following items are mounted on engine or skid:
  - 1. Filter and Strainer: Rated to remove ninety percent (90%) of particles 5 micrometers and smaller while passing full flow.
  - 2. Thermostatic Control Valve: Control flow in system to maintain optimum oil temperature. Unit shall be capable of full flow and is designed to be fail-safe.
  - 3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.
- E. Engine Fuel System:
  - 1. Designed to operate on Diesel.
- F. Coolant Jacket Heater: Electric-immersion type, factory installed in coolant jacket system. Comply with NFPA 110 requirements for Level 1 equipment for heater capacity.
- G. Governor: Adjustable isochronous, with speed sensing.
- H. Pipe crankcase ventilation fumes directly into engine intake to burn them and reduce unwanted emissions.
- I. Engine must meet EPA emissions standards for diesel engines. Evidence of EPA certification must be submitted prior to engineering acceptance.

## 2.6 ENGINE COOLING SYSTEM

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- A. Description: Closed loop, liquid cooled, with radiator factory mounted on engine-generator-set mounting frame and integral engine-driven coolant pump.
- B. Radiator: Rated for specified coolant.
- C. Coolant: Solution of fifty percent (50%) ethylene-glycol-based antifreeze and fifty percent (50%) water, with anticorrosion additives as recommended by engine manufacturer.
- D. Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant system pressure for engine used. Equip with gage glass and petcock.
- E. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.
- F. Coolant Hose: Flexible assembly with inside surface of nonporous rubber and outer covering of aging-, ultraviolet-, and abrasion-resistant fabric.
  - 1. Rating: 50-psig maximum working pressure with coolant at 180 deg F (82 deg C), and non-collapsible under vacuum.
  - 2. End Fittings: Flanges or steel pipe nipples with clamps to suit piping and equipment connections.
- G. Coolant piping external to engine-generator set. Use ASTM B 88, Type L copper tubing with brazed joints, sized as recommended by engine manufacturer. Refer to Plumbing Drawings for basic piping installation and joint construction.

## 2.7 FUEL SUPPLY SYSTEM

- A. Diesel.

## 2.8 ENGINE EXHAUST SYSTEM

- A. Muffler: Critical type, sized as recommended by engine manufacturer. Muffler must be installed inside the generator enclosure.
  - 1. Provide muffler with drain outlet through a petcock.
- B. Connection from Engine to Exhaust System: Flexible section of corrugated stainless-steel pipe, minimum 18-inch length from exhaust outlet to muffler with flanged pipe connections.
- C. Connection from Exhaust Pipe to Muffler: Stainless-steel expansion joint with liner.
- D. Exhaust Piping External to Engine: ASTM A 53, Schedule 40, welded, black steel, with welded joints and fittings.

## 2.9 COMBUSTION-AIR INTAKE

- A. Description: Heavy-duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.

## 2.10 STARTING SYSTEM

- A. Description: 24-V electric, with negative ground and including the following items:
-



1. Components: Sized so they will not be damaged during a full engine-cranking cycle with ambient temperature at maximum specified in "Environmental Conditions" Paragraph in "Service Conditions" Article.
2. Cranking Motor: Heavy-duty unit that automatically engages and releases from engine flywheel without binding.
3. Cranking Cycle: As required by NFPA 110 for system level specified
4. Battery: Adequate capacity within ambient temperature range specified in "Environmental Conditions" Paragraph in "Service Conditions" Article to provide specified cranking cycle at least three (3) times without recharging.
5. Battery Cable: Size as recommended by engine manufacturer for cable length indicated. Include required interconnecting conductors and connection accessories.
6. Battery Compartment: Factory fabricated of metal with acid-resistant finish and thermal insulation. Thermostatically controlled heater shall be arranged to maintain battery above 10 deg C regardless of external ambient temperature within range specified in "Environmental Conditions" Paragraph in "Service Conditions" Article. Include accessories required to support and fasten batteries in place.
7. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation and 35-A minimum continuous rating.
8. Battery Charger: Current-limiting, automatic-equalizing and float-charging type. Unit shall comply with UL 1236 and include the following features:
  - a. Operation: Equalizing-charging rate of 10 A shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery terminals. Unit shall then be automatically switched to a lower float-charging mode and shall continue to operate in that mode until battery is discharged again.
  - b. Automatic Temperature Compensation: Adjust float and equalize voltages for variations in ambient temperature from minus 40 deg C to plus 60 deg C to prevent overcharging at high temperatures and undercharging at low temperatures.
  - c. Automatic Voltage Regulation: Maintain constant output voltage regardless of input voltage variations up to plus or minus ten percent (+/- 10%).
  - d. Ammeter and Voltmeter: Flush mounted in door. Meters shall indicate charging rates.
  - e. Safety Functions: Sense abnormally low battery voltage and close contacts providing low battery voltage indication on control and monitoring panel. Sense high battery voltage and loss of ac input or dc output of battery charger. Either condition shall close contacts that provide a battery-charger malfunction indication at system control and monitoring panel.
  - f. Enclosure and Mounting: NEMA 250, Type 1, wall-mounted cabinet.

## 2.11 CONTROL AND MONITORING

- A. Functional Description: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one (1) or more separate automatic transfer switches initiate starting and stopping of the generator set. When mode-selector switch is switched to the on position, the generator set starts. The off position of the same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down the generator set and initiate alarms. Operation of a remote emergency-stop switch also shuts down the generator set.
  - B. Functional Description: Switching on-off switch on the generator control panel to the on position starts the generator set. The off position of the same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down the generator set and initiate alarms. Operation of a remote emergency-stop switch also shuts down the generator set.
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- C. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages shall be grouped in a common control and monitoring panel mounted on the generator set. Mounting method shall isolate the control panel from generator-set vibration.
  - D. Indicating and protective devices and controls shall include those required by NFPA 110 for a Level 1 system, and the following:
    - 1. Digital Indicating and Protective Devices and Controls:
      - a. AC voltmeter.
      - b. AC ammeter.
      - c. AC frequency meter: dial type.
      - d. DC voltmeter (alternator battery charging).
      - e. Engine-coolant temperature gage.
      - f. Engine lubricating-oil pressure gage.
      - g. Engine lube oil temperature.
      - h. Running-time meter.
      - i. Ammeter-voltmeter, phase-selector switch(es).
      - j. Generator-voltage adjusting rheostat.
      - k. Upper- and lower-meter scale indicator lights.
      - l. Start-stop switch.
      - m. Overspeed shutdown device.
      - n. Coolant high-temperature shutdown device.
      - o. Coolant low-level shutdown device.
      - p. Oil low-pressure shutdown device.
      - q. Auto/Off/Test switch. Test mode shall automatically start unit without interrupting normal electrical supply.
      - r. Overspeed shutdown device with LED status indicator which lights when overspeed condition has occurred as cause of shutdown.
      - s. Coolant high-temperature shutdown device with LED status indicator which lights when pre-alarm operating temperature has been reached and stays lit when shutdown occurs.
      - t. Coolant low-level shutdown device with LED status indicator which lights when low coolant level causes shutdown.
      - u. Oil low-pressure shutdown device with LED status indicator which lights when pre-alarm oil pressure condition has been reached and stays lit when shutdown occurs.
      - v. Over crank shutdown device with LED status indicator which indicates engine has failed to start after 60 second cranking period.
      - w. Lamp test switch and audible alarm with silencer switch.
      - x. Low coolant temperature alarm with LED status indicator which indicates failure of block heater.
      - y. LED status indicator for "switch off", which indicates when control switch has been placed in "off" position.
      - z. LED status indicator for "system ready", indicating no malfunctions detected.
      - aa. Generator overload.
  - E. Supporting Items: Include sensors, transducers, terminals, relays, and other devices and include wiring required to support specified items. Locate sensors and other supporting items on engine or generator, unless otherwise indicated.
  - F. Connection to Data Link: A separate terminal block, factory wired to Form C dry contacts, for each alarm and status indication is reserved for connections for data-link transmission of indications to remote data terminals.
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- G. Common Remote Audible Alarm: Comply with NFPA 110 requirements for Level 1 systems. Include necessary contacts and terminals in control and monitoring panel.
- H. 12/24 Volt Remote Annunciator Panel: With lights, audible alarm, alarm switch and lamp test switch, in accordance with NFPA 110, Level 1, to monitor the following conditions:
  - 1. Line power.
  - 2. Generator power.
  - 3. System ready (in auto position).
  - 4. Alarm switch off.
  - 5. Generator switch off.
  - 6. Emergency stop.
  - 7. Engine high-temperature shutdown.
  - 8. Lube-oil low-pressure shutdown.
  - 9. Overspeed shutdown.
  - 10. Remote emergency-stop shutdown.
  - 11. Engine high-temperature pre-alarm.
  - 12. Lube-oil low-pressure pre-alarm
  - 13. Low coolant level.
  - 14. Over crank shutdown.
  - 15. Coolant low-temperature alarm.
  - 16. Control switch not in auto position.
  - 17. Battery-charger malfunction alarm.
  - 18. Battery low-voltage alarm.
  - 19. Battery high voltage alarm.
- I. Remote Alarm Annunciator: Comply with NFPA 99. Labeled LED shall identify each alarm event. Common audible signal shall sound for alarm conditions. Silencing switch in face of panel shall silence signal without altering visual indication. Connect so that after an alarm is silenced, clearing of initiating condition will reactivate alarm until silencing switch is reset. Cabinet and faceplate are surface- or flush-mounting type to suit mounting conditions indicated.
- J. Remote Emergency-Stop Switch: Flush; wall mounted, unless otherwise indicated; and labeled. Push button shall be protected from accidental operation.

## 2.12 GENERATOR OVERCURRENT AND FAULT PROTECTION

- A. Generator Circuit Breaker: Molded-case, thermal-magnetic type, one hundred percent (100%) rated; complying with **NEMA** AB 1 and UL 489.
    - 1. Tripping Characteristic: Designed specifically for generator protection.
    - 2. Trip Rating: Matched to generator rating.
    - 3. Shunt Trip: Connected to trip breaker when generator set is shut down by other protective devices.
    - 4. Mounting: Adjacent to or integrated with control and monitoring panel.
    - 5. Circuit breaker must be mounted inside generator enclosure. External circuit breakers or power breakers are not acceptable.
  - B. Generator Protector: Microprocessor-based unit that continuously monitors current level in each phase of generator output, integrates generator heating effect over time, and predicts when thermal damage of the alternator will occur. When signaled by the protector or other generator-set protective devices, a shunt-trip device in the generator disconnect switch shall open the switch to disconnect the generator from the load circuits. Protector shall perform the following functions:
-

1. Initiates a generator overload alarm when the generator has operated at an overload equivalent to one hundred ten percent (110%) of full-rated load for 60 seconds. Indication for this alarm is integrated with other generator-set malfunction alarms.
  2. Under single or three-phase fault conditions, regulates the generator to three hundred percent (300%) of rated full-load current for up to 10 seconds.
  3. As the overcurrent heating effect on the generator approaches the thermal damage point of the unit, the protector switches the excitation system off, opens the generator disconnect device, and shuts down the generator set.
  4. Senses clearing of a fault by other overcurrent devices and controls recovery of rated voltage to avoid overshoot.
- C. Ground-Fault Indication: Comply with NFPA 70, Article 700. (D). Integrate ground-fault alarm indication with other generator-set alarm indications.
- D. Provide generator output breaker with one N.C. and one N.O. contact indicating breaker status. This status indication shall signal an alarm to the remote annunciator panel to indicate a "Generator Output Breaker Open" alarm. The remote annunciator panel shall be equipped with a single summary alarm wired to the building BMS system indicating a "Generator Trouble" alarm.

## 2.13 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

- A. Comply with NEMA MG 1 and specified performance requirements
- B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.
- C. Electrical Insulation: Class Hor Class **F**.
- D. Stator-Winding Leads: Brought out to terminal box to permit future reconnection for other voltages if required.
- E. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, overspeed up to one hundred twenty-five percent (125%) of rating, and heat during operation at one hundred ten percent (110%) of rated capacity.
- F. Excitation shall use no slip or collector rings, or brushes, and shall be arranged to sustain generator output under short-circuit conditions as specified.
- G. Enclosure: Drip proof.
- H. Instrument Transformers: Mounted within generator enclosure.
- I. Voltage Regulator: Solid-state type, separate from exciter, providing performance as specified.
1. Adjusting rheostat on control and monitoring panel shall provide plus or minus five percent (+/-5%) adjustment of output-voltage operating band.
  2. Provide with under-frequency protection and moisture-resistive protection.
  3. Regulation shall be within plus or minus two percent (+/-2%) of rated voltage from no load to full load.
  4. On application of rated load at rated power factor, instantaneous voltage dip shall NOT exceed twenty percent (20%), with recovery within 1 second.
- J. Strip Heater: Thermostatically controlled unit arranged to maintain stator windings above dew point.
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- K. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.
- L. Subtransient Reactance: Twelve percent (12%), maximum.
- M. Provide Permanent Magnet Generator (PMG) system.
- N. Alternator shall be self-ventilated, one-piece cast aluminum alloy, uni-directional internal fan shall provide high volume, low noise air delivery with broad range, 12-load reconnectable, four- pole rotating field unit.
- O. Temperature rise shall be within NEMA MG1-22.40, IEEE and ANSI Standards for standby duty at rated output.
- P. Provide front-end mounted junction box for load connections. Junction box shall have space to mount regulator and voltage adjust rheostat inside box and to relocate same to opposite side without unit modification.
- Q. Locked Rotor kVA: Total available skVA shall be minimum 6,600 at thirty-five percent (35%) voltage dip (1,650 skVA for each unit). Ninety percent (90%) sustained voltage ratings will not be accepted.

#### 2.14 SYSTEM CONTROLLER (PM-SC)

- A. The power manager system controller shall be an integrated microprocessor-based solution providing full digital integration with the generator controllers. The system controller shall utilize standard hardware and firmware manufactured by the generator supplier. The use of PLC based solutions will be considered less desirable due to reliability and support concerns posed by custom hardware/custom software solutions. A preference will be shown for designs that use the same control board hardware for both the generator(s) and system controller.
  - B. To ensure reliability and serviceability, the system controller shall be required to meet the same requirements as listed for the generator controller.
  - C. The control panel will provide a touch screen display to provide intuitive access to all user pertinent system status information.
  - D. The power for the system controller shall utilize redundant DC sources - an internal DC source inclusive of charging system and an external DC source from one of the generator's cranking batteries.
  - E. The system controller shall interface with the generators using digital communications. Any of the generator(s) status, operation conditions, or configuration parameters shall be accessible with a single point communication via the system controller.
  - F. The system controller shall provide sequence of facility load through three (3) priority loading (permissive) load steps and three (3) load shedding steps. These output parameters function based on the number of generators on the generator bus. The priority loading function provides sequential permissive contact closures enabling load to be transferred onto the generator in response to generators coming on-line. The load shedding function provides contact closures that disconnects load from the generator bus in response to a reduction in available generator capacity.
  - G. In addition to the communication requirements identified in Article 2.3.3, the system controller shall provide modem communications as standard.
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- H. The system controller and digital communications shall enhance system operation; neither shall be required to synchronize or operate the generators in parallel. Systems that require external control hardware or digital communications to synchronize and operate the generators in parallel are not acceptable.
- I. The design of the system shall allow continued generator paralleled operation with failures to the system controller and/or communication. Control systems that have any systemic single point failure modes are not acceptable. This is inclusive of the reactive cross current and isochronous load sharing control loops.
- J. The design of the system shall also provide generator start and paralleled operation with failures to the system controller and/or communication.

#### 2.15 SOUND ATTENUATED OUTDOOR GENERATOR-SET ENCLOSURE

- A. Description: Vandal-resistant, sound attenuated weatherproof steel housing, wind resistant up to 100 mph. Multiple panels shall be lockable and provide adequate access to components requiring maintenance including rear-hinged control panel door. Panels shall be removable by one person without tools. Instruments and control shall be mounted within enclosure.
  - 1. Provide locking hasps (keyed alike) on engine side panels and control door.
- B. Description: Prefabricated or pre-engineered enclosure with the following features:
  - 1. Construction: Galvanized-steel, metal-clad, integral structural-steel-framed building erected on concrete foundation.
  - 2. Structural Design and Anchorage: Wind resistant up to 100 mph.
  - 3. Space Heater: Thermostatically controlled and sized to prevent condensation.
  - 4. Louvers: Equipped with bird screen and filter arranged to permit air circulation when engine is not running while excluding exterior dust, birds, and rodents.
  - 5. Hinged Doors: With padlocking provisions.
  - 6. Ventilation: Louvers equipped with bird screen and filter arranged to permit air circulation while excluding exterior dust, birds, and rodents.
  - 7. Thermal Insulation: Manufacturer's standard materials and thickness selected in coordination with space heater to maintain winter interior temperature within operating limits required by engine-generator-set components.
  - 8. Muffler Location: Within enclosure.
  - 9. Enclosure Panelboard: Within enclosure, serving lights, receptacles, heaters, controls, battery charger and devices within enclosure. All electrical components and devices served by the enclosure panelboard shall be factory prewired to this panelboard.
  - 10. Sound attenuation to reduce emitted sound to 76dBA at 23 feet.
- C. Engine Cooling Airflow through Enclosure: Maintain temperature rise of system components within required limits when unit operates at one hundred ten percent (110%) of rated load for 2 hours with ambient temperature at top of range specified in system service conditions.
- D. Interior Lights with Switch: Factory-wired, vapor-proof type fixtures within housing; arranged to illuminate controls and accessible interior.
- E. Convenience Outlets: Factory wired. Arrange for external electrical connection. Exterior Lighting: Contractor to supply and field install external lighting for generator enclosures.

#### 2.16 FINISHES

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- A. Indoor and Outdoor Enclosures and Components: Manufacturer's standard enamel over corrosion-resistant pretreatment and compatible standard primer.

## 2.17 SOURCE QUALITY CONTROL

- A. Prototype Testing: Factory test engine-generator set using same engine model, constructed of identical or equivalent components and equipped with identical or equivalent accessories.
  - 1. Tests: Comply with NFPA 110, Level 1 energy converters in Paragraphs 3.2.1, 3.2.1.1, and 3.2.1.2.
  - 2. Generator Tests: Comply with IEEE 115.
  - 3. Components and Accessories: Items furnished with installed unit that are not identical to those on tested prototype shall have been factory tested to demonstrate compatibility and reliability.
- B. Project-Specific Equipment Tests: Before shipment, factory test engine-generator set and other system components and accessories manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:
  - 1. Full load run as a complete paralleled system for minimum 4 hours for base and alternate bids. Systems not factory paralleled and tested prior to shipment will not be accepted.
  - 2. Parallel operation.
  - 3. Maximum power.
  - 4. Voltage regulation.
  - 5. Transient and steady-state governing.
  - 6. Single-step load pickup.
  - 7. Safety shutdown.
  - 8. Observation of Factory Tests: Provide fourteen (14) days' advance notice of tests and opportunity for observation of tests by Owner's representative
- C. Report factory test results within ten (10) days of completion of test.
- D. Provide evidence of UL2200 listing for specified engine generators.
- E. Provide evidence of EPA certification.
- F. Provide factory warranty documentation for all equipment

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas, equipment bases, and conditions, with Installer present, for compliance with requirements for installation and other conditions affecting packaged engine-generator performance.
- B. Examine roughing-in of piping systems and electrical connections. Verify actual locations of connections before packaged engine-generator installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 CONCRETE BASES

- A. Coordinate size and location of concrete bases.
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**3.3 INSTALLATION**

- A. Comply with packaged engine-generator manufacturers' written installation and alignment instructions and with NFPA 110.
- B. Install packaged engine generators level on concrete base.
  - 1. Seismic Restraint: Mount packaged engine generator on restrained spring isolators to provide seismic restraint and vibration isolation. Seismic restraint and vibration isolation requirements. Seismic installation shall provide "withstand" requirement.
- C. Install packaged engine generator to provide access, without removing connections or accessories, for periodic maintenance.
- D. Electrical Wiring: Install electrical devices furnished by equipment manufacturers but not specified to be factory mounted.
  - 1. Verify that electrical wiring is installed according to manufacturer's submittal and installation requirements in Division 26 Sections. Proceed with equipment start up only after wiring installation is satisfactory.
  - 2. Provide interconnecting wiring between generator and automatic transfer switch(es).
  - 3. Provide interconnecting wiring between generator and remote annunciator panel.
  - 4. Provide interconnecting wiring between the SCR control system operating components, sensors, generator set, troubles and alarms.

**3.4 CONNECTIONS**

- A. Piping installation requirements are specified on the Plumbing Drawings. Drawings indicate general arrangement of piping and specialties. The following are specific connection requirements:
  - 1. Install fuel, cooling-system, and exhaust-system piping adjacent to packaged engine generator to allow service and maintenance.
  - 2. Connect cooling-system water supply and drain piping to gas engine heat exchangers. Install flexible connectors at connections to engine generator and remote radiator.
  - 3. Connect fuel piping to engines with a gate valve and union.
    - a. Natural- and LP-gas piping, valves, and specialties for gas distribution outside and inside the building are specified on the Plumbing Drawings.
  - 4. Connect exhaust-system piping to engines.
- B. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical System".
- C. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- D. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

**3.5 IDENTIFICATION**

- A. Identify system components according to Section 260553 "Identification for Electrical Systems" and Plumbing Drawings.
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**3.6 FIELD QUALITY CONTROL**

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test and adjust field-assembled components and equipment installation, including connections, and to assist in field testing. Report results in writing.
1. Perform each electrical test and visual and mechanical inspection stated in NETA ATS, Sections 7.15.2.1 and 7.22.1 (except for vibration baseline test). Certify compliance with test parameters. Tests shall be conducted by applying load (via load bank) to load side of automatic transfer switch or to another load point acceptable to Engineer.
  2. Perform tests recommended by manufacturer.
  3. NFPA 110 Acceptance Tests: Perform tests required by NFPA 110 that are additional to those specified here including, but not limited to, the following:
    - a. Single-step full-load pickup test.
  4. Battery Tests: Equalize charging of battery cells according to manufacturer's written instructions. Record individual cell voltages.
    - a. Measure charging voltage and voltages between available battery terminals for full-charging and float-charging conditions. Check electrolyte level and specific gravity under both conditions.
    - b. Test for contact integrity of all connectors. Perform an integrity load test and a capacity load test for the battery.
    - c. Verify acceptance of charge for each element of the battery after discharge.
    - d. Verify that measurements are within manufacturer's specifications.
  5. Battery-Charger Tests: Verify specified rates of charge for both equalizing and float-charging conditions.
  6. System Integrity Tests: Methodically verify proper installation, connection, and integrity of each element of engine-generator system before and during system operation. Check for air, exhaust, and fluid leaks.
  7. Exhaust-System Back-Pressure Test: Use a manometer with a scale exceeding 40-inch wg. Connect to exhaust line close to engine exhaust manifold. Verify that back pressure at full-rated load is within manufacturer's written allowable limits for the engine.
  8. Exhaust Emissions Test: Comply with applicable government test criteria.
  9. Voltage and Frequency Transient Stability Tests: Use recording oscilloscope to measure voltage and frequency transients for fifty and one hundred percent (50 and 100%) step-load increases and decreases, and verify that performance is as specified.
  10. Harmonic-Content Tests: Measure harmonic content of output voltage under twenty-five percent (25%) and at one hundred percent (100%) of rated linear load. Verify that harmonic content is within specified limits.
  11. Noise Level Tests: Measure A-weighted level of noise emanating from generator-set installation, including engine exhaust and cooling-air intake and discharge, at four (4) locations on the property line less than 23 feet from the enclosure, and compare measured levels with required values.
- B. Coordinate tests with tests for transfer switches and run them concurrently.
- C. Test instruments shall have been calibrated within the last twelve (12) months, traceable to standards of the National Institute for Standards and Technology, and adequate for making positive observation of test results. Make calibration records available for examination on request.
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- D. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
- E. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
- F. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- G. Remove and replace malfunctioning units and retest, reinspect as specified above.
- H. Retest: Correct deficiencies identified by tests and observations and retest until specified requirements are met.
- I. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations. Attach a label or tag to each tested component indicating satisfactory completion of tests.

### **3.7 STARTUP SERVICE**

- A. Engage a factory-authorized service representative to perform startup service.
- B. Inspect field-assembled components and equipment installation, including piping and electrical connections. Report results in writing.
- C. Complete installation and startup checks according to manufacturer's written instructions.

### **3.8 DEMONSTRATION**

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain packaged engine generators. Refer to Section 017900 "Demonstration and Training".
  - 1. Coordinate this training with that for transfer switches.

END OF SECTION

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