

VENDOR AGREEMENT FOR PRODUCTS AND/OR SERVICES
FOR
CIPP 455-705 EMID Emergency Generator Replacement

This Agreement is made and entered into as of the ____ day of _____, 20__ by and between the Estero Municipal Improvement District, hereinafter called "DISTRICT," and _____, hereinafter called "VENDOR."

RECITALS

This Agreement is entered into with reference to the following facts and circumstances:

- A. That DISTRICT desires to engage VENDOR to provide a product and/or services to the DISTRICT;
- B. That VENDOR is specially trained, experienced and competent to perform and has agreed to provide the product and/or services to the DISTRICT and;
- C. That the DISTRICT has elected to engage VENDOR upon the terms and conditions as hereinafter set forth.

- 1. A. Services. The services to be performed by VENDOR under this Agreement are set forth in Exhibit A, which is, by this reference, incorporated herein and made a part hereof as though it were fully set forth herein.

Performance of the work specified in said Exhibit A is hereby made an obligation of VENDOR under this Agreement, subject to any changes that may be made subsequently hereto upon the mutual written agreement of the said parties.

Where in conflict, the terms of this Agreement supersede and prevail over any terms set forth in Exhibit A.

- B. Product. The product to be supplied by VENDOR under this Agreement is set forth in Exhibit A which is, by this reference, incorporated herein and made a part hereof as though it were fully set forth herein.

Timely delivery of the product specified in said Exhibit A is hereby made an obligation of VENDOR under this Agreement, subject to any changes that may be made subsequently hereto upon the mutual written agreement of the said parties.

VENDOR's obligation to provide the product includes but is not limited to, the provision of all labor, equipment, materials, testing and any other

required work or services or costs of any type incidental to the supply of the product.

2. Term; Termination. (a) The term of this Agreement shall commence upon the date hereinabove written and shall expire upon the date enumerated in Exhibit A, delivery of the product or completion of performance of services hereunder by VENDOR, whichever date shall first occur.
(b) Notwithstanding the provisions of (a) above, DISTRICT may with or without cause, direct VENDOR to suspend, delay or interrupt services, in whole or in part, for such periods of time as DISTRICT may determine in its sole discretion. (c) DISTRICT may terminate performance of the services under this Agreement in whole, or from time to time in part, for default, should VENDOR commit a material breach of this Agreement, or part thereof, and not cure such breach within ten (10) calendar days of the date of DISTRICT's written notice to VENDOR demanding such cure, in which case VENDOR shall be liable to DISTRICT for all loss, cost, expense, damage and liability resulting from such breach and termination. (d) DISTRICT may terminate performance of the services under this Agreement in whole, or from time to time in part, for convenience, whenever DISTRICT determines that such termination is in DISTRICT's best interests, in which case VENDOR shall be entitled to recover its costs expended up to the termination date plus reasonable profit thereon to the termination date as this Agreement would otherwise provide, but may recover no other cost, damage or expense. VENDOR shall continue its work throughout the course of any dispute, and VENDOR's failure to continue work during a dispute shall be a material breach of this Agreement.
3. Compensation; Expenses; Payment. DISTRICT shall compensate VENDOR for all products supplied or services performed by VENDOR hereunder as shown in Exhibit B attached hereto and by this reference incorporated herein.

Notwithstanding the foregoing, the combined total of compensation and reimbursement of costs payable hereunder shall not exceed the sum (\$ _____). Invoices for amounts in excess of (\$ _____) shall not be paid unless additional amounts have been approved in advance of supplying the product, performing the services or incurring the costs and expenses by DISTRICT's District Manager (for contracts less than \$50,000) or District Board of Directors (for contracts \$50,000 or more) evidenced by motion duly made and carried and a written contract amendment having been executed.

Compensation and reimbursement of costs and expenses hereunder shall be payable upon VENDOR meeting contract milestones as defined in Exhibit B. Billing shall include an itemized statement, briefly describing by task and labor category or cost/expense items billed.

4. Additional Services. In the event DISTRICT desires the delivery of additional products or performance of additional services not otherwise included within Exhibit A, such products or services shall be authorized in advance by DISTRICT's District Manager (for contracts less than \$50,000) or District Board of Directors (for contracts \$50,000 or more) by motion duly made and carried. Such amendment to this Agreement shall include a description of the product to be delivered or services to be performed thereunder, the maximum compensation and reimbursement of costs and expenses payable therefor, the time of performance thereof, and such other matters as the parties deem appropriate. Except to the extent modified by written amendment, all other terms and conditions of this Agreement shall be deemed incorporated in each such amendment.
5. Records. VENDOR shall keep and maintain accurate records of products delivered or of all time expended in performing services and costs and expenses incurred relating thereto. Said records shall be available to DISTRICT for review and copying during regular business hours at VENDOR's place of business or as otherwise agreed upon by the parties.
6. Authorization. This Agreement becomes effective when endorsed by both parties in the space provided below.
7. Documents. All documents, plans, drawings, renderings, and other papers, or copies thereof, as finally rendered, prepared by VENDOR pursuant to the terms of this Agreement, shall, upon preparation and delivery to DISTRICT, become the property of DISTRICT
8. Relationship of Parties. VENDOR is an independent Contractor and does not act as DISTRICT's agent in any capacity, whatsoever. VENDOR is not entitled to any benefits that DISTRICT provides to DISTRICT employees, including, without limitation, worker's compensation benefits or payments, pension benefits, health benefits or insurance benefits. Terms within this Agreement regarding direction apply to and concern the result of the VENDOR's provision of Services, not the means, methods, or scheduling of the VENDOR's work. VENDOR shall be solely responsible for the means, methods, techniques, sequences and procedures with respect to its provision of Services under this Agreement. VENDOR shall pay all payroll taxes imposed by any governmental entity and shall pay all other taxes not specifically identified in this Agreement as DISTRICT's responsibility.

9. Schedule. VENDOR shall adhere to the schedule set forth in Exhibit A; provided, that DISTRICT shall grant reasonable extensions of time for the delivery of products or performance of services occasioned by governmental reviews of VENDOR's work product or other unavoidable delays; provided, further, that such unavoidable delay shall not include strikes, lockouts, work stoppages, or other labor disturbances conducted by, or on behalf of, VENDOR's officers or employees.

VENDOR acknowledges the importance to DISTRICT of timely delivery of products or services and agrees to put forth its best professional efforts to perform in a manner consistent with that schedule.

10. Force Majeure. Except for defaults of subconsultants at any tier, VENDOR shall not be liable for any excess costs if the failure to perform the Agreement arises from causes beyond the control and without the fault or negligence of VENDOR, including without limitation failure to reasonably mitigate any adverse impacts (Force Majeure). Force Majeure events include the following:

Acts of God, fires, floods, earthquake, other natural disasters, epidemics and pandemics (other than COVID-19 or variants), abnormal weather conditions beyond the parameters otherwise set forth in this Article, nuclear accidents, strikes, lockouts, freight embargos, interruptions in service by a regulated utility, or governmental statutes or regulations enacted or imposed after the fact (together, "force majeure events").

[For consideration if applicable:] Any Force Majeure event with a duration in excess of [TBD by Owner—recommend not less than 30] days entitles either party to terminate this Agreement with written notice to the other party, without further penalty or compensation.

11. VENDOR's Liability for Injury to Persons or Damage to Property.
- a. VENDOR shall be liable for damages arising out of injury to the person and/or damage to DISTRICT property, DISTRICT employees, persons designated by DISTRICT for training, or any other person(s) other than VENDOR's agents or employees, designated by DISTRICT for any purpose prior to, during, or subsequent to delivery, installation, acceptance, and use of the Products either at VENDOR's site or at DISTRICT's place of business, provided that the injury or damage was caused by VENDOR's fault or negligence.
 - b. VENDOR shall not be liable for damages arising out of or caused by an alteration or an attachment not made or installed by VENDOR, or for damage to alterations or attachments that may result from the normal operation and maintenance of the Products in accordance with the Agreement.

12. Indemnity. To the fullest extent allowed by law, VENDOR hereby agrees to defend, indemnify, and save harmless DISTRICT and City of Foster City, its Council, boards, commissions, officers, employees, directors, volunteers and agents, from and against any and all claims, suits, actions liability, loss, damage, expense, injury (including, without limitation, economic harm, injury to or death of any person, including an employee of VENDOR or its Subcontractors), cost (including, without limitation, costs and fees of litigation) of every nature, kind or description, which may be brought against, or suffered or sustained by, DISTRICT or City of Foster City, its Council, boards, commissions, officers, employees, directors, volunteers or agents that arise out of, pertain to, or relate to any negligence, recklessness, or willful misconduct of VENDOR, any Subcontractor, anyone directly or indirectly employed or retained by them, or anyone that they control. In the event one or more defendants is unable to pay its share of defense costs due to bankruptcy or dissolution of the business, the VENDOR shall meet and confer with other parties regarding unpaid defense costs.

The duty of VENDOR to indemnify and save harmless, as set forth herein, shall include the duty to defend as set forth in Section 2778 of the California Civil Code; provided, however, that nothing herein contained shall be construed to require VENDOR to indemnify DISTRICT and City of Foster City, its Council, boards, commissions, officers, employees and agents against any responsibility or liability in contravention of Section 2782 of the California Civil Code.

VENDOR's responsibility for such defense and indemnity obligations shall survive the termination or completion of this Agreement for the full period of time allowed by law.

The defense and indemnification obligations of this agreement are undertaken in addition to, and shall not in any way be limited by, the insurance obligations contained within this Agreement.

13. Patent, Copyright and Trade Secret Indemnity.
 - a. VENDOR shall hold DISTRICT, its officers, agents and employees, harmless from liability of any nature or kind, including costs and expenses, for infringement or use of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, article or appliance furnished or used in connection with the Agreement.
 - b. VENDOR may be required to furnish a bond to DISTRICT against any and all loss, damage, costs, expenses, claims and liability for patent, copyright and trade secret infringement.

- c. VENDOR, at its own expense, shall defend any action brought against DISTRICT to the extent that such action is based upon a claim that the Products supplied by VENDOR or the operation of such Products pursuant to a current version of VENDOR supplied operating software infringes a patent or copyright or violates a trade secret. VENDOR shall pay those costs and damages finally awarded against DISTRICT in any such action. Such defense and payment shall be conditioned on the following:
 - i. That VENDOR shall be notified within a reasonable time in writing by DISTRICT of any notice of such claim; and
 - ii. That VENDOR shall have the sole control of the defense of any action on such claim and all negotiations for its settlement or compromise, provided, however, that when principles of government or public law are involved, DISTRICT shall have the option to participate in such action at its own expense.
- d. Should the Products, or the operation thereof, become, or in VENDOR's opinion are likely to become, the subject of a claim of infringement of a patent or copyright or a trade secret, DISTRICT shall permit VENDOR at its option and expense either to procure for DISTRICT the right to continue using the Products, or to replace or modify the same so that they become non infringing. If none of these options can reasonably be taken, or if the use of such Products by DISTRICT shall be prevented by injunction, VENDOR agrees to take back such Products and make every reasonable effort to assist DISTRICT in procuring substitute Products. If, in the sole opinion of DISTRICT, the return of such infringing Products makes the retention of other Products acquired from VENDOR under the Agreement impractical, DISTRICT shall then have the option of terminating the Agreement, or applicable portions thereof, without penalty or termination charge. VENDOR agrees to take back such Products and refund any sums DISTRICT has paid VENDOR less any reasonable amount for use or damage.
- e. VENDOR shall have no liability to DISTRICT under any provision of this clause with respect to any claim of patent, copyright or trade secret infringement which is based upon.
 - i. The combination or utilization of Products furnished hereunder with equipment or devices not made or furnished by VENDOR; or
 - ii. The operation of equipment furnished by VENDOR under the control of any operating software other than, or in addition to, the current version of VENDOR supplied operating software; or
 - iii. The modification by DISTRICT of the equipment of software furnished hereunder; or
 - iv. The combination or utilization of software furnished hereunder with non-VENDOR supplied software.

- f. VENDOR certifies that it has appropriate systems and controls in place to ensure that DISTRICT funds will not be used in the performance of the Agreement for the acquisition, operation or maintenance of computer software in violation of copyright laws.
14. Insurance. Prior to execution of this Agreement, VENDOR shall furnish to DISTRICT Certificates of Insurance showing satisfactory proof that it maintains the insurance required by this Agreement as set forth in EXHIBIT D, Insurance, which are attached and made a part of this Agreement. VENDOR shall maintain all required insurance throughout the term of this Agreement and as otherwise provided in EXHIBIT D. In the event VENDOR fails to maintain any required insurance, and notwithstanding Paragraph 3 above, DISTRICT may (but is not obligated to) purchase such insurance and deduct or retain premium amounts from any sums due VENDOR under this Agreement (or VENDOR shall promptly reimburse DISTRICT for such expense).

VENDOR shall maintain insurance as required by this Agreement to the fullest amount allowed by law and shall maintain insurance for a minimum of five (5) years following completion of this project or service. In the event VENDOR fails to obtain or maintain completed operations coverage as required by this Agreement, the VENDOR at its sole discretion may purchase the coverage required and the cost will be paid by VENDOR.

15. WORKERS' COMPENSATION. VENDOR certifies that he is aware of the provisions of the Labor Code of the State of California which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and VENDOR certifies that he will comply with such provisions before commencing the performance of the work of this agreement.
16. NON-DISCRIMINATION. The VENDOR will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The VENDOR will take affirmative action to ensure that applicants are employed and the employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: employment, advancement, demotion, transfer, recruitment, or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The VENDOR shall at all times be in compliance with the requirements of the Federal Americans With Disabilities Act (Public Law 101-336) which prohibits discrimination on the basis of disability by public entities. The VENDOR agrees to post in conspicuous places available to employees

and applicants for employment any notices provided by the CITY setting forth the provisions of this non-discrimination clause.

17. Notice. All notices required by this Agreement shall be given to the DISTRICT and VENDOR in writing, by first class mail, postage prepaid, addressed as follows:

DISTRICT: Estero Municipal Improvement District
610 Foster City Boulevard
Foster City, CA 94404-2299
Attention: Jen Chen

VENDOR: Name
Address
City, State, Zip
Attention: _____
Email Address: _____

18. Non-Assignment. This Agreement is not assignable either in whole or in part.

19. Substitutions. VENDOR may not substitute any Products or Services without DISTRICT’s advance written consent. VENDOR shall not use any specification in lieu of those contained in the Agreement without DISTRICT’s advance written consent.

20. Warranty. Unless otherwise specified, the warranties contained in the Agreement begin after acceptance has occurred.

- a. VENDOR warrants that all Products and Services furnished hereunder will conform to the requirements of the Agreement (including all descriptions, specifications and drawings made a part hereof). All Products will be merchantable, fit for their intended purposes, free from all defects in materials and workmanship and to the extent not manufactured pursuant to detailed designs furnished by DISTRICT, free from defects in design. No approval of designs, specifications or other Services furnished by VENDOR shall relieve VENDOR of its obligations under this warranty.
- b. All warranties, including special warranties specified elsewhere herein, shall inure to DISTRICT, its successors and assigns, and any users of the Products or Services.

21. Samples.

- a. DISTRICT may require samples of items inspection and specification testing and must be furnished free of expense to

DISTRICT. The samples furnished must be identical in all respects to the products bid and/or specified in the Agreement.

- b. Samples, if not destroyed by tests, may, upon VENDOR's request made at the time the sample is furnished, be returned at VENDOR's expense.

22. Newly Manufactured Products. All Products shall be newly manufactured products; used or reconditioned products are prohibited, unless otherwise specified.

23. Packing and Shipment.

- a. All Products shall be packed in suitable containers for protection in shipment and storage, and in accordance with applicable specifications. Each container of a multiple container shipment shall be identified to:
 - i. show the number of the container and the total number of containers in the shipment; and
 - ii. the number of the container in which the packing sheet has been enclosed.
- b. All shipments by VENDOR or its subcontractors must include packing sheets identifying DISTRICT's Contract number; item number; quantity and unit of measure; description of the Products shipped; and appropriate evidence of inspection, if required.
- c. Shipments must be made as specified in the Agreement, as it may be amended, or otherwise directed in writing by DISTRICT.

24. Transportation Costs and Other Fees or Expenses. No charge for delivery, drayage, express, parcel post, packing, cartage, insurance, license fees, permits, cost of bonds, or for any other purpose will be paid by DISTRICT unless expressly authorized by and itemized in the Agreement. Unless otherwise directed by DISTRICT in writing, all Products and components thereof shall be delivered f.o.b. Point of Delivery. VENDOR shall select the means and methods of transportation.

25. Inspection, Acceptance and Rejection.

- a. VENDOR and its subcontractors shall provide and maintain a quality assurance system acceptable to DISTRICT covering Products and Services under the Agreement and will tender to DISTRICT only Products that have been inspected and found to conform to all requirements. VENDOR will keep records evidencing inspections and their result, and will make these records available to DISTRICT during the Agreement performance and for three years after final payment. VENDOR shall permit DISTRICT to review procedures, practices, processes and related documents

to determine the acceptability of VENDOR's quality assurance system or other business practices related to performance of the Agreement.

- b. All Products may be subject to inspection and test by DISTRICT or its authorized representatives.
- c. VENDOR and its subcontractors shall provide all reasonable facilities for the safety and convenience of inspectors at no additional cost to DISTRICT. VENDOR shall furnish to inspectors all information and data as may be reasonably required to perform their inspection.
- d. All Products may be subject to final inspection, test and acceptance by DISTRICT, notwithstanding any payment or other inspection.
- e. DISTRICT shall give written notice of rejection of Products delivered or Services performed within a reasonable time after receipt of such Products or performance of such Services. Such notice of rejection will state the respects in which the items do not substantially conform to their specifications. If DISTRICT does not provide such notice of rejection within thirty (30) days of delivery, unless otherwise specified in the Agreement, such Products and Services will be deemed to have been accepted. Acceptance shall not be construed to waive any warranty rights that DISTRICT might have at law or by express reservation in the Agreement with respect to any nonconformity, or any other rights provided by law.

- 26. Compliance With Statutes and Regulations. VENDOR covenants that in the performance of the Agreement it will comply with all applicable statutes, rules, regulations and orders of the United States, the State and DISTRICT, and shall defend, indemnify and hold the DISTRICT harmless against any loss, cost, damage or liability by reason of VENDOR's violation of this provision.
- 27. National Labor Relations Board Certification. VENDOR swears under penalty of perjury that no more than one final, unappealable finding of contempt of court by a federal court has been issued against VENDOR within the immediately preceding two-year period because of VENDOR's failure to comply with an order of the National Labor Relations Board.
- 28. Covenant Against Gratuities. VENDOR warrants that no gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by VENDOR, or any agent or representative of VENDOR, to any officer or employee of DISTRICT with a view toward securing the Agreement or securing favorable treatment with respect to any determinations concerning the performance of the Agreement. For breach or violation of this warranty, DISTRICT shall have the right to terminate the Agreement, either in whole or in part, and any loss or damage sustained by DISTRICT in procuring on the open market any items which VENDOR agreed to

supply shall be borne and paid for by VENDOR. The rights and remedies of DISTRICT provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or in equity.

29. Amendments. This Agreement may be amended or modified only by written agreement signed by both parties.
30. Validity. The invalidity in whole or in part of any provision of this Agreement shall not void or affect the validity of any other provision of this Agreement.
31. Governing Law. This Agreement shall be deemed to have been executed in the County of San Mateo, California. The formation, interpretation and performance of this Agreement shall be governed by the laws of the State of California, excluding its conflict of laws rules. Any suit or action initiated by either party shall be brought in the County of San Mateo, California unless the parties agree otherwise in a written amendment to this Agreement. In the event of litigation between the parties hereto to enforce any provision of the Agreement, the unsuccessful party will pay the reasonable attorney's fees and expenses of litigation of the successful party.
32. Mediation. Should any dispute arise out of this Agreement, the parties shall meet in mediation and attempt to reach a resolution with the assistance of a mutually acceptable mediator. Neither party shall be permitted to file legal action without first meeting in mediation and making a good faith attempt to reach a mediated resolution. The costs of the mediator, if any, shall be paid equally by the parties. If a mediated settlement is reached neither party shall be deemed the prevailing party for purposes of the settlement and each party shall bear its own legal costs.
33. Conflict of Interest. VENDOR represents and warrants that it presently has no interest, and shall not have any interest, direct or indirect, which would conflict in any manner with the performance of work and services required under this Agreement. Without limitation, VENDOR represents to and agrees with DISTRICT that VENDOR has disclosed any potential conflict of interest, and will have no future conflict of interest, in providing DISTRICT services hereunder, including but not limited to, any interest (financial, share ownership, shared management, shared directors, or reporting responsibilities) VENDOR may presently have, or will have in the future, with respect to any other person or entity (including but not limited to potential VENDORS, consultants, contractors, or regulatory agency) which may have an interest in the subject matter of the Services.

34. Confidentiality. Any information, whether proprietary or not, made known to or discovered by VENDOR during the performance of or in connection with the Agreement for DISTRICT, will be kept confidential and not be disclosed to any other person. VENDOR will immediately notify DISTRICT in writing if it is requested to disclose any information made known to or discovered by during the performance of or in connection with the Agreement. These confidentiality provisions and limitations shall remain fully effective indefinitely after VENDOR's completion of the Agreement.

35. Waiver of Default. Waiver of any default by either party to this Agreement shall not be deemed to be waiver of any subsequent default. Waiver or breach of any provision of this Agreement shall not be deemed to be a waiver of any other or subsequent breach, and shall not be construed to be a modification of the terms of this Agreement unless this Agreement is modified as provided below.

36. Entire Agreement. This Agreement, including Exhibits A, B C, D, E, and F, comprises the entire Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed on the date first above written by their respective officers duly authorized in that behalf.

ESTERO MUNICIPAL IMPROVEMENT DISTRICT

Dated: _____
 _____, District Manager
 (for contracts less than \$50,000)
 [REMOVE signature line if \$50,000 or more]

Dated: _____

 Patrick Sullivan, President
 (for contracts \$50,000 or more)
 [REMOVE signature line if less than \$50,000]

ATTEST:

Dated: _____

 Priscilla Schaus, District Secretary

APPROVED AS TO FORM

Dated: _____

Benjamin Stock, District Legal Counsel

VENDOR

Dated: _____

Type Name & Title of VENDOR Authorized to Sign

EXHIBIT A

SCOPE OF WORK and SCHEDULE FOR CIPP 455-705 EMID Emergency Generator Replacement

Scope of Deliverables:

- 1) Generator, Weatherproof Enclosure & Subbase Diesel Fuel Storage Tank. Refer to Bid Schedule in Exhibit B.
- 2) Automatic Transfer Switch in Outdoor Enclosure. Refer to Bid Schedule in Exhibit B.

Scope of Services:

Refer to Technical Specifications 16233A, 16233B, and Pre-Purchase Drawing Package.

Delivery Schedule: The delivery date shall correspond with the anticipated construction date in Spring 2025.

Vendor to attach estimated delivery schedule including the following:

- 1) Submittal Reviews for District;
- 2) Fabrication of Equipment (for each Bid Item);
- 3) Delivery to District Facilities.

EXHIBIT B

VENDOR'S FEES and SCHEDULE OF BID PRICES

Summary

Total Contract Services:

Itemized Fees: Refer to Schedule of Bid Prices Table.

Project Payment Schedule: Refer to General Specifications for bid item descriptions.

SCHEDULE OF BID PRICES

Bid Item No.	Bid Item	Est. Quan.	Unit	Unit Price	Bid Amount
Lift Station 22					
1	Generator, Weatherproof Enclosure & Subbase Diesel Fuel Storage Tank for Lift Station 22	EA	1		
Lift Station 29					
2	Generator, Weatherproof Enclosure & Subbase Diesel Fuel Storage Tank for Lift Station 29	EA	1		
3	Automatic Transfer Switch in Outdoor Enclosure for Lift Station 29	EA	1		
Lift Station 59					
4	Generator, Weatherproof Enclosure & Subbase Diesel Fuel Storage Tank for Lift Station 59	EA	1		
5	Automatic Transfer Switch in Outdoor Enclosure for Lift Station 59	EA	1		
TOTAL BID PRICE (Total Base Bid)					

SCHEDULE OF ALTERNATE BID PRICES

Bid Item No.	Bid Item	Est. Quan.	Unit	Unit Price	Bid Amount
Lift Station 22					

1	Particulate Matter Filter as may be required per Bay Area Air Quality Management District	EA	1		
TOTAL ALTERNATE BID PRICE (Total Alternate Base Bid)					

Total Base Bid Price:

(Indicate Bid Price in Words)

Total Bid Price Plus Alternate Bid:

(Indicate Bid Price in Words)

EXHIBIT C
ADDITIONAL TERMS and CONDITIONS

EXHIBIT C
ADDITIONAL TERMS and CONDITIONS

NOTICE TO VENDORS

SEALED BIDS will be received by the District Clerk, or designee, of the City of Foster City for the Project identified above until **June 18, 2024 at 2 PM**. Bids shall be sealed and addressed and noted as stated in Section C-17 of Vendor Agreement.

NOTE: Vendor Agreement including Project Plans and Specifications are available electronically through BarkerBlue Digital Imaging and www.fostercity.org under “doing business” and “rfps and bids”.

Sealed Bid for Equipment of:

EMID Emergency Generator Replacement

Following the closure of the bid submittal period, bids will be publicly opened and read for performing work as follows:

Furnishing all labor, materials, equipment, and performing all work necessary and incidental to the construction of the project known as EMID Emergency Generator Replacement according to drawings and specifications as prepared by the District and according to the Contract Documents. In general, the project comprises of replacing the Emergency Generator, Weatherproof Enclosure & Subbase Diesel Fuel Storage Tank and Automatic Transfer Switch in Outdoor Enclosure at Lift Stations 29 and 59 and only the Emergency Generator, Weatherproof Enclosure & Subbase Diesel Fuel Storage Tank at Lift Station 22.

Procurement of Bidding Documents:

Bidding Documents contain the full description of the Work. Copies of the Vendor Agreement are on file and available for public inspection at the District’s Public Works Department, located at 610 Foster City Boulevard, Foster City, California 94404. Vendors can purchase copies of the Vendor Agreement and Project Plans from BarkerBlue Digital Imaging by calling (650) 696-2100 or Toll Free at (866)347-1011; Faxing at (650) 696-2199, or emailing to Plotting@barkerblue.com on or after **May 21, 2024**.

For online viewing, please go to www.fostercity.org under “doing business” and “rfps and bids”

Bidding Documents need not be returned to District. Vendor is responsible for printing any and all of Bidding Documents.

Instructions

Bidding procedures are prescribed in the **Instruction to Vendors** section. This is a Public Works project. Bids shall be executed upon the bid forms provided, which are a part of the Vendor Agreement. Each vendor must submit with its bid security in one of the following forms: cash, cashier's check payable to the District, a certified check payable to the District, or a bid

bond in the form included with the bid documents, executed by an admitted surety insurer, made payable to the District. The guaranty shall be in the amount of ten percent (10%) of the amount bid, and shall be forfeited should the vendor, if awarded the contract, fail to enter into the same, or fail to furnish in a timely manner the bonds and/or proof of insurance required under the Vendor Agreement.

All vendors shall be licensed under the provisions of the Business and Professions Code to provide the type of equipment for the project.

Vendor are solely responsible for the cost of preparing their Bids.

Each vendor shall submit with its bid a statement setting forth its experience on the forms included in the Vendor Agreement.

Telephones will not be available to vendors for the preparation or submittal of bids. Bid forms received after the designated time will not be accepted by the District. Vendors and their authorized agents are invited to attend the bid opening.

The District reserves the right, in its sole discretion, to reject any or all bids, to re-bid, to waive inconsequential defects in bidding not involving time, price or quality of the work, to make any awards or any rejections in what it alone considers to be in the best interest of the District, and waive any irregularities in the bids.

The contract will be awarded, if at all, to the responsible vendor that submits the lowest responsive bid that follows the Vendor Selection Criteria.

INSTRUCTIONS TO VENDORS

The work to be performed is described in the Vendor Agreement titled, **CIPP 455-705 EMID Emergency Generator Replacement**, dated **May 21, 2024** and prepared by **Freyer & Laureta, Inc.** for the District.

PROCEDURES FOR SUBMISSION ON BIDS

Required Pre-Bid Investigations

All Vendors shall carefully examine the Vendor Agreement and satisfy themselves as to their sufficiency; and shall not at any time after the submission of the Bid dispute or complain that there is any misunderstanding in regard to the location, extent, nature or amount of work to be performed. The Vendor shall notify the District of all conflicts, errors or discrepancies in the Vendor Agreement. The submitting of a Bid shall be considered an acknowledgement on the part of the Vendor of familiarity with the Scope of Work.

Vendors Questions and Answers

Vendors must direct all questions about the meaning or intent of Bidding Documents to District in writing. Interpretations or clarifications considered necessary by District in response to such questions will be issued by written Addenda mailed, faxed, or delivered to all parties recorded by the District as having received Bidding Documents. District may not answer questions received less than ten Days prior to the date for opening Bids.

Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect, and Vendors shall not rely on oral statements.

Addenda

Addenda may be issued to all plan holders during the Bid period. Any and all Addenda issued shall become part of the Vendor Documents and shall be fully considered by all Vendors during the formation of Bids. It is the responsibility of the Vendor to contact the District to determine the existence of any and all addenda. Failure of any vendor to receive such Addenda shall not be justification for non-compliance with the terms of the instructions.

RECEIPT OF BIDS

Date and Time

Sealed hard copy Bids to follow shall be post marked to reflect the submittal date. District shall reject all Bids received after the specified time and will return such Bids to Vendors unopened. Vendors must submit Bids in accordance with this Document.

Bid Submission

Bids for the Work shall be made on the forms contained in the Vendor Agreement as listed on the Vendor's Checklist at the end of this Section. A complete set of documents shall be placed opaque sealed 10 inch x 13 inch envelopes, sealed, and addressed to:

Estero Municipal Improvement District

Attention: Jen Chen

610 Foster City Boulevard

Foster City, CA 94404-2299

**BID: EMID Emergency Generator Replacement Project
CIP 455-705**

Bids shall be delivered to the District at the above address before the time set for the opening of bids as provided in Section **NOTICE TO VENDORS**.

Vendors should mark their Bid envelopes using the name, address, identifying information and contract number.

If the Vendor wishes to hand deliver the sealed bid, the bid shall be addressed as stated above and delivered to the same address.

The District reserves the right to postpone the date and time for receiving and/or opening of bids at any time prior to the date and time established in the Notice to Vendors. Postponement notices may be faxed and will be subsequently mailed to plan holders of record in the form of an addendum.

Required Content of Bid Submittals

1. Bid Form: Vendors must submit Bids on Bid Form in accordance with the provisions of this document. Vendors must complete all Bid items including schedule of bid prices and supply all information required by Bid documents and specifications.
2. Vendor Registration and Experience Form: Vendors must submit Vendor Registration and Experience Form, completed in accordance with the provisions of the Form. Vendor Experience must be in accordance with the Technical Specifications 16233A-1.07 and 16233B-1.07 in Exhibit A of the Vendor Agreement.
3. Non-Collusion Affidavit: Vendors must submit Non-Collusion Affidavit completed in accordance with the provisions of the document.
4. Vendor Certifications: Vendors must submit Vendor Certification completed in accordance with the provisions of the document.

Estimated Delivery Schedule: Estimated Delivery Schedule shall follow guidelines as stated in Exhibit A of Vendor Agreement.

BID OPENING

Immediately after the expiration of the time for submission of Bids, all Bids will be publicly opened, read, declared, and referred to the District Council for action.

Bids to receive consideration shall be made in accordance with the following instructions:

- a. Bids shall be made upon the separate form provided therefor, a copy of which is included with the Vendor Agreement. The signature of all persons executing the Bid shall be in longhand writing. The completed form shall be submitted without interlineations, alterations, or erasures.
- b. Except as otherwise indicated, all items shall be included in the Envelope.
- c. Bids shall contain only the quotations for which the form is prepared. Alternative Bids will not be considered unless called for. No oral, email, facsimile, telegraphic, or telephonic bids, or modifications, will be considered.
- d. Vendors shall submit in Envelope Form **VENDOR'S EXPERIENCE** in accordance with the Technical Specifications 16233A-1.07 and 16233B-1.07 provisions herein and therein.

VENDOR SELECTION CRITERIA

District will determine Apparent Low Vendor as follows:

- A. District will open each Vendors' Envelope at the time and place indicated, initially evaluate them for responsiveness, and determine an Apparent Low Vendor as specified herein.
- B. For the Apparent Low Vendor only, District will open Envelope and evaluate the Apparent Low Vendor for responsiveness to the requirements CERTIFICATION OF VENDOR'S EXPERIENCE AND QUALIFICATIONS provided as an Attachment for responsibility.
- C. Apparent Low Vendor will be determined solely on the total amount of all Bid items based on terms contained in Notice Inviting Bids and Bid Form. All Vendors are required to submit Bids on all Bid items (including any alternates).
- D. If Apparent Low Vendor is determined to be non-responsive or non-responsible, then District may proceed to the next Apparent Low Vendor's Bid pursuant to any procedures determined in its reasonable discretion, and proceed for all purposes as if this Apparent Low Vendor were the original Apparent Low Vendor.

Evaluation of Bids

The District will evaluate the Bids as follows:

- A. Bids must be full, complete, clearly written and using the required forms. Vendors shall make any change in the Bid by crossing out the original entry, entering and initialing the new entry. Vendor's failure to submit all required documents strictly as required entitles District to reject the Bid as non-responsive. All Vendors must submit Bids containing each of the fully executed Sections supplied in the Vendor Agreement.
- B. In evaluating Bids, District will consider Vendors' qualifications, whether or not the Bids comply with the prescribed requirements, unit prices, and other data, as may be requested in Bid Form or prior to the Notice of Award.
- C. District will consider the estimated delivery schedule, which will include milestones such as reviewed submittals to District, Fabrication of Equipment (for each Bid Item), and delivery to District facilities, as part of the Bid evaluation process. Refer to Exhibit A: Delivery Schedule in Vendor Agreement.
- D. District may conduct reasonable investigations and reference checks of Vendor and other persons and organizations as District deems necessary to assist in the evaluation of any Bid and to establish Vendor's responsibility, qualifications, financial ability, and capability to perform the Work in accordance with the Contract Documents to District's satisfaction within the prescribed time. Submission of a Bid constitutes Vendor's consent to the foregoing.
- E. District shall have the right to consider information provided by sources other than Vendor. District shall also have the right to communicate directly with Vendor's surety regarding Vendor's bonds.
- F. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between written words and figures will be resolved in favor of the words.
- G. Bids shall be deemed to include the written responses of the Vendor to any questions or requests for information of District made as part of Bid evaluation process after submission of Bid.

Reservation of Rights

District specifically reserves the right, in its sole discretion, to:

- A. Reject any or all nonconforming, non-responsive, unbalanced, or conditional Bids;
- B. Reject the Bid of any Vendor as non-responsive as a result of any error or omission in the Bid; and
- C. Reject the Bid of any Vendor if District believes that it would not be in the best interest of Project to make an award to that Vendor, whether because the Bid is not responsive,

the Vendor is unqualified or of doubtful financial ability, or fails to meet any other pertinent standard or criteria established by District.

District may retain Bid securities of other than the Apparent Low Vendor for a period of 90 Days after award or full execution of the Contract, whichever first occurs.

For purposes of this Section, an “unbalanced Bid” is one having nominal process for some Bid items and enhanced prices for other Bid items.

District may waive any informalities or minor irregularities in the Bids. District also reserves the right, in its discretion, to reject any or all Bids and to re-Bid the Project.

Submission of Written Bid Protest

Any bid protest relating to the award of the contract for the Project must be submitted in writing to the District, Attn: Jen Chen, 610 Foster City Boulevard Foster City, CA 94404-2299. The protest must be received before close of business of the fifth business day following the posting Notice of Intent to Award at the District, Attn: Jen Chen, 610 Foster City Boulevard Foster City, CA 94404-2299. District will use reasonable efforts to deliver by facsimile or email a copy of Notice of Intent to Award to all Vendors who submitted Bids no later than the Business Day after issuance, although any delay or failure to do so will not extend the Bid protest deadline described herein.

The initial protest document shall contain a complete statement of the basis for the protest. The protest shall refer to the specific portion(s) of the Vendor Agreement, which forms the basis for the protest. The protest shall include the name, address and telephone number of the person representing the protesting party.

The party filing the protest shall concurrently transmit a copy of the initial protest document and any attached documentation to all other parties who have a direct financial interest that may be adversely affected by the outcome of the protest. Such parties shall include all other vendors or proposers who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest. The documents shall be transmitted by e-mail, fax, or overnight mail.

Only Vendors who the District otherwise determines are responsive and responsible are eligible to protest a Bid; protests from any other Vendors will not be considered. In order to determine whether a protesting Vendor is responsive and responsible, District may evaluate all information contained in any protesting Vendor’s Bid, and conduct the same investigation and evaluation as District is entitled to take regarding an Apparent Low Vendor.

Exclusive Remedy

The procedure and time limits set forth in this paragraph are mandatory and are the Vendor’s sole and exclusive remedy in the event of bid protest. Failure to comply with these procedures shall constitute a waiver of any right to further pursue the bid protest, including filing a

Government Code claim or legal proceedings. A Vendor may not rely on a protest submitted by another Vendor, but must timely pursue its own protest.

AWARD AND EXECUTION OF CONTRACT

Notice of Award and Submittal of Executed Contract Documents

If Contract is to be awarded, it will be awarded to the lowest responsible responsive Vendor. District will issue Notice of Award. Such Award, if made, will be made within sixty (60) days after the opening of the Bid Proposals, unless there is a bid protest, then (90) days after the day of bid opening.

Successful Vendor must execute and submit to District the “Required Contract Documents and Proof of Insurance” set forth below, by 5:00 p.m. of the 20th Day following the Notice of Award.

Required Contract Documents and Proof of Insurance

1. Agreement, fully executed by successful Vendor. Submit two originals, each bearing an original signature on the signature page and initials on each page.
2. Guaranty, fully executed by successful Vendor. Submit one original, bearing an original signature on the signature page and initials on each page.
3. Insurance certificates and endorsements required by Supplementary Conditions—Insurance: Submit one original set.
4. Any other items identified by District in Notice of Award.

Failure to Execute and Deliver Documents

Upon such failure to timely deliver all required Contract Documents as set forth herein, District may determine the next Apparent Low Vendor and proceed accordingly. Such Award, if made, will be made within sixty (60) days after the opening of the Bid Proposals.

GENERAL CONDITIONS AND REQUIREMENTS

Modification of Commencement of Work

District expressly reserves the right to modify the date for the Commencement of Work under the Contract and to independently perform and complete work related to Project. District accepts no responsibility to Vendor for any delays attributed to its need to complete independent work.

Conformed Project Manual

Following Award of Contract, District may prepare a conformed Project Manual reflecting Addenda issued during bidding, which will, failing objection, constitute the approved Project Manual.

Wage Rates

Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the State of California Department of Industrial Relations, are on file at the District's Public Works Department and may be obtained from the California Department of Industrial Relations website [<http://www.dir.ca.gov/OPRL/DPreWageDetermination.htm>] and are deemed included in the Bidding Documents. Upon request, Owner will make available copies to any interested party. Also, Vendor shall post the applicable prevailing wage rates at the Site.

Withdrawal of Bid

Vendors may withdraw their Bids at any time prior to the Bid opening time fixed in this Document, only by written request for the withdrawal of Bid filed with District at the City Clerk's Office, located at 610 Foster City Boulevard, Foster City, California 94404. Vendor or its duly authorized representative shall execute request to withdraw Bid.

Public Records Act Requests

Per the Public Records Act, District will make available to the public Vendor's SOQ (if vendor's Envelope is opened), all correspondence and written questions submitted during the Bid period, all Bid submissions opened in accordance with the procedures set forth herein, and all subsequent Bid evaluation information. All submissions not opened will remain sealed and shall be returned to the submitter. Except as otherwise required by law, the District will not disclose trade secrets or proprietary financial information submitted by Vendors that has been designated as confidential by Vendor (including but not limited to the SOQ). Any such trade secrets or proprietary financial information that Vendor believes should be exempted from disclosure shall be specifically identified and marked as such. Blanket-type identification by designating whole pages or sections shall not be permitted and shall be invalid. The specific confidential information must be clearly identified as such.

Upon a request for records regarding this Bid, District will notify the Vendor involved, within ten Days from receipt of the request, when the records will be made available for inspection. If the Vendor timely identifies any "proprietary, trade secret, or confidential commercial or financial" information that Vendor determines is not subject to public disclosure, and requests that District refuse to comply with the records request, Vendor shall take all appropriate legal action and defend Vendor's refusal to produce the information in all forums; otherwise District will make such information available to the extent require by applicable law, without restriction.

Information disclosed in the SOQ and the attendant submissions are the property of District unless Vendor makes specific reference to data that is considered proprietary. Subject to the

requirements in the Public Records Act, reasonable efforts will be made to prevent the disclosure of information except on a need-to-know basis during the evaluation process.

Substitutions

Vendors must base their Bids on products and systems specified in Contract Documents or listed by name in Addenda. District will consider substitution requests only for “or equal items.”

Vendor must clearly state any exceptions to the specified equipment requirements. The requirements are taken using the Kohler equipment but by no means the standard. Other brands can be used if it meets minimum requirements in the specifications and a statement of changes is submitted for evaluation.

VENDOR'S CHECKLIST

The following constitutes the Vendor's Checklist of completed Sections to be submitted with all Bids. All items are to be included in Envelope unless otherwise indicated:

Item	Checked
1. Bid Form	_____
2. Schedule of Bid Prices	_____
3. Vendor Registration and Experience Form in accordance with the Technical Specifications 16233A-1.07 and 16233B-1.07	_____
4. Non-Collusion Affidavit	_____
5. Vendor Certifications	_____
6. Estimated Delivery Schedule	_____

BID FORM
TO THE ESTERO MUNICIPAL IMPROVEMENT DISTRICT
THIS BID IS SUBMITTED BY:

(Firm/Company Name)

Re: **EMID Emergency Generator Replacement Project**
 Contract Number: **CIP 455-705**

1. The undersigned Vendor proposes and agrees, if this Bid is accepted, to enter into an agreement with the ESTERO MUNICIPAL IMPROVEMENT DISTRICT in the form included in the Contract Documents, Agreement, to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Sum and within the Contract Time indicated in this Bid and in accordance with all other terms and conditions of the Contract Documents.
2. Vendor accepts all of the terms and conditions of the Contract Documents, Exhibit C or Vendor Agreement. This Bid will remain subject to acceptance for 60 Days after the day of Bid opening, unless there is a bid protest, then 90 days after the day of bid opening.
3. In submitting this Bid, Vendor represents that Vendor has examined all of the Contract Documents, performed all necessary Pre-Bid investigations, and received the following Addenda:

Addendum Number	<u>ADDENDUM DATE</u>	Signature of Vendor

4. Based on the foregoing, Vendor proposes and agrees to fully perform the Work within the time stated and in strict accordance with the Contract Documents for the following sums of money listed in Schedule of Bid Prices in Exhibit B on Vendor Agreement.
5. The undersigned acknowledges that the Apparent Low Vendor will be determined as provided in Notice to Vendors and Instruction to Vendors.

6. If written notice of the acceptance of this Bid, hereinafter referred to as Notice of Award, is mailed or delivered to the undersigned Vendor within the time described in Paragraph 2 of this Document or at any other time thereafter before it is withdrawn, the undersigned Vendor will execute and deliver the documents required by Instructions to Vendors within the times specified therein.

7. Notice of Award or request for additional information may be addressed to the undersigned Vendor at the address set forth below.

8. The undersigned Vendor agrees to commence Work under the Contract Documents on the date established in the Vendor Agreement and to complete all Work within the time specified in Agreement.

9. The name of all persons interested in the foregoing Bid as principals are:

IMPORTANT NOTICE: If Vendor or other interested person is a corporation, give the legal name of corporation, state where incorporated, and names of president and secretary thereof; if a partnership, give name of the firm and names of all individual co-partners composing the firm; if Vendor or other interested person is an individual, give first and last names in full.

NAME OF VENDOR: _____

with license number: _____ Expiration: _____

_____ (Place of Incorporation, if Applicable) (Principal)

_____ (Principal)

_____ (Principal)

I certify (or declare) under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

_____ (Signature of Vendor)

Business Address: _____

Vendor's Representative(s):

_____ (Name/Title)

(Name/Title)

(Name/Title)

Officers Authorized to Sign Contracts

(Name/Title)

(Name/Title)

(Name/Title)

Telephone Number(s):

(Area Code) (Number)

(Area Code) (Number)

Fax Number(s):

(Area Code) (Number)

(Area Code) (Number)

Date of Bid:

END OF DOCUMENT

VENDOR REGISTRATION AND EXPERIENCE FORM

INDEPENDENT VENDOR REGISTRATION

License # _____

Date: _____ Fed I.D. # _____

Full Corporate Name of Company: _____

Street Address: _____

Mailing Address: _____

Phone: _____ Fax: _____

Name of Principal Contact: _____

Type of Business: _____ Sole Proprietor _____ Partnership
 _____ Non-Profit 501(c)(3) _____ Corporation
 _____ other (please explain: _____)

VENDOR EXPERIENCE

Experience information listed shall be in accordance with the Technical Specifications 16233A-1.07 and 16233B-1.07 in Exhibit A of the Vendor Agreement.

Years of Experience: _____

Type of Generators: _____

Project Examples: _____

Certifications: _____

Additional Information: _____

INSURANCE

Workers' Compensation:

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

General Liability:

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

Automobile Liability:

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

All-risk Course of Construction (if applicable, as required by Insurance and Indemnification):

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

Professional Liability (if applicable, as required by Insurance and Indemnification):

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

Pollution Legal Liability Insurance (if applicable, as required by Insurance and Indemnification):

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

VENDOR CERTIFIES, UNDER PENALTY OF PERJURY, THAT THE FOREGOING INFORMATION IS CURRENT AND ACCURATE AND AUTHORIZES OWNER, AND ITS AGENTS AND REPRESENTATIVES TO OBTAIN A CREDIT REPORT AND/OR VERIFY ANY OF THE ABOVE INFORMATION.

SIGNATURE

DATE

END OF DOCUMENT

NON-COLLUSION AFFIDAVIT

PUBLIC CONTRACT CODE §7106

NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY VENDOR AND SUBMITTED WITH

BID STATE OF CALIFORNIA)
) ss.
COUNTY OF _____)

_____, being first duly sworn,
(Name of Principal of Vendor)

deposes and says that he or she is _____
(Office of Affiant)

of _____, the party
(Name of Vendor)

making the foregoing Bid, that the Bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the Bid is genuine and not collusive or sham; that Vendor has not directly or indirectly induced or solicited any other vendor to put in a false or sham Bid, and has not directly or indirectly colluded, conspired, connived or agreed with any vendor or anyone else to put in a sham Bid, or that anyone shall refrain from bidding, and that the Vendor has not in any manner, directly or indirectly, sought by agreement, communication or conference with anyone to fix the Bid price of Vendor or any other vendor, or to fix any overhead, profit or cost element of the Bid price, or of that of any other vendor, or to secure any advantage against Owner, or anyone interested in the proposed contract; that all statements contained in the Bid are true; and further, that Vendor has not, directly or indirectly, submitted its Bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, Bid depository, or to any member or agent thereof to effectuate a collusive or sham Bid.

Executed under penalty of perjury under the laws of the State of California:

(Name of Vendor)

(Signature of Principal)

Subscribed and sworn before me _____

This _____ day of _____, 2020

Notary Public of the State of _____

In and for the County of _____

My Commission expires _____

(Seal)

NOTE: If Vendor is a partnership or a joint venture, this affidavit must be signed and sworn to by every member of the partnership or venture.

NOTE: If Vendor [including any partner or venturer of a partnership or joint venture] is a corporation, this affidavit must be signed by the Chairman, President, or Vice President and by the Secretary, Assistant Secretary, Chief Financial Officer, or Assistant Treasurer.

NOTE: If Vendor's affidavit on this form is made outside the State of California, the official position of the person taking such affidavit shall be certified according to law.

END OF DOCUMENT

VENDOR CERTIFICATIONS

TO BE EXECUTED BY ALL VENDORS AND SUBMITTED WITH BID

The undersigned Vendor certifies to District as set forth in sections 1 through 7 below.

1. STATEMENT OF CONVICTIONS

By my signature hereunder, I hereby swear, under penalty of perjury, that no more than one final, unappealable finding of contempt of court by a Federal Court has been issued against Vendor within the past two years because of failure to comply with an order of a Federal Court or to comply with an order of the National Labor Relations Board.

2. CERTIFICATION OF WORKER'S COMPENSATION INSURANCE

By my signature hereunder, as the Vendor, I certify that I am aware of the provisions of Labor Code Section 3700 that require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this Contract.

3. CERTIFICATION OF PREVAILING WAGE RATES AND RECORDS

By my signature hereunder, as the Vendor, I certify that I am aware of the provisions of Labor Code Section 1773 that requires the payment of prevailing wage on public projects. Vendor under the Contractor shall comply with Labor Code Section 1776 regarding wage records, and with Labor Code Section 1777.5 regarding the employment and training of apprentices. Contractor is responsible to ensure compliance by any and all subcontractors performing work under this Contract.

4. CERTIFICATION OF COMPLIANCE WITH PUBLIC WORKS CHAPTER OF LABOR CODE

By my signature hereunder, as the Contractor, I certify that I am aware of Labor Code Sections 1777.1 and 1777.7 and Contractor and Subcontractors are eligible to bid and work on public works projects.

5. CERTIFICATION OF NON-DISCRIMINATION

By my signature hereunder, as the Contractor, I certify that there will be no discrimination in employment with regard to race, color, religion, gender, sexual orientation, age or national origin; that all federal, state, and local directives and executive orders regarding non-discrimination in employment will be complied with; and that the principal of equal opportunity in employment will be demonstrated positively and aggressively.

6. CERTIFICATION OF NON-DISQUALIFICATION

By my signature hereunder, as the Contractor, I swear, under penalty of perjury, that the below indicated Vendor, any officer of Vendor, or any employee of Vendor who has a proprietary interest in such Vendor, has never been disqualified, removed, or otherwise prevented from bidding on, or completing a Federal, State, or local government project because of a violation of law or safety regulation, except as indicated on the separate sheet attached hereto entitled "Previous Disqualifications." If a statement of "Previous Disqualifications" is attached, please explain the circumstances.

7. CERTIFICATION OF ADEQUACY OF CONTRACT AMOUNT

By my signature hereunder, as the Vendor, pursuant to Labor Code Section 2810(a), I certify that, if awarded the Contract based on the undersigned's Bid, the Contract will include funds sufficient to allow the Vendor to comply with all applicable local, state, and federal laws or regulations governing the labor or services to be provided. I understand that Owner will be relying on this certification if it awards the Contract to the undersigned.

VENDOR:

(Name of Vendor)

Date: _____, **2024**

By: _____
(Signature)

Name: _____
(Print Name)

Its: _____
(Title)

END OF DOCUMENT

EXHIBIT D INSURANCE

VENDOR shall provide, in addition to the Certificates of Insurance, original Endorsement affecting the coverages specified in herein on the attached form. No substitute form will be accepted.

This is an Exhibit to, and made a part of and incorporated by reference to the Agreement dated Date of Agreement, by and between Vendor Name, hereinafter referred to as "**Vendor**", and the Estero Municipal Improvement District, hereinafter referred to as "**District**", providing for professional services.

1. **Vendor's Duty to Show Proof of Insurance.** Vendor, in order to protect District and its Council members, officials, agents, officers, and employees against all claims and liability for death, injury, loss and damage as a result of Vendor's acts, errors, or omissions in connection with the performance of Vendor's obligations, as required in this Agreement, shall secure and maintain insurance as described below. Vendor shall not perform any work under this Agreement until Vendor has obtained all insurance required under this section and the required certificates of insurance and all required endorsements have been filed with the District's authorized insurance representative, insurance Tracking Services Inc. (ITS). Receipt of evidence of insurance that does not comply with all applicable insurance requirements shall not constitute a waiver of the insurance requirements set forth herein. The required documents must be signed by the authorized representative of the insurance company shown on the certificate. Upon request, Vendor shall supply proof that such person is an authorized representative thereof, and is authorized to bind the named underwriter(s) and their company to the coverage, limits and termination provisions shown thereon, Vendor shall promptly deliver to ITS a certificate of insurance, and all required endorsements, with respect to each renewal policy, as necessary to demonstrate the maintenance of the required insurance coverage for the term specified herein. Such certificates and endorsements shall be delivered to ITS prior to the expiration date of any policy and bear a notation evidencing payment of the premium thereof if so requested. Vendor shall immediately pay any deductibles and self-insured retentions under all required insurance policies upon the submission of any claim by Vendor or District as an additional insured.

1.1 Insurance Requirements

Commercial General Liability Insurance

Commercial General Liability Insurance including, but not limited to, Contractual Liability Insurance (specifically concerning the indemnity provisions of this Agreement with the District), Products-Completed Operations Hazard, liability for slander, false arrest and invasion of privacy arising out of professional services rendered hereunder, Personal Injury (including bodily injury and death), and Property Damage for liability arising out of Vendor's performance of services under this Agreement. The Commercial General Liability insurance shall contain no exclusions or limitation for independent contractors working on the behalf of the named insured. Vendor shall maintain the Products-Completed Operations Hazard coverage for the longest period allowed by law following termination of this Agreement. The amount of said insurance coverage required by this Agreement shall be the policy limits, which shall be at least two million dollars (\$2,000,000) each occurrence and four million dollars (\$4,000,000) aggregate.

*Please note, the District will require a separate additional insured endorsement for the Commercial General Liability policy, listing the "the Estero Municipal Improvement District, its Council members, officials, agents, officers, and employees".

[FOR THE FOLLOWING INSURANCE REQUIREMENTS, PLEASE CONSIDER IF EACH IS APPROPRIATE FOR THE SERVICE TO BE PROVIDED AND FOR THE VENDOR. UNCHECK THE CHECKBOX FOR ANY INSURANCE REQUIREMENT THAT IS NOT APPLICABLE. PLEASE CONTACT THE DISTRICT MANAGER'S OFFICE WITH ANY QUESTIONS.]

Business Automobile Liability Insurance

Automobile Liability Insurance against claims of Personal Injury (including bodily injury and death) and Property Damage covering any vehicle and/or all owned, leased, hired and non-owned vehicles used in the performance of Services pursuant to this Agreement with coverage equal to the policy limits, which shall be at least two million dollars (\$2,000,000) each occurrence.

Workers' Compensation Insurance

VENDOR shall submit written proof that VENDOR is insured against liability for workers' compensation in accordance with the provisions of section 3700 of the California Labor Code. VENDOR shall require any Subcontractors to provide workers' compensation for all of the Subcontractors' employees, unless the Subcontractors' employees are covered by the insurance afforded by VENDOR. If any class of employees engaged in work or services performed under this Agreement is not covered by California Labor Code section 3700, VENDOR shall provide and/or require each Subcontractor to provide adequate insurance for the coverage of employees not otherwise covered. Vendor shall also maintain employer's liability insurance with limits of one million dollars (\$1,000,000) for bodily injury or disease.

Professional Liability Insurance

Professional Liability (Errors and Omissions) Insurance, for liability arising out of, or in connection with, all negligent acts, errors or omissions in connection with services to be provided under this Agreement, with no exclusion for claims of one insured against another insured, with coverage equal to the policy limits, which shall not be less than five million dollars (\$5,000,000) per occurrence and five million dollars (\$5,000,000) aggregate.

Installation Floater

Installation Floater, covering the work performed under this Contract, against all risks of direct physical loss. The policy shall cover the Contractor's labor, materials and equipment, including materials and equipment in transit or away from the project site, to be installed in the existing structure(s). The coverage shall be written for an amount equal to the initial contract amount plus the value of any subsequent change orders, subject to a deductible of not more than [\$10,000] payable by Contractor.

Cyber Liability Insurance

Cyber Liability Insurance, covering network risk and cyber liability (including coverage for unauthorized access, failure of security, breach of privacy perils, as well as notification costs and regulatory defense) in an amount of not less than \$1,000,000. Such insurance shall be maintained in force at all times during the term of the Contract and for a period of two years thereafter for services completed during the term of the Contract.

1.2 Self-Insured Retention

Any self-insured retentions in excess of \$100,000 must be declared on the Certificate of insurance or other documentation provided to District and must be approved by the District Risk Manager.

1.3 Claims-Made Basis Coverage

If any of the insurance coverages required under this Agreement is written on a claims-made basis, Vendor, at Vendor's option, shall either (i) maintain said coverage for at least five (5) years following the termination of this Agreement with coverage extending back to the effective date of this Agreement; (ii) purchase an extended reporting period of not less than five (5) years following the termination of this Agreement; or (iii) acquire a full prior acts provision on any renewal or replacement policy.

2. District as Additional Insured

On Vendor's Commercial General Liability and Automobile policies, the District, its Council members, officers, directors, agents, employees, and volunteers, shall be named as additional insured's, but only with respect to liability arising out of the activities of the named insured. Any endorsement shall be provided using one of the following three options: (i) on ISO form CG 20 10 1 1 85; or (ii) on ISO form CG 20 37 10 01 plus either ISO form CG 20 10 10 01 or CG 20 33 10 01; or (iii) on such other forms which provide coverage at least equal to or better than form CG 20 10 1 1 85.

3. Insurance terms and conditions:

3.1 Cancellation of Insurance

The above stated insurance coverages required to be maintained by Vendor shall be maintained until the completion of all of Vendor's obligations under this Agreement except as otherwise indicated herein. Each insurance policy supplied by Vendor shall not be suspended, voided, cancelled or reduced in coverage or in limits except after ten (10) days written notice by Vendor in the case of non-payment of premiums, or thirty (30) days written notice in all other cases. This notice requirement does not waive the insurance requirements stated herein. Vendor shall immediately obtain replacement coverage for any insurance policy that is terminated, canceled, non-renewed, or whose policy limits have been exhausted or upon insolvency of the insurer that issued the policy.

3.2 All insurance shall be issued by a company or companies admitted to do business in California and listed in the current "Best's Key Rating Guide" publication with a minimum rating of A-; VII Any exception to these requirements must be approved by the District Risk Manager.

3.3 If Vendor is, or becomes during the term of this Agreement, self-insured or a member of a self-insurance pool, Vendor shall provide coverage equivalent to the insurance coverages and endorsements required above. The District will not accept such coverage unless the District determines, in its sole discretion and by written acceptance, that the coverage proposed to be provided by Vendor is equivalent to the above-required coverages.

3.4 For any claims related to the Agreement, the Vendor's insurance coverage shall be primary insurance coverage at least as broad as ISO CG 20 01 04 13 as respects the District, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the District, its officers, officials, employees, or volunteers shall be excess of the Vendor's insurance and shall not contribute with it.

3.5 Insurance coverages in the minimum amounts set forth herein shall not be construed to relieve Vendor for any liability, whether within, outside, or in excess of such coverage, and regardless of solvency or insolvency of the insurer that issues the coverage; nor shall it preclude the District from taking such other actions as are available to it under any other provision of this Agreement or otherwise in law.

3.6 Failure by Vendor to maintain all such insurance in effect at all times required by this Agreement shall be a material breach of this Agreement by Vendor. District, at its sole option, may terminate this Agreement and obtain damages from Vendor resulting from said breach. Alternatively, District may purchase such required insurance coverage, and without further notice to Vendor, District shall deduct from sums due to Vendor any premiums and associated costs advanced or paid by District for such insurance. If the balance of monies obligated to Vendor pursuant to this Agreement are insufficient to reimburse District for the premiums and any associated costs, Vendor agrees to reimburse District for the premiums and pay for all costs associated with the purchase of said insurance. Any failure by District to take this alternative action shall not relieve Vendor of its obligation to obtain and maintain the insurance coverages required by this Agreement.

3.7 Should any of the required insurance (other than errors and omissions insurance) be provided under a form of coverage that includes a general annual aggregate limit or provides that claims investigation or legal defenses costs be included in such general aggregate limit, such general annual aggregate limit shall be double the occurrence or claims limit specified above.

3.8 District may (but is under no obligation to) secure project-specific insurance, wrap-up insurance, or administer an owner controlled insurance program ("OCIP"), in which case Vendor and its subcontractors shall communicate this fact to their insurance carriers and request that the risk of this project be excluded from their practice policies. Vendor's fees under this Agreement (and the fee of its subcontractors under subcontractor agreements) shall be reduced by the amount of insurance premiums that may be avoided by Vendor and its subcontractors by virtue of the District's obtaining the project-specific insurance, wrap-up insurance or administering an OCIP, and the exclusion of this project from coverage of Vendor's and subcontractors policies. Construction Manager and its subcontractors shall afford District access to their books and records and cooperate with District in verifying the amount of savings realized.

ATTACHED

1. Insurance Coverage Form

EXHIBIT D

This **INSURANCE COVERAGE FORM** modifies or documents insurance provided under the following:

Named Insured: _____ Effective Work Date(s): _____

Description of Work/Locations/Vehicles: _____

ADDITIONAL INSURED: **City of Foster City/Estero Municipal Improvement District (DISTRICT)**
610 Foster City Boulevard, Foster City, CA 94404
Attention: _____

Contract Administrator

Endorsement and Certificates of Insurance Required		Insurer	Policy No.
The Additional Insured, its elected or appointed officers, officials, employees and volunteers are included as insureds with regard to damages and defense of claims arising from: (Check all that apply)			
<input type="checkbox"/>	General Liability: (a) activities performed by or on behalf of the Named Insured, (b) products and completed operations of the Named Insured, (c) premises owned, leased occupied or used by the Named Insured, and/or (d) permits issued for operations performed by the Named Insured. {Note: MEETS OR EXCEEDS ISO Form # CG 20 10 11 85}		
<input type="checkbox"/>	Auto Liability: the ownership, operation, maintenance, use, loading or unloading of any auto owned, leased, hired or borrowed by the Named Insured, regardless of whether liability is attributable to the Named Insured or a combination of the Named Insured and the Additional Insured, its elected or appointed officers, officials, employees or volunteers.		
<input type="checkbox"/>	Other: [Cyber Liability, Installation Floater, etc.]		
Certificates of Insurance Required (no endorsement needed) (Check all that apply)		Insurer	Policy No.
<input type="checkbox"/>	Workers Compensation: work performed by employees of the Named Insured while those employees are engaged in work under the simultaneous directions and control of the Named Insured and the Additional Insured.		
<input type="checkbox"/>	Professional Liability:		

PRIMARY/NON-CONTRIBUTORY: This insurance is primary and is not additional to or contributing with any other insurance carried by or for the benefit of Additional Insureds.

SEVERABILITY OF INTEREST: The insurance afforded by this policy applies separately to each insured who is seeking coverage or against whom a claim is made or a suit is brought, except with respect to the insurer's limit of liability.

PROVISIONS REGARDING THE INSURED'S DUTIES AFTER ACCIDENT OR LOSS: Any failure to comply with reporting provisions of the policy shall not affect coverage provided to the Additional Insured, its elected or appointed officers, officials, employees, or volunteers.

CANCELLATION NOTICE. The insurance afforded by this policy shall not be suspended, voided, canceled, reduced in coverage or in limits except after thirty (30) days' prior written notice (ten (10) days if canceled due to non-payment) by regular mail return receipt requested has been given to the Additional Insured. Such notice shall be addressed as shown above.

WAIVER OF SUBROGATION: The insurer(s) named above agree to waive all rights of subrogation against the DISTRICT, its elected or appointed officers, officials, agents, volunteers and employees for losses paid under the terms of this policy which arise from work performed by the Named Insured for the DISTRICT.

Nothing herein contained shall vary, alter or extend any provision or condition of the Policy other than as above stated.

SIGNATURE OF INSURER OR AUTHORIZED REPRESENTATIVE OF THE INSURER

I, _____ (print/type name), warrant that I have authority to bind the above-named insurance company and by my signature hereon do so bind this company.

SIGNATURE OF AUTHORIZED REPRESENTATIVE (original signature required)

ORGANIZATION: _____ **TITLE:** _____

ADDRESS: _____

TELEPHONE: () _____

DATE ISSUED: _____

Exhibit E
SPECIAL TERMS and CONDITIONS

EXHIBIT F

**COVID-19 AMENDMENT/ATTACHMENT
(Vendor Agreement Form)**

This COVID-19 Amendment/Attachment amends the Agreement between _____ (“District”) and _____ (“Vendor”) dated _____.

1. Definitions

A. The 2019 novel coronavirus and the disease it causes are collectively referred to herein as “**COVID-19**”.

B. A “**COVID-19 Condition**” is something attributable to COVID-19 not caused by the Vendor (which for purposes herein includes all subcontractors) and beyond its reasonable control including but not limited to COVID-19 Proclamations and supply chain disruptions due to COVID-19, and other circumstances concerning COVID-19 not caused by the Vendor and which are beyond its reasonable control.

C. A “**COVID-19 Proclamation**” includes but is not limited to orders, directives and guidance concerning COVID-19 that have been issued, and which may be issued from time to time, by public agencies or regulatory bodies, the CDC or OSHA or Cal/OSHA, including without limitation the Cal/OSHA COVID-19 Prevention Emergency Temporary Standards. Vendor acknowledges that those orders, directives and guidance may require the Project to shut down or otherwise increase the Vendor’s cost or time of performance by calling for things such as social distancing and the use of personal protective equipment. In the event of conflicting COVID-19 Proclamations, the Vendor shall follow the most applicable, restrictive and newest COVID-19 Proclamations.

D. An “**Unknown COVID-19 Condition**” is a COVID-19 Condition the Vendor did not know about, and reasonably should not have known about, as of the date the Vendor submitted its proposal. The requirements contained in COVID-19 Proclamations issued before submission of a proposal are not Unknown COVID-19 Conditions, and the Vendor will be deemed to have knowledge of those requirements.

E. An “**Unknown COVID-19 Cost**” is a cost that: (i) is solely attributable to an Unknown COVID-19 Condition; (ii) is reasonable and unavoidable under the circumstances; (iii) is not the result of the Vendor’s failure to comply with the contract documents or a COVID-19 Proclamation; and (iv) is not the result of a subcontractors failure to comply with a COVID-19 Proclamation in connection with the performance of the Services.

2. COVID-19 Conditions and Proposal. Vendor is expected to know and is deemed to have known about COVID-19 Conditions when it submits its proposal, and COVID-19 Conditions must be accounted for in the Vendor’s price and schedule. In order to be

entitled to any relief from a COVID-19 Condition, the Vendor must demonstrate that the issue, cost or delay is due to an Unknown COVID-19 Condition.

3. Compliance with COVID-19 Proclamations.

A. Vendor shall comply with COVID-19 Proclamations in the performance of the Services, irrespective of when the COVID-19 Proclamations are issued, and as they pertain to performance of the Services. The cost of such compliance is non-compensable, except as otherwise expressly stated herein.

B. Vendor is responsible to ensure that its subcontractors and suppliers comply with COVID-19 Proclamations at all times in connection with the performance of their Services.

4. Delay. The Vendor is entitled to a reasonable time extension for an Unknown COVID-19 Condition. Such time extension is non-compensable.

5. District Directed Suspension. The District may suspend Services due to COVID-19 health concerns, even though the Vendor may be allowed to proceed with the Services based on COVID-19 Proclamations. The District may suspend the Services for its convenience. The Vendor is entitled to a time extension for a District Directed Suspension, and the contract amount will be equitably adjusted if and to the extent Vendor incurs increased costs that are Unknown COVID-19 Costs.

6. Compensation for COVID-19 Costs. District will reimburse the Vendor for Unknown COVID-19 Costs that are not included in the schedule of values.

7. Safe Work Practices. Vendor shall implement safe work practices recommended by CDC or OSHA or Cal/OSHA, which may include, inter alia, screening all employees, subcontractors, or others (“worker(s)”) at all locations where Services are performed for signs and symptoms of COVID-19; adopting staggered work schedules, e.g., providing alternating workdays or extra shifts, to reduce the total number of employees on a site at any given time and to ensure physical distancing; identifying choke points where workers are forced to stand together, such as hallways and elevators, ingress and egress points, break areas, and buses, and implement policies to maintain social distancing; coordinating deliveries in line with the employer's minimal contact and cleaning protocols; and instituting a rigorous housekeeping program to reduce dust levels at all exterior locations. Vendor remains fully responsible for following and complying with changes to recommended safe work practices from time to time.

8. Monitoring and Reporting. District may require the Vendor to actively monitor the health of its workers through temperature checks and questionnaires of major COVID-19 symptoms, including but not limited to cough, fever above 100.4 degrees Fahrenheit and shortness of breath. Vendor shall immediately report to District any outbreaks of COVID-19 among its workers. The Vendor shall not knowingly allow any worker who has tested positive with COVID-19 to enter a District building. In the event of an

outbreak or an exposure to COVID-19, the District may impose appropriate mitigation strategies which may be in consultation with the public health officer.

9. Conflicts. In the event of an inconsistency between this COVID-19 Amendment and the Agreement, this Addendum shall control.

IN WITNESS WHEREOF, the District and Vendor have executed this Covid-19 Amendment as of the date set forth above.

VENDOR:

DISTRICT:

Signature

Signature

Print Name & Title

Print Name & Title

Technical Specifications

SECTION 16233A

STANDBY POWER SYSTEM EQUIPMENT – CORPORATION YARD

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes the following standby power system equipment:
 - 1. Outdoor standby power generator in a sound-attenuated weatherproof enclosure including associated diesel emissions control system, base-mounted diesel fuel storage tank and integral resistive load bank.
 - 2. Outdoor, free-standing automatic transfer switch.
- B. Overview of Standby Power System Equipment Supply:
 - 1. Skid-mounted diesel engine-driven standby generator system.
 - 2. Base-mounted diesel fuel storage tank.
 - 3. Outdoor weather-proof, sound-attenuated, walk-in generator system enclosure.
 - 4. Diesel emissions control system (supplied integral within the new standby generator enclosure).
 - 5. Radiator-mounted resistive load bank system.
 - 6. Entire supplied, fully-integrated standby power system shall be certified as an Environmental Protection Agency (EPA) “Tier 4 Final” system.
 - 7. Automatic transfer switch housed in an outdoor, free-standing enclosure.
- C. Overview of Standby Power System Scope of Supply Responsibility:
 - 1. The standby power system equipment supplier shall be responsible for the delivery of all system equipment and components to the City of Foster City’s Corporation Yard (Corp Yard) located at:

Foster City Corporation Yard
100 Lincoln Centre Drive
Foster City, CA 94404
 - 2. The supplied standby power system fuel storage base tank, standby generator skid equipment and generator enclosure shall be offloaded from the supplier’s delivery truck directly onto an existing concrete equipment pad utilizing hoisting equipment provided by District’s installation Contractor. The standby power system equipment supplier’s field personnel shall be present at the

Corp Yard site to direct the offloading of the new standby generator and automatic transfer switch system equipment.

3. Anchoring of the supplied standby power system standby generator and automatic transfer switch equipment to the existing concrete equipment pad shall be provided by Others.
4. Field assembly of the supplied standby power system equipment standby generator equipment (i.e. fuel storage base tank, standby generator skid and generator enclosure) shall be performed by the supplier's field technical personnel.
5. Requirements are taken using the Kohler equipment but by no means the standard. Other brands can be used if it meets minimum requirements in the specifications and statement of changes is submitted for evaluation.

1.02 REFERENCES

- A. American Society of Civil Engineers:
 1. ASCE 7 – Minimum Design Loads for Building and Other Structures.
- B. American Society of Mechanical Engineers:
 1. B16.5 – Pipe Flanges and Flanged Fittings: NPS ½ through NPS 24 Metric/Inch Standard.
- C. ASTM International:
 1. ASTM A106/A106M – Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service.
- D. Bay Area Air Quality Management District (BAAQMD):
 1. BAAQMD Authority to Construct Permit.
 2. All applicable rules and regulations, including BAAQMD-specified Source Test Methods and Procedures.
- E. California Air Resources Board (CARB).
- F. Code of Federal Regulations (CFR):
 1. Title 40, Chapter I, Subchapter C, Part 89 – Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines.
- G. Institute of Electrical and Electronics Engineers (IEEE).
- H. National Fire Protection Association (NFPA):
 1. 30 – Flammable and Combustible Liquids Code.
 2. 37 – Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines.
 3. 70 – National Electrical Code.
 4. 110 – Standard for Emergency and Standby Power Systems.
- I. National Electrical Manufacturers Association (NEMA):

1. MG 1 – Motor and Generators.
- J. Underwriters Laboratories:
1. 142 – Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids.
 2. 2200 – Standard for Stationary Engine Generator Assemblies.

1.03 DEFINITIONS

- A. Acceptance: Formal action of the District in determining that the Vendor's work has been completed in accordance with the Contract and in notifying the Vendor in writing of the acceptability of the Work.
- B. ATS: Automatic Transfer Switch
- C. BAAQMD: Bay Area Air Quality Management District
- D. CARB: California Air Resources Board
- E. CFR: Code of Federal Regulations
- F. Contract Document(s): The words "Contract Document(s)" shall mean any or all of the following items, as applicable:
1. Vendor Agreement
 2. Technical Specifications
 3. Drawings
- G. Corporation Yard: Corp Yard
- H. District: The word "District" refers to the Estero Municipal Improvements District.
- I. District's Installation Contractor: The individual partnership, corporation, or combination thereof including joint ventures who enter into the Contract with the District for the performance of the Work. The term covers subcontractor, equipment and material suppliers, and their employees.
- J. EPA: Environmental Protection Agency
- K. FDT: Factory Demonstration Test
- L. IEEE: Institute of Electrical and Electronics Engineers
- M. ISO: International Organization for Standardization
- N. kW: Kilowatts
- O. kVA: Kilovolt-amperes
- P. Manufacturer: Equipment, material, supplies, and all other items, except labor, brought onto the site by the Contractor to carry out the Work, but not to be incorporated into the Work.
- Q. NEMA: National Electrical Manufacturers Association

- R. NFPA: National Fire Protection Agency
- S. O&M: Operations and Maintenance
- T. Others: Third Party Consultant or Contractor.
- U. P&IDs: Piping and Instrumentation Diagrams
- V. Project: The work to be performed under the provisions of the Contract.
- W. SAE: Society of Automotive Engineers
- X. SDS: Safety Data Sheet
- Y. Standby Rated Duty: Continuous operation of the supplied standby power system for the duration of any primary power source (i.e. Pacific Gas and Electric Company utility power source) outage to the Corp Yard facility.
- Z. Submittals: The information which is specified for submission to the District in accordance with the Contract Documents.
- AA. Suppliers: Any person who or which supplies materials or equipment for the Work, including that fabricated to a special design.
- BB. Suppliers Field Personnel: Any person who supplies materials or equipment for the Work, including that fabricated to a special design.
- CC. UL: Underwriters Laboratory
- DD. Work: The labor, materials, equipment, supplies, services, and other items necessary for the execution, completion and fulfillment of the Contract.

1.04 SYSTEM DESCRIPTION

- A. Supply a complete standby generator power system comprised of, but not limited to, the following equipment and accessories:
 1. Environmental Protection Agency (EPA) Tier 4 compliant diesel engine-driven generator system having a minimum standby power rating of 1,000 kilowatts (kW) / 1,250 kilovolt-amperes (kVA) with an output voltage of 480 volts, 3-phase.
 2. Base-mounted diesel fuel storage tank with minimum capacity of 3,426 gallons.
 3. Outdoor-rated, walk-in generator enclosure with sound-attenuation design.
 4. Diesel engine emissions control system including all necessary equipment, sensors and accessories required for EPA Tier 4 compliant operation and compatibility with the supplied diesel engine-driven generator equipment.
 5. Integral, radiator-mounted resistive load bank, rated 300 kW, 480 volts, 3-phase.
 6. New automatic transfer switch.
- B. The supplied standby power system equipment shall operate in conjunction with the supplied, new automatic transfer switch and existing site power distribution equipment. The new standby power system shall operate in an “open-transition”

configuration. There are no requirements for the supplied standby power system to operate in parallel with any other power supply source.

- C. The supplied equipment and accessories specified in this section shall be installed by both the supplier's field personnel and by Others as specified herein. Below is a summary of the supplied equipment installations:
1. The new diesel engine-driven standby generator system (generator), base-mounted fuel storage tank and outdoor enclosure shall be installed on and anchored to a new, outdoor concrete equipment pad. The new concrete equipment pad and anchoring of the new generator to the new pad shall be provided by Others. Final assembly of the base-mounted fuel storage tank, standby generator skid and generator outdoor enclosure shall be provided by the supplier's field personnel.
 2. The new generator shall be connected to the existing Corp Yard power distribution and control systems as specified herein and as indicated on the attached Drawings. Installation of new raceways, conductors and connection of the new generator to the existing Corp Yard power and control systems shall be provided by Others.
 3. The new diesel emissions control system (DECS) equipment and accessories shall be supplied as an integral part of the new standby generator system equipment, factory-mounted within the new generator equipment enclosure.
- D. Installation inspection, configuration, start-up and commissioning of supplied equipment and systems shall be provided by the equipment supplier as specified herein. Supplier shall provide these on-site services after all supplied equipment and systems have been installed and are ready for start-up and commissioning. Supplier shall include on-site service costs in overall equipment supply proposal based upon an estimated time frame which includes supplied equipment submittal development and review, manufacturing and procurement of all supplied equipment to the Corp Yard site and an approximate 6-month installation time frame for installation of the supplied equipment (from time of equipment delivery to the site) with all present service rate escalations included in the proposal.
- E. Consumables such as coolant, lubrication materials and filters required for start-up and commissioning of the new standby power system shall be included in the supplier's scope of supply. Initially required diesel fuel and urea fluid shall be provided by the Supplier as required to facilitate start-up and commissioning of the new standby power system.
- F. On-site training of District personnel for supplied standby power system equipment and accessories shall be provided by the equipment supplier as specified herein. Supplier shall provide this on-site training after all supplied equipment and systems have been commissioned by the equipment supplier. Supplier shall include on-site training costs in overall equipment supply proposal based upon an estimated time frame of providing the training approximately one (1) month after all supplied systems have been commissioned with all present service rate escalations included in the proposal.

1.05 MANDATORY REGULATORY REQUIREMENTS FOR STANDBY POWER SYSTEM DESIGN AND SUPPLIER

- A. Manufacturer shall furnish for the engine CARB-certification, or EPA-certification (Tier 4).
- B. Manufacturer shall furnish for the engine CARB-certified emissions data, or EPA-certified emissions data, including the following identified pollutants: nitrogen (NO_x), hydrocarbon and other organic compounds (POC), carbon monoxide (CO), sulfur dioxide (SO₂), and particulate matter (PM₁₀).
- C. The supplied engine shall be designed for, and operate exclusively with, CARB diesel fuel (see link for diesel specs: <https://ww2.arb.ca.gov/sites/default/files/2020-03/dieselspecs.pdf>).
- D. The supplied engine shall be designed for, and manufactured with, the most effective emissions control device, or best-available control technology (BACT) meeting the guidelines specified by BAAQMD (see link for determinations: [https://www.baaqmd.gov/~media/files/engineering/bact-tbact-workshop/combustion/96-1-5.pdf?la=en](https://www.baaqmd.gov/~/media/files/engineering/bact-tbact-workshop/combustion/96-1-5.pdf?la=en)).
- E. The supplied engine shall meet the requirements of BAAQMD Regulation 6-1-303 for visible emissions limitations.
- F. The supplied engine shall meet the requirements of BAAQMD Regulation 9-1-301 for sulfur dioxide emissions limitations at ground level.
- G. The supplied engine shall meet the requirements of BAAQMD Regulation 9-1-304 for allowable engine fuel requirements.

1.06 SUBMITTALS

- A. Provide submittals in electronic Adobe .pdf format. Each submittal shall be combined into an organized, bookmarked, single .pdf file, printable by the District.
- B. The new generator, sub-base fuel storage tank, generator enclosure, DECS equipment and load bank shall all be included in a single, organized, tabbed submittal, arranged with cohesive continuation references between various supplied system equipment and components.
- C. Provide a .pdf tab labeled “Notes to Reviewer” that states any exceptions, clarifications or requests for information from the District.
- D. Provide a comprehensive, itemized bill of material that matches all product data and information included for all each supplied standby power generator system and automatic transfer switch equipment..
- E. Partial submittals, poorly organized submittals without bookmarks keyed to bill of material entries or unsearchable submittals shall be rejected without review.
- F. Provide customized electrical interconnection diagrams for all supplied equipment and systems. Submittal of “generic” electrical interconnection diagrams which are

not specific to this scope of supply shall be rejected without review. Customized electrical interconnection diagrams shall include the following minimum information:

1. Depiction of all field-routed conductors that are connected to equipment provided under this scope of supply and provided by Others. Field wiring shall be depicted utilizing dashed lines.
2. Specific, unique terminal block numbers for each field conductor termination point included with equipment provided under this scope of supply.
3. Recommended size of each power and control conductor indicated on the electrical interconnection diagrams that shall be provided by Others.
4. Upstream voltage, phase and ampere rating required for each external power supply required for equipment provided under this scope of supply (e.g. generator block heater, generator battery charger, DECS equipment, etc.).

G. Submittal General Requirements:

1. Generator fabrication schedule, including anticipated factory acceptance testing dates and equipment delivery date to the project site relative to final acceptance of all submittal information.
2. Safety data sheet (SDS) for lubricant, touch-up paint, and any other chemicals supplied on this project.
3. Itemized bill of material.
4. Itemized list of extra materials furnished specifically for this project, including quantities, description, and part numbers.
5. Manufacturer's renewal parts literature and cost quotation for one year's recommended spare parts and special tools for all equipment.
6. Contact information for the Supplier's representative(s) that shall be conducting manufacturers' field services, site tests, and on-site inspections.
7. Warranty.
8. Maintenance contract: Submit options for standby generator system maintenance agreement to provide periodic routine, periodic onsite maintenance and on-call services to address equipment issues. Submittal shall clearly define proposed services, frequency of services, on-call maximum response times based upon the equipment installation location(s) and cost information for maintenance agreement. District shall review submitted information for consideration of entering into a maintenance agreement with the standby generator equipment supplier. A maintenance agreement is not included as part of this package of supply and any agreement for maintenance shall be separate from the specified scope of supply contained herein.

H. Quality Assurance Submittal Information:

1. Prototype testing results: Certification of the following prototype test results:
 - a. Use design prototypes similar to the equipment specified in this Section for testing, not the actual, supplied equipment.
 - b. Minimum prototype testing requirements:
 - 1) In accordance with NFPA 110.
 - 2) Maximum power in kW.
 - 3) Maximum starting kilovolt-ampere at 35 percent instantaneous voltage dip.
 - 4) Alternator temperature rise by embedded detector
 - 5) Governor speed regulation under steady state and transient conditions.
 - 6) Fuel consumption at 25 percent, 50 percent, 75 percent, and 100 percent load.
 - 7) Harmonic analysis, voltage waveform deviation, and telephone influence factor.
 - 8) Cooling airflow rate.
 - 9) Torsional analysis testing to verify that the generator set is free of harmful torsional stresses.
 - 10) Endurance testing.

I. Emissions:

1. Certification of EPA and BAAQMD compliance for a Tier 4 standby power system including verification of compliance of requirements specified herein.
2. Other exhaust characteristics and emissions limitations as required by BAAQMD for the supplied standby power system.

J. Certifications:

1. Certification of the emissions performance of the engine by the engine manufacturer. Include the EPA certificate of conformity with the Clean Air Act for the model year and engine family of the engine specified in this Section.
2. Certified torsional vibration analysis between the engine and generator as required by NFPA 110, 5.6.10.2.
3. Seismic qualification certification:
 - a. Seismic qualification certification for the overall diesel engine-driven generator set, fuel storage base tank, standby generator enclosure, engine starting batteries and battery rack, accessories, and factory-supplied components, in accordance with the seismic design parameters listed in Article 1.06 – Quality Assurance.
4. Certification of equipment by Underwriters Laboratory (UL) or other equivalent nationally recognized independent testing laboratory.
5. Factory certification of the radiator capacity at the specified ambient conditions.

6. Certified production test reports for battery chargers.
7. Upon completion of installation of the standby power system, the Supplier shall issue a certification of compliance for the system installation performed by Others following an on-site inspection by supplier's field technical personnel. This certification shall confirm that the equipment installation performed by Others has been properly installed for all supplied systems and that the standby power system is ready for final commissioning and acceptance.

K. Shop Drawings:

1. Provide detailed dimensional and to-scale plan and section drawings for the proposed skid-mounted generator system that includes the following minimum information:
 - a. Length, width and height dimensions, stated in inches for fully-assembled fuel storage base tank, generator equipment skid and generator enclosure.
 - b. Dry and wet weights, in pounds, of complete, assembled standby power system package that includes skid-mounted fuel storage base tank, generator equipment skid and outdoor enclosure.
 - c. Provide a rigging diagram that indicates the location and lifting capacity of each lifting attachment and center of gravity for fuel storage base tank, generator equipment skid and generator enclosure.
 - d. Electrical conduit stub-up and equipment entry locations.
 - e. Piping and instrumentation diagrams (P&IDs).
2. Electrical Drawings: In addition to customized interconnection diagrams specified herein, the following system-specific electrical drawings shall be submitted for review:
 - a. AC schematic diagrams.
 - b. DC schematic diagrams.
 - c. Communications diagram.
 - d. Engine control schematic diagrams.
 - e. Supplied standby power system package wiring diagrams.

L. Engine:

1. Number of cylinders, bore, stroke, and piston speed.
2. Displacement in cubic inches.

3. Compression ratio.
 4. Engine RPM at 60 hertz.
 5. Combustion air flow rate required.
 6. Cooling air flow rate required.
 7. Size of exhaust outlet.
 8. Exhaust flow rate and temperature at full rated load.
 9. Gauges, including description of value indicated and indicating ranges and units.
 10. Jacket water heater quantity, power consumption per unit, and voltage and phase (i.e., single or three-phase) for each unit.
 11. Type and grade of fuel oil recommended.
 12. Fuel oil consumption at 25 percent, 50 percent, 75 percent and 100 percent of rated engine-generator system nameplate maximum power output.
 13. Type and grade lubricating oil recommended.
 14. Amount of lubricating oil required per oil change.
 15. Normal lubricating oil consumption rate.
 16. Recommended lubricating oil change periods stated in both runtime hours and calendar days.
 17. Time interval from start-up contact closure until full load capabilities are available.
 18. Engine-generator system acceptable ambient temperature operating range.
- M. Governor: Manufacturer, model, and engine speed governing accuracy.
- N. Radiator information.
- O. Emissions:
1. After installation and start up of the new standby power system, the District shall retain the services of an independent, certified, source testing firm for the performance an emissions source test on the standby power system using methods as required by BAAQMD Authority to Construct. The retained firm shall perform this testing and shall comply with all related requirements, including test methods, time periods, and reporting. The supplier scope of

supply shall include all costs required for making on-site modifications and adjustments to the complete, installed, operating standby power system for compliance with the BAAQMD requirements until acceptable testing results are obtained by the District's retained testing firm.

2. Emission testing data shall be gathered at rated speed and load as measured by Society of Automotive Engineers (SAE) J177 and J215 or International Organization for Standardization (ISO) 8178 recommended practices.

P. Silencer:

1. Silencer grade, overall dimensions and weight.
2. Silencer noise attenuation curves.
3. Supplier shall provide all necessary information and data including, but not limited to, piping, fittings, silencer, and rain cap.
4. Exhaust system loss calculations.
5. Free field mechanical noise level at 23 feet. Provide overall decibels (dBA) referenced to 20 μ Pa.
6. Exhaust sound level in dBA 5 feet from the discharge end of silencer.

Q. Synchronous Generator:

1. Maximum rated kilowatt (kW) output.
2. Maximum rated kilovolt-ampere (kVA) output and power factor.
3. Rated voltage and phase.
4. Maximum rated output current.
5. Number of poles and synchronous speed.
6. Number of leads and wires per lead.
7. Winding pitch.
8. Stator and field ratings including temperature rise at full and overload conditions.
9. Insulation system: include insulation class, stator temperature rise, rotor temperature rise, heat dissipation (kW), and required air flow (m^3/min).
10. Impedances (provide in per unit with base values or in ohms):
 - a. Stator winding (armature) resistance (R_a).

- b. Field winding resistance.
 - c. Synchronous reactance - direct axis (X_d).
 - d. Synchronous reactance - quadrature axis (X_q).
 - e. Transient reactance – direct saturated (X'_{ds}).
 - f. Subtransient reactance - direct axis (X''_d).
 - g. Subtransient reactance - quadrature axis (X''_q).
 - h. Negative sequence reactance (X_2).
 - i. Zero sequence reactance (X_0).
11. Time Constants:
- a. Open circuit transient – direct axis (T'_{d0}).
 - b. Short circuit transient – direct axis (T'_d).
 - c. Open circuit subtransient – direct axis (T''_{d0}).
 - d. Short circuit subtransient – direct axis (T''_d).
 - e. Open circuit subtransient – quadrature axis (T''_{q0}).
 - f. Short circuit subtransient – quadrature axis (T''_q).
 - g. Exciter time constant (T_e).
 - h. Armature short circuit (T_a).
12. Short circuit ratio of the field current required for rated open circuit voltage to the field current required for rated short-circuit current.
13. Generator excitation voltage and excitation current at no load and full load.
14. Generator overtemperature protection: Per equipment manufacturer's recommendations with corresponding shutdown alarm for generator overtemperature.
15. Generator center of gravity, stator weight, rotor weight, rotor balance, and overspeed capacity.
16. Generator torsional data model including the coupling and fan, generator rotor, and exciter end.

17. I^2t or K (heating time constant).
 18. Voltage and frequency variation and duration with load step application and removal of 25 percent, 50 percent, 75 percent, and 100 percent of resistive load based on maximum kW rating.
 19. Generator efficiency at 25 percent, 50 percent, 75 percent, and 100 percent of load based on maximum kW rating.
 20. Capability Curves:
 - a. Motor starting capability – percent voltage dip versus starting kVA.
 - b. Current decrement curves for an instantaneous three-phase fault, instantaneous line-line fault, and instantaneous line-neutral fault.
 - c. Open circuit curve – line-line voltage versus field current.
 - d. Short circuit curve – armature current versus field current.
 - e. Zero power factor curve – line-line voltage versus field current.
 - f. Air gap curve – line-line voltage versus field current.
 - g. Reactive capability curve operating chart – kW versus kVAR showing leading and lagging quadrants and engine limit line.
 - h. Short-time overload curve – percent rated armature current versus time for Class H insulation.
 - i. Certified published engine horsepower curves showing manufacturer's engine rating for generator set standby and prime power application.
 21. Anti-condensation space heater kilowatt, voltage, and phase requirements for all anti-condensation space heaters supplied (e.g. generator space heater(s), battery system space heater(s), block heater(s), etc.).
- R. Voltage Regulator: Manufacturer, model, and generator voltage regulating accuracy.
- S. Generator equipment skid-mounted local controls/control panel:
1. Control panel dimensions, conduit entry details, and NEMA rating.
 2. Generator monitoring and protection features.
 3. Engine monitoring and protection features.
 4. Control features.

5. Signal input/output (I/O) provisions.
 6. Communications provisions.
 7. Modbus register map.
- T. Skid-mounted generator batteries and associated battery charger:
1. Include battery charger maximum power requirement, supply voltage and phase, and physical dimensions of batteries and charger proposed.
 2. Batteries and accessories.
 3. Battery rack.
 4. Battery charger and accessories.
 5. Spill containment systems.
- U. Testing:
1. Manufacturer's test procedures, checklists, and test forms.
 2. Certified factory test reports for:
 - a. Engine-generator set.
 - b. Battery charger.
 - c. Engine-generator factory testing:
 - 1) 0.8 pf generator set test report, tested at full load and no load.
 - 2) Alternator test sheet.
 - 3) Static, transient, and 8-hour load test report.
 - d. The corrective item punch list developed during factory testing with a point-by-point description of how each punch list comment was addressed.
 3. Following complete installation of the supplied standby power system by Others, supplier's field technician(s) shall provide the following on-site testing services to provide certified field test reports:
 - a. Alignment and end play.
 - b. Load tests with the supplied resistive load bank.
 - c. Vibration tests.

- d. Engine backpressure test.
 - e. Integrated standby power system tests to confirm proper standby power system functional operation with the Corp Yard power distribution system.
- V. Product data and system integration information for the equipment and components which comprise the diesel emissions control system (DECS) and the associated field installation and connection to the supplied standby generator equipment. Required information includes, but is not limited to, the following:
- 1. Converter housing shop drawings.
 - 2. Monitoring system.
 - 3. General DECS equipment and component arrangement within the generator enclosure including dimensions.
 - 4. Electrical and mechanical interconnection diagrams for connection of the DECS equipment and components to the standby generator equipment.
 - 5. Manufacturer's emissions and performance data showing input emissions (from engine) and output emissions (from catalyst system) for all targeted emissions, including pressure drop and urea consumption rates at full-rated output of the standby generator.
 - 6. DECS system performance data sheet indicating guaranteed exhaust emission data that is in compliance with BAAQMD requirements at 100% generator loading for the following:
 - a. Nitrogen Oxide (NO_x).
 - b. Carbon Monoxide (CO).
 - c. Non Methane, Non Ethane Hydrocarbons (NMNEHC).
 - d. Formaldehyde (CH₂O).
 - e. Ammonia (NH₃) slip.
 - f. Particulate Matter (PM).
- W. Resistive Load Bank:
- 1. Product data indicating specific model number and features proposed.
 - 2. Operating voltage, phase and kW rating.
 - 3. Local and remote control features.
 - 4. Electrical interconnection diagrams.

- X. Operation and Maintenance (O&M) Manuals: General format and configuration of O&M manuals shall comply with the following:
1. A minimum of four (4) weeks prior to delivery of the new standby system equipment to the project site, Supplier shall submit O&M manual information for review.
 2. O&M manuals shall be submitted for review in electronic .pdf format. After District acceptance of O&M manuals, final O&M manuals shall be submitted in both electronic .pdf format along with four (4) hardcopy sets of manuals, provided in three-ring binders.
 3. O&M manuals shall include the following minimum information:
 - a. Operating instructions and a maintenance manual presenting full details for care and maintenance of all equipment comprising the complete standby power system.
 - b. Detail the operational functions of all standby power system controls, indicators and alarms.
 - c. Include standard equipment operational manuals normally furnished by the manufacturer to supplement the customized operational instructions and information specific to this project's scope of supply.
 - d. Installation guidelines for the DECS converter housing, catalyst, filter and control system.
 4. Maintenance Manual:
 - a. Instructions covering all details pertaining to care and maintenance of all supplied standby power system equipment as well as data identifying all parts.
 - b. These manuals shall include, but are not limited to, the following:
 - 1) Adjustment and test instructions covering the steps involved in the initial test, adjustment, and start-up procedures.
 - 2) Detailed control instructions, which outline the purpose and operation of every control device used in conjunction with operating the standby power system.
 - 3) Complete set of "As Built" custom electrical and mechanical integration shop drawings in AutoCAD 2016 format.
 - 4) Provide two (2) shop manuals to the District that are identical to the manuals used by manufacturer-authorized shop repair personnel. At minimum, provide shop manuals for the supplied engine, radiator, generator and engine-generator local controls/control panel.

- Y. Training plan and schedule: Include a minimum of two (2) on-site training sessions by supplier's technical field personnel to occur on non-consecutive days. Each training session shall include the complete supplied standby power system equipment including the standby generator, DECS equipment and load bank equipment.
- Z. Automatic Transfer Switch Submittals: As specified in paragraph 2.15 herein.

1.07 QUALITY ASSURANCE

- A. A single supplier shall provide all equipment and components which comprise the standby power system scope of supply specified herein.
- B. Standby generator manufacturer shall have a minimum of 25 years of experience in the manufacture and production of 480V diesel engine-driven standby generator equipment with no less than ten (10) similar generator units that are in operation that have been installed within the last five (5) years.
- C. Supplier shall have no less than ten (10) similar rated (i.e. 1,000 kW to 2,000 kW) generator units that are in operation that have been installed within the last five (5) years which include the proposed diesel emissions control system (DECS) configuration for overall standby power system compliance with EPA Tier 4 and BAAQMD requirements.
- D. Generator set shall be manufactured to the applicable specifications on file with UL and labeled with the UL 2200 mark.
- E. To the maximum extent possible, all electrical components, devices, and accessories shall be listed or labeled by Underwriters Laboratories or other equivalent nationally recognized testing laboratory.
- F. Seismically Qualified Equipment:
 - 1. Provide certification that the diesel engine-driven generator is seismically qualified by an approved shake table testing report following the requirements in Section 13.2 of ASCE 7-16.
 - 2. The skid-mounted battery rack shall be qualified for use in high seismic loading as defined in IEEE Std 693-2005 (i.e., "IEEE-693 High"), for in-service installation anchored in accordance with the supplier's accepted seismic anchorage calculations.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Standby power system supplier shall be responsible for the transport and delivery of all system equipment and components to the following location:

Foster City Corporation Yard
100 Lincoln Centre Drive
Foster City, CA 94404

District Contact Information:

Frank Schoening

Phone: (650) 286-3550

- B. Delivery by the system equipment supplier shall include provisions which facilitate offloading the standby power equipment from the delivery truck to on-site location as specified herein. Supplier shall be responsible for coordinating all delivery scheduling, hoisting equipment recommendations and recommended personnel required at the delivery site for offloading of the standby power system equipment with the District as specified herein and as required.
- C. Equipment shall not be shipped to the site until:
 - 1. Certified factory test reports, including the corrective item punchlist developed during the factory demonstration test, have been approved by the District or
 - 2. The District inspector authorizes release for shipping at the factory demonstration test.
- D. The Supplier shall schedule and coordinate off-loading of the standby power system equipment at the project site with the District for each delivery date required to encompass complete delivery of all system equipment and components:
 - 1. Lifting equipment required for offloading equipment at the project site shall be provided by Others based upon recommendations provided by the equipment supplier as specified herein.
 - 2. Furnish all standby power system equipment with removable lifting and jacking angles, eyebolts, etc., attached to equipment structural framing and/or bases to facilitate unloading and move-in operations.
 - 3. Include provisions on equipment skids for the use of "Multiton" type rollers for moving the equipment skid into position and then removal of the "Multiton" rollers for setting the equipment skid in place.
- E. Ship equipment, material, and spare parts complete except where partial disassembly is required for transportation or for protection of components.
- F. The Supplier shall protect and securely pack the equipment for the environmental conditions during transit to the jobsite.
- G. Ship the packaged diesel-engine driven generator as complete as possible, with the latest revision of the bill of material. Minimize the number of components removed for shipping or sent loose for field reassembly.

1.09 PROJECT CONDITIONS

- A. Ambient Temperature: -15 degrees Celsius to 50 degrees Celsius.
- B. Relative Humidity: 0 to 95 percent.
- C. Altitude: Sea level.

1.10 SEQUENCING

- A. Complete factory prototype and factory production tests in accordance with NFPA 110 before shipping the equipment to the project site.
- B. Supplier shall coordinate with the District for delivery date(s) for each specific date that a portion of the standby power system equipment is planned for delivery to the project site no less than eight (8) weeks prior to planned delivery date. Final delivery date(s) shall be mutually agreed upon between the supplier and the District before delivery date(s) are finalized.

1.11 WARRANTY

- A. Provide minimum five (5) year system supplier's warranty valid from date of final acceptance by the District. Final acceptance shall occur after final installation is completed by the District's installation Contractor and the complete standby power system successfully passes an on-site acceptance test in accordance with NFPA 110, 7.13, operated in conjunction with the Corp Yard power distribution system and Corp Yard control system. The supplier shall assume that Final Acceptance of the system shall occur within six (6) months after delivery of all standby power system equipment and components to the project site.
- B. The warranty shall include all repair parts, labor, travel expenses of manufacturer's technician to the installation site, and expendables (i.e., lubricating oils, filters, antifreeze and other service items made unusable by the defect).
- C. Base the warranty on 500 hours of run time per year.
- D. The warranty shall include a manufacturer-supplied, temporary, portable standby generator unit and associated temporary interconnection cabling to serve as a temporary standby generator unit should warranty period repairs require more than 48 hours to accomplish. Temporary generator rating shall match that for the supplied new standby generator equipment. Supplier shall be responsible for all costs including mobilization of the equipment to and from the project site and all labor and materials required to connect the temporary generator to the Corp Yard power and control systems.

1.12 COMMISSIONING

- A. The supplier shall provide on-site services of technical installation and start-up personnel that are certified by the specific equipment manufacturer for the installation, pre-startup inspection, initial start-up and commissioning of all new standby power system equipment and components.
- B. The supplier shall provide written certification that the complete standby power system has been successfully commissioned and is ready to be placed into normal operation once all on-site commissioning tasks have been successfully completed and all corrective punchlist items have been addressed and resolved.

1.13 TRAINING

- A. Each training session specified herein shall be organized as follows:

1. Introduction:
 - a. Single-line diagram overview to familiarize participants with the facility's electrical distribution system.
 - b. P&ID drawing overview to familiarize participants with the fuel storage, supply, and return system.
2. Review of the O&M Manual:
 - a. Overview of each binder section in the O&M manual.
 - b. Key drawings that indicate power flow, overall switchgear arrangement, and switchgear control.
 - c. Include discussion of how and where to order renewal parts, procedures for initiating warranty work, and manufacturer contact information.
3. Classroom training topics:
 - a. Discussion of diesel engine-driven generator components and their functions.
 - b. Safety precautions.
 - c. Operation.
 - d. Inspection and maintenance.
 - e. Cleaning and lubrication.
 - f. Fluid recommendations.
 - g. Procedures for proper storage for the engine and the generator during periods when the engine-driven generator set is out of operation for extended periods.
 - h. Precautions for operation at partial load.
 - i. Troubleshooting guide, with specific trouble item, possible causes, and suggested corrective actions.
4. Hands-on exercises:
 - a. Visually identify engine-driven generator components and understand their functions.
 - b. Demonstrate engine control panel use, including manually starting the engine, menu navigation, fault acknowledgment, and emergency stop.
 - c. Demonstrate battery charger control panel use, including menu navigation and fault acknowledgment.

- d. Demonstrate how to change air, fuel, and oil filters.
- e. Demonstrate how to relieve pressure from fuel and oil lines prior to maintenance.
- f. Demonstrate procedures for initial startup after a period of non-operation.
- g. Demonstrate each of the manufacturer's recommended daily, weekly, every 300 service hours, every 6 months, and every year maintenance activities described in the O&M manual.

1.14 MAINTENANCE

A. Extra materials:

1. Box or package extra materials for long-term storage. Identify each item with manufacturer's name, description and part number on the exterior of the package.
2. Provide specialty tools necessary for routine maintenance of the equipment. Special tools are those that only the manufacturer provides, for special purposes, or to reach otherwise inaccessible parts.
3. Furnish the following extra materials:
 - a. Three sets of lube oil filters, fuel oil filters, and gaskets.
 - b. Two sets of air filters.
 - c. Two fuses (for each control and power circuit).
 - d. One set of crankcase breather filters, when used.
 - e. Generator manufacturer's PC-based software for connection to the engine-mounted control panel.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. The following list of manufacturers is based on general capability of a single supplier to manufacture and supply engine-generator, diesel emissions control system and load bank equipment and components to provide an EPA Tier 4 and BAAQMD compliant standby power system as a custom-integrated, complete system. This list makes no statement as to the capability of the listed manufacturers to meet the Contract Document requirements. The burden of proof of conformance with the Contract Documents lies with the Supplier. Custom-integrated, complete standby power system shall be supplied by one of the following:

1. Kohler.
2. Caterpillar.
3. Cummins.

2.02 ENGINE GENERATOR EQUIPMENT

- A. Characteristics of assembled skid-mounted engine-generator unit provided:
1. Engine-driven generator consists of a diesel engine directly coupled to an electric generator providing electric power.
 2. Each engine shall start, attain full speed, voltage, and assume full load within a maximum of 10 seconds, with jacket water at 85 degrees Fahrenheit.
 3. Furnish each engine-driven generator on a steel sub-base to support engine, generator and accessories as a single unit:
 - a. Base: Welded construction.
 - b. Engine direct connected through a flexible coupling to a single bearing generator.
 - c. System free of injurious torsional and bending vibrations within a speed range from 10 percent below to 10 percent above synchronous speed.
 - d. Engine-driven generator balanced such that the peak-to-peak amplitude of vibration velocity in any direction does not exceed the engine or generator manufacturer's published limits.
 - e. If shims are required under the feet of the generator for alignment purposes, use 1-piece laminated shim stock that covers at least 90 percent of the foot.
 - f. Supply a complete assembled engine-driven generator skid requiring only field electrical and mechanical connections.
 4. Connections to engine-driven generator skid:
 - a. Flexible connections are required on all connections to the engine generator.
 - b. Flexible connections include but are not limited to:
 - 1) Exhaust.
 - 2) Fuel lines.
 - 3) Radiator discharge air ductwork.

- c. The length of all flexible connections to exceed the flexible connector manufacturer's minimum length recommendations for the diameter used and for the misalignment as measured after installation.

B. Generator system performance requirements:

1. Standby power output ratings:
 - a. 1,000 kilowatts, minimum.
 - b. 480/277 volts.
 - c. 0.8 power factor.
 - d. 3-phase, 4-wire, 60 hertz.
 - e. In accordance with NEMA MG-1 temperature rise limits.

C. Engine Requirements:

1. Engine Type: 4-Stroke Cycle, turbocharged, intercooled.
2. Maximum Rotational Speed: 1,800 rpm.
3. Minimum Piston Displacement: 1,648 cubic inches.
4. Main Bearings: Minimum of five, replaceable insert type.
5. Cooling: Liquid cooled with engine driven coolant pump.
6. Fuel Type: Meet specifications when operating on Number 2 diesel fuel oils meeting the requirements of the BAAQMD; engines requiring premium fuels shall not be considered.
7. Emissions: Meet the requirements of EPA Tier 4 and BAAQMD when operated in conjunction with the supplied diesel emissions control system (DECS).
8. Air filters: Replaceable dry element type with dirty condition differential pressure indicator.
9. Lube oil filters: Cartridge type.

D. Governor: Electronic, digital type to regulate engine speed within 0.25 percent at any constant load from no load to full load.

E. Generator Requirements:

1. Type: Synchronous, 4-pole, rotating field.
2. Exciter Type: Brushless, permanent magnet.
3. Leads: Quantity of twelve (12), re-connectable.

4. Insulation: Class H, 130 degrees Celsius temperature rise per NEMA MG1.
5. Bearing: Sealed type.
6. Coupling: Flexible disc.
7. Amortisseur Windings: Full.
8. Voltage Regulation: $\pm 2\%$ average, no-load to full-load.
9. One-Step Load Acceptance: 100% of rating.
10. Unbalanced Load Capability: 100% of rated standby current.
11. NEMA MG1, IEEE, and ANSI Standards compliance for temperature rise and motor starting.
12. Capable of sustained short circuit current up to 300% of rated current for 10 seconds.
13. Self-ventilated, drip-proof construction.
14. Vacuum impregnated windings with fungus-resistant epoxy varnish.

2.03 COOLING SYSTEM

- A. Liquid-cooled, rated for continuous operation with a maximum ambient temperature of 50 degrees Celsius.
- B. Engine-driven fan.
- C. Radiator: Mounted on the engine skid.
- D. Coolant Solution: Provide solution of 50 percent ethylene glycol and softened water; add chemical water conditioner as recommended by the engine manufacturer.
- E. Jacket Water Heater: Sized to maintain engine jacket water to 90 degrees Fahrenheit for an ambient temperature of 0 degrees Celsius.
- F. Radiator Hoses: Provide premium, oil resistant hoses of Viton or silicone rubber carcass with reinforcing fabric; assembly to be suitable for a minimum service temperature of 250 degrees Fahrenheit.

2.04 FUEL SYSTEM

- A. Subbase Fuel Tank: Provide a subbase fuel tank meeting the following:
 1. Provide UL listed tank with secondary containment rupture basin.
 2. Construction: Reinforced steel channel system with minimum thickness of 7 gauge for channels and 12 gauge for tank construction.

3. Provide tank baffle to separate hot fuel return from cooler supply fuel.
 4. Provide the following connections:
 - a. 1.25 inch minimum vent; CONTRACTOR to pipe vent to outside any room or enclosure containing the generator set; use schedule 40 black steel pipe for vent.
 - b. 2 inch minimum fill connection.
 - c. 2 inch minimum fuel storage level gauge.
 - d. 1.25 inch minimum low fuel level alarm; provide level switch and connect to control panel.
 - e. 0.5 inch minimum fuel supply with dip tube.
 - f. 0.5 inch minimum fuel return with dip tube.
 5. Provide rupture basin level switch and alarm.
 6. Provide interior coating system as recommended by the manufacturer.
 7. Provide exterior coating as recommended by the manufacturer.
- B. Fuel Filters: Size filters for 10 percent above the engine fuel pump capacity:
1. Provide water/fuel separator.
 2. Provide primary fuel filter.
 3. Provide secondary fuel filter.
- C. Engine Fuel Pump: Provide engine-driven fuel pump.
- D. Minimum Subbase Fuel Tank Storage Capacity: 3,426 gallons.

2.05 EXHAUST SYSTEM

- A. Exhaust Piping:
1. Type: Schedule 40 high temperature black steel pipe conforming to ASTM A106.
 2. Drainage: Slope piping to a drain point and provide drain plug.
- B. Exhaust Expansion Joints:
1. Type: Metal with convoluted portion of 0.038 inch thick Type 321 stainless steel; non-convoluted portions of expansion joint to be Type 304 stainless steel, Schedule 10S pipe; provide flanged ends with ASME B16.5, Class 150 bolt hole drilling.

2. Length: Minimum of 18 inches in length.
3. Movement: Rated for a minimum of 1 inch lateral movement, and 1/2 inch axial movement; rated movement defined as plus or minus travel from neutral or free position.
4. Design Life: Infinite cycle life with 1,200 degrees Fahrenheit exhaust, no insulation over the expansion joint, and continuous duty service.
5. Insulation: Insulate expansion joints with custom fitted, removable with reusable fastening system, ceramic fiber insulation blankets enclosed between inner and outer high temperature fabric cover rated for 1,200 degrees Fahrenheit continuous duty; do not insulate expansion joints directly connected to turbocharger outlet.

C. Exhaust Silencer:

1. Type: Heavy duty industrial type fabricated of welded steel with ported tubes and snubbing chambers, and a rating meeting the specified sound attenuation.
2. End Connections: Steel flanges with Class 150 pound drilling pattern.
3. Shell: Sufficiently heavy and reinforced to eliminate excessive vibration, stress or deflection and to support all operating loads with the silencer at elevated temperatures and insulated as specified; loads include insulation weight and connecting piping.
4. Drain: Provide threaded, plugged condensate drain.
5. Sound Attenuation: Attain the following minimum sound attenuation at the listed octave band center frequencies with the engine at full load:

Frequency (Hz)	63	125	250	500	1,000	2,000	4,000	8,000
Attenuation (dB)	39	42	42	40	38	38	38	38

2.06 WEATHERPROOF ACOUSTICAL HOUSING

- A. Type: Provide aluminum walk-in type engine-generator enclosure to protect engine, generator, starting system, batteries and other specified accessories from weather exposure. Enclosure shall meet specified seismic criteria and wind gusts up to 100 mph.
- B. Enclosure shall be designed to allow easy maintenance and fitted with 316 stainless steel lockable latches, hinges and door hardware.
- C. Finishing: Enclosure shall be provided with manufacturer's recommended highest quality available coating option for usage in locations subject to sea air.
- D. Noise Reduction: Provide acoustical insulation and acoustical enclosure ventilation louvers and fan discharge silencers as necessary to achieve a maximum measured

sound pressure level (dBA) of 70 dBA when measured at 23 feet from the enclosure; protect acoustical insulation with perforated metal covers and plastic bagging to prevent damage from abrasion or weather elements.

- E. Provide interior of enclosure with 480-120/240V step-down transformer, 120/240V panelboard, LED lighting, lighting switches and GFCI receptacles. Step-down transformer shall be supplied from the Corp Yard power distribution system with connections between step-down transformer and Corp Yard provided by Others.
- F. Two (2) lockable personnel doors with panic release.

2.07 ENGINE – GENERATOR CONTROL SYSTEM

- A. Manufacturer: Control system shall be generator system manufacturer's recommended standard, mounted within interior of engine generator weatherproof enclosure.
- B. Switches, Alarms and Monitors: Provisions for external, hardwired signal connections for automatic starting/stopping and minimum of ten (10) dry contacts for remote alarm and status signals related to the engine generator system. Three (3) of the ten (10) programmable dry contacts shall be factory-programmed for the following remote signal connections to the pump station control system:
 - 1. Generator Running indication.
 - 2. Generator Failure alarm.
 - 3. Low Fuel Level alarm.
 - 4. Generator Ready (In Auto) indication.
- C. Remote starting and of the standby power system generator shall be provided from the new, supplied Corp Yard automatic transfer switch (ATS) via a normally-open dry contact located at the ATS. When the standby power system is in the "Automatic" mode, closure of the normally-open, remote ATS contact shall start the generator and it shall continuously operate until the remote ATS contact opens. Upon opening, the generator shall enter cool-down mode.
- D. Fuel level (high and low level), fuel level indication (in gallons) and fuel tank leak alarm shall be factory-wired to the manufacturer's control panel with the capability to program the remote dry contacts for the alarm signals.
- E. Control panel shall be provided with Ethernet communication provisions for transmission of programmed status and alarm signals to the District's remote SCADA system via the Ethernet communication. A Modbus TCP/IP to Ethernet IP converter shall be provided as required within the generator control panel. Specific alarm and indication signals transmitted via the Ethernet communication shall be as directed by the District during the initial configuration, start-up and commissioning of the supplied standby power system.
- F. On-Board Circuit Breaker: Provide generator with a main line, skid-mounted molded-case circuit breaker, 3-phase, 480 volts, 100% rated, rated 65kAIC minimum with continuous ampacity rating as recommended by the Supplier for

continuous, full-load operation of the engine generator unit. Circuit breaker shall be provided with an electronic trip unit with long-time and short-time field-adjustable settings.

2.08 STANDBY POWER SYSTEM OPERATION

- A. Provide control devices and logic to sequentially start, operate, control, test, and stop the generator system as described. Coordinate control system design so that upon receipt of a remote, hardwired “Run” command from the District’s facilities (i.e. normally-open dry contact held closed when “Run” signal is activated), power is automatically supplied by the generator and upon loss of the remote “Run” signal, the generator system shall automatically enter its cool-down mode and shut down upon expiration of cool-down.
- B. Engine Start Sequence:
 - 1. Engine shall not start if any of the safety shutdown circuits have been tripped and not cleared and reset.
 - 2. Automatic Engine Start Sequence:
 - a. Initiated by a remote signal from the Corp Yard facilities.
 - b. Starter Motor: Automatically crank the engine for adjustable times.
- C. Emergency Shutdown Sequence: Engine shall shutdown immediately if the emergency stop button is activated, or any of the specified shutdowns activate.
- D. Normal Shutdown Sequence: Local “Stop” signal or loss of remote “Run” signal shall cause the engine to run unloaded for an adjustable cool-down period and then stop.

2.09 STANDBY GENERATOR EQUIPMENT SKID

- A. Skid Requirements: Mount the engine, generator, radiator and specified accessories on a common heavy-duty fabricated steel skid.
- B. Skid Construction: Fabricated steel skid to consist of a rigid welded frame of wide flange members or rails on each side.
- C. Vibration Isolators: Mount skid on spring or rubber-type isolators having telescopic top and bottom housing with vertical stabilizers to resist lateral and vertical forces.
 - 1. Isolator Construction: Shatterproof ductile iron in accordance with ASTM A 536, Grade CS-45-12.

2.10 ACCESSORIES

- A. Starting System: Provide 24 volt direct current electric starting system with positive engagement drive.

1. Batteries: Provide a 24 volt absorbent glass mat (AGM) battery set of the heavy-duty diesel starting type; sufficient capacity for a minimum of 120 seconds total cranking time without recharging.
 2. Battery Rack: Provide a battery rack with necessary cables and clamps; provide a cover constructed of aluminum angles and mesh to prevent dropped items from touching the battery poles; provide latches to allow quick removal of the cover from the rack.
 3. Battery Charger: Provide UL approved current limiting battery charger to automatically recharge the batteries:
 - a. Charger to float at 2.17 volts per cell and equalize at 2.33 volts per cell.
 - b. Provide charger overload protection.
 - c. Charger to have silicon diode full wave rectifier, voltage surge suppressors, direct current ammeter, direct current voltmeter and fused alternating current input.
 - d. Amperage Output: Not less than 10 amperes.
- B. Guards: Provide equipment guards as recommended by the Supplier.
- C. Crankcase Breather Filter:
1. Provide crankcase ventilation system with coalescing filter/trap for blowby; coalescing filter to be replaceable.
 2. When engine manufacturer recommends an open crankcase breather system route outlet of breather filter to outside at 3 inches above grade and away from engine components; provide on breather outlet Nelson "EcoVent" or equal, sized to match engine breather flow.
 3. When engine manufacturer recommends a closed crankcase breather system provide integral crankcase pressure regulator with an automatic internal filter bypass and bypass indicator; unit to be Racor Model CCV 4500 or equal.

2.11 DIESEL EMISSIONS CONTROL SYSTEM (DECS)

- A. The supplied standby power system shall be furnished with a catalytic reduction system to reduce engine exhaust emissions in compliance with EPA Tier 4 and BAAQMD requirements. The supplied system shall meet the limits required for the power rating of the engine at 100% load.
- B. Catalytic Reduction Systems for Engine Exhaust: Provide integrated passive diesel particulate filter (DPF), diesel oxidation catalyst (DOC) and selective catalytic reduction (SCR) system by the following manufacturer or equal:
 1. Miratech.
 2. Johnson Matthey.
 3. Safety Power.

C. General: The scope of supply shall include all required equipment and components connected to the supplied engine-generator equipment.

D. Housing:

1. Designed to contain a complete DPF/DOC/SCR integrated catalyst reactor housing with racks/tracks for DPF, SCR, and DOC catalyst material to meet PM, NO_x, CO, and VOC performance specifications. The housing shall be a rigid structure, which will not warp or deform significantly during normal operation.
2. The housing shall be complete with inlet and outlet transition sections designed for bolting to the exhaust gas ductwork. The reactor shall be provided with an integrated mounting base so that the housing itself is isolated from vibration and can accommodate thermal expansion. Four (4) lifting lugs, two (2) on each side shall be provided for ease of handling.
3. Equipped with access doors to the catalyst. The doors shall be easily removed without the assistance of lifting equipment and be on top or the side of the housing and shall provide access to each layer of catalyst without removal of any adjacent catalyst.
4. Shall be provided with internal catalyst support structure and perforated plates or other flow dispersion method.
5. Shall provide instrumentation ports for differential pressure and temperature upstream and downstream of the catalyst beds.
6. The Urea Mixing Section should be fully integrated within the housing and should be of adequate length to achieve proper mixing and hydrolysis. The Mixing Section shall contain the necessary static mixers, flow straighteners, and other devices as specified by the Manufacturer to achieve proper urea hydrolysis and mixing.

E. Passive Diesel Particulate Filter (DPF) Modules:

1. The filter media shall be extruded, porous mullite material blocks with square monolithic channels (honeycomb structure). Each channel shall be plugged on one end only, with adjacent channels plugged on opposite ends, such that flow must pass through the walls between adjacent channels.
2. The blocks shall have a square cross section, so that they can be stacked easily. They shall be approximately 150 mm x 150 mm in cross section and 300 mm in depth.
3. The blocks shall be coated with a catalyst material to lower the exhaust temperature required for regeneration to 500°F/260°C.
4. Particulate regeneration shall not be dependent on NO_x:PM or NO:NO₂ ratios in the exhaust.

F. Diesel Oxidation Catalyst (DOC):

1. The DOC substrate shall consist of alternating corrugated layers of stainless steel alloy foil that is layered, stacked and electronically resistant welded. The channels shall provide a high surface area and multiple turbulent zones without causing excessive exhaust back pressure.
2. The catalytically active materials shall be a precious metal coating on the DOC that is made from a combination of Platinum Group Metals selected by the manufacturer.
3. A single high temperature fiberglass gasket shall be wrapped around the element to seal it within the housing. The top surface of the sealing plate shall be sealed against the door when it is installed.
4. The catalyst substrate and metal foil shall not sinter or degrade when exposed to exhaust inlet temperature up to 1,250°F (677°C).
5. To facilitate maintenance, the catalyst(s) must be removable via bolt-on access doors.

G. Selective Catalytic Reduction (SCR) Catalysts:

1. SCR Catalyst shall be extruded, ceramic blocks with square monolithic channels (honeycomb type). The catalyst material shall be mixed into the substrate prior to extrusion. The catalyst material composition shall be tungsten, vanadium, titanium and other base metals. The catalyst shall have a proven track record in similar applications.
2. Shall be shop assembled with a high temperature fiberglass gasket material. The modules should be approximately 150mm x 150mm in cross section and 150, 300 or 450mm in depth for ease of field installation and removal from the reactor housing.
3. Shall have a continuous operating range of 572°F to 977°F / 300°C to 530°C.
4. Shall be designed to minimize SO₂ to SO₃ conversion rate.

H. Ammonia Reduction Catalyst (if required by system manufacturer):

1. Shall be extruded, ceramic blocks with square monolithic channels (honeycomb type).
2. Shall be shop assembled with a high temperature fiberglass gasket material. The modules should be approximately 150mm x 150mm in cross section and 150, 300 or 450mm in depth for ease of field installation and removal from the reactor housing.
3. Shall have a continuous operating range of 572°F to 977°F / 300°C to 530°C.
4. Shall reduce the concentration of residual ammonia in the exhaust gas without creation of NO_x.

- I. Urea Injection Lance:
 1. The urea injection lance shall be constructed of 304 Stainless Steel. It shall be installed via a flanged port on the Catalyst housing. Lance shall be a 2-phase type using compressed air to atomize the urea solution as well as to purge and cool the lance.
 2. Injection lance shall be easily removed for maintenance and shall only require standard hand tools.
- J. SCR Control System: Analysis Controlled Injection System (ACIS):
 1. General:
 - a. The system shall be Programmable Logic Controller based and provide automatic SCR system start-up, operation, shutdown, monitoring, and annunciation of abnormal conditions.
 - b. The reducing agent in the SCR system shall be 32.5% urea conforming to ISO 22241.
 - c. All control system components shall be designed to operate on 230VAC, Single Phase, 60HZ power with a maximum current draw of 10 amperes, derived from the engine-generator equipment enclosure interior panelboard.
 2. Urea Metering Panel (Dosing Control):
 - a. The Dosing Control panel shall include the urea and compressed air handling components including pressure switch, metering valve and flow meter.
 - b. Metering Panel shall be directly controlled by the Closed Loop Control Unit to adjust the urea flow rate, as required. Flow meter shall provide feedback to the Control Unit that the appropriate flow is achieved and be used for consumption monitoring.
 - c. Metering Panel shall contain air pressure manifold with low pressure switch tied back to the Control Unit.
 - d. Provide Dosing Control panel with internal space heater and insulation to prevent freezing/crystallizing of the urea.
 - e. Dosing Control panel shall be suitable for outdoor installation, provided with a NEMA 4X, 316 stainless steel enclosure.
 - f. Dosing Control panel shall be supplied from a 120V, single-phase power source derived from the engine-generator equipment enclosure interior panelboard.

- g. The following shall be provided integral with the metering panel for connection of remote alarms and indication at the Corp Yard control system:
 - 1) Dosing System Running indication (normally-open dry contact).
 - 2) Dosing System Fault alarm (normally-open dry contact).
- h. The following shall be provided integral with the metering panel for connection of remote control from the standby generator control panel:
 - 1) Generator Running indication (normally-open dry contact at standby generator control panel).

K. Urea Booster Pump:

- 1. Provide urea pump with required pressure regulator, relief valve, pulsation dampener, etc., as specified by the manufacturer. Pump shall be controlled by the SCR Control Unit. Provide one pump per system.

L. Air Compressor (if required):

- 1. Provide air compressor to supply injection/purge air as required for proper operation. Air compressor shall be oil-free rotary vane type and shall not require lubricators.
- 2. Air compressor shall be supplied from a single-phase power source derived from the engine-generator equipment enclosure interior panelboard.

M. Urea Storage Totes:

- 1. Provide two (2) 224 gallon urea totes for use with the supplied DECS equipment.
- 2. Totes shall be designed according to ISO 22241-3.
- 3. Totes shall be manufactured from food grade, virgin high density polyethylene resin, ANSI/NSF 61 approved, fabricated with UV sunlight stabilizers, suitable for outdoor use.
- 4. Provide totes with a galvanized steel cage.
- 5. Provide totes with provisions for offloading and portability utilizing a forklift.
- 6. Provide totes with a threaded 2-inch port for connection of ½" piping routed from the Dosing Control panel.

2.12 RESISTIVE LOAD BANK

- A. Supply one (1) fully self-contained, radiator-mounted resistive load bank system.
- B. Rating: 480 volts, 3-phase, 300 kilowatts.

- C. Controls: Designed for integral operation with the standby power system equipment with automatic controls which increase/decrease loading to maintain minimum required loading on the generator at all times during operation.
- D. Construction: Heavy-gauge aluminized steel per ASTM A463, designed for continuous radiator-mounted operation.
- E. Finish: High quality baked polyester power coated finish with a minimum film thickness of 2.8 +/- 0.4 mils per coat, 2 coats minimum, ANSI 61 gray.
- F. All exterior fasteners shall be fabricated from 316 stainless steel.
- G. Fully-integrated load bank equipment shall be listed to UL 508A standard.

2.13 FINISHES

- A. Engine, Generator, Fuel Storage Tank, Weatherproof Acoustical Enclosure and Other Equipment and Accessories: Shop-finished with manufacturer's premium corrosion resistant coating system, suitable for maximum resistance to corrosive or marine environments; field touch up with same or compatible coating.

2.14 SOURCE QUALITY CONTROL

A. General:

1. Provide notification of all work performed at the standby generator equipment manufacturer's facilities. Provide safe access to all areas where work to be inspected is being performed.
2. The supplier shall perform functional unwitnessed testing of the generator in a factory demonstration test (FDT) prior to shipment. Assembly of fuel storage base tank and weatherproof enclosure shall not be required for factory witness testing by the supplier.

Provide the District with one (1) month advanced written notification of the proposed date for the testing described in this Section.

3. The manufacturer shall provide load banks, fuel, test equipment, labor, materials, and all other consumables, equipment, and services required for all factory testing.

B. Factory Testing:

1. Perform the following load tests using a 0.8 pf load bank:
 - a. Test the diesel engine-driven generator at 0.8 pf, at both full load and no load.
 - b. Static test, 100% block load test at rated kW and 0.8 pf.
 - c. Transient test, four equal load steps up to rated kW and 0.8 pf.

- d. 8-hour load test, with two hours at each 25 % load step, with the following data recorded at 15-minute intervals:
 - 1) Ambient air temperature and barometric pressure.
 - 2) Engine oil temperature and pressure.
 - 3) Engine oil filter differential pressure.
 - 4) Fuel consumption rate.
 - 5) Fuel pressure.
 - 6) Engine coolant temperature.
 - 7) Exhaust gas temperatures.
 - 8) Generator speed, individual phase currents, individual phase voltages, three-phase kVAR, three-phase kW and overall power factor.
- e. Vibration testing
 - 1) Horizontal, vertical, and axial vibration measurements at each engine and generator bearing at 100 % load.

C. Communication Test:

- 1. At the factory test, the supplier shall temporarily connect to the Modbus TCP Ethernet port on the generator control panel to confirm proper Modbus communication.

D. Punchlist:

- 1. Compile a punch list of corrective items noted during factory witness testing. Submit the original punchlist, along with a point-by-point description of how each punch list comment was addressed and resolved.

2.15 AUTOMATIC TRANSFER SWITCH

- A. Supply new automatic delayed transition transfer switch (ATS) and associated microprocessor-based control module.
- B. Switch Ratings: As indicated on the Drawings.
- C. Provide one (1) spare microprocessor controller (in addition to new microprocessor controller provided installed with new automatic transfer switch).
- D. Provide one (1) spare extension harnesses for ATS provided. Spare harness shall be in addition to new harness installed in new automatic transfer switch provided.
- E. New ATS shall consist of a power transfer switch unit which shall be provided in an outdoor, NEMA 3R, 316 stainless steel free-standing enclosure.

- F. Provide new ATS enclosure and compartment with Fluke Model FLK-075-CLKT (no equal) “fisheye” viewports to allow for infrared scanning of the internal ATS components with the enclosure door in the closed position.
- G. Provide new automatic transfer switch with microprocessor-based ATS control module and all required interconnection wiring harness accessories for connections between ATS and control module.
- H. ATS shall transfer the load in delayed transition (break-before-make) mode. Transfer is accomplished with a user-defined interruption period in both directions adjustable from 1 second to 5 minutes in at least 15 increments.
- I. Submittals:
 - 1. ATS and associated control module catalog information which includes specific ratings and features “arrowed” for clarity.
 - 2. Custom-developed interconnection wiring diagram which indicates specific point-to-point wiring requirements between ATS, control module, standby generator control panel and PLC equipment. Diagram shall include terminal block numbers and unique wiring identification numbers to be used for all new wiring. “Partial” wiring diagrams which do not show complete end-to-end field wiring connections are not acceptable.
 - 3. ATS installation and start-up instructions.
 - 4. ATS maintenance and repair manual. Manual shall include periodic maintenance and testing recommendations, lubrication recommendations, etc.
- J. Manufacturer: Asco 7000 Series, Type “ADTS” (no equal to match District’s similar, installed equipment).
- K. A transfer switch manufacturer certified field technician shall visit the site where new ATS equipment is provided to inspect the new ATS installation and provide pre-energization set-up of the equipment. A minimum of eight (8) hours presence at the site where new ATS equipment is installed shall be included, not including travel time to and from the site.

PART 3 EXECUTION

3.01 SITE DELIVERY INSPECTION AND HANDLING

- A. When offloading or moving the delivered standby power system equipment with a crane or hoist is performed by Others, lifting lugs near the top of the equipment shall be utilized. A spreader bar shall be used to hold the lifting cables apart to avoid any bending of the structure or lifting lugs. Supplier’s representative shall supervise the standby power system equipment rigging during off-loading and provide recommendations for proper lifting, in accordance with the requirements of the O&M manual.

- B. A supplier's representative shall be present at the delivery site when each delivery of standby power system equipment is delivered to assist the District with visual inspection of the delivered equipment and materials. Visual inspection shall include:
 - 1. External dents, scratches, or similar damage.
 - 2. Corrosion.
 - 3. Internal damage to equipment housings, panels or accessory items.
- C. Following visual inspection of each standby power system equipment delivery by the supplier's representative and the District, any deficiency items shall be noted. Depending on the degree of any noted deficiency items, the supplier's representative and District shall mutually agree upon a course of corrective action that shall be taken by the manufacturer to resolve the deficiency, including return of the delivered equipment to the manufacturer's facility if warranted, at no additional cost to the District.
- D. The supplier's field installation personnel shall be on-site upon delivery of the fuel storage base tank, standby generator skid and generator enclosure for supervision of offloading of this equipment from the delivery truck directly to the concrete equipment pad where the equipment will be permanently located. As this equipment is placed on the concrete equipment pad, the supplier's field installation personnel shall assemble the delivered equipment and components until all fuel storage tank, standby generator and weatherproof enclosure installation is complete.

3.02 FIELD TESTING, SYSTEM START-UP AND COMMISSIONING

- A. Field Testing – Engine Generator Systems Including Completed Weatherproof Enclosure and Subbase Fuel Tank Installation: Test engine generator system as a complete unit together with subsystems. The test program shall include the following functions:
 - 1. All field testing shall be witnessed by the District.
 - 2. Accepted Operations and Maintenance Manuals and testing session documentation shall be submitted to the District for review a minimum of four (4) weeks prior to scheduled field testing of the complete standby power systems.
 - 3. Field NETA testing of the on-board engine generator circuit breaker shall be performed by the District's Installation Contractor. Any deficiencies found during this testing shall be corrected by the supplier at no additional cost to the District. All costs associated with subsequent field NETA testing that shall be required due to circuit breaker repair or replacement shall be the responsibility of the Supplier.
 - 4. All travel and subsistence costs for supplier's field technician site visits shall be included in the supplier's quotation. If field testing is unsuccessful due to issues related to the supplier's equipment then the supplier shall be

responsible for all costs related to subsequent site visits that may be required until successful field testing, start-up and commissioning is completed.

5. The District's installation Contractor shall defer main power connections from the supplied standby generator to the Corp Yard power system to permit the supplier's connection of a temporary, portable load bank for start-up and field testing purposes. The supplier shall be responsible for procuring the temporary load bank to the project site, providing all required temporary connection cables and connecting/disconnecting the temporary load bank to the generator equipment.
6. Supplier's field technician shall coordinate with the District's Programmer for configuration and communication of supplied standby power system with the Corp Yard control system to include standby power system alarm and indication annunciation at the District's SCADA system. Specific alarms and indication data shall be as directed by the District's Programmer as part of the standby power system initial configuration, start-up and commissioning activities.
7. Initial start-up and operation of the standby power system shall be performed by the supplier's field technician with assistance from the District's installation Contractor.
8. District shall notify the supplier of the proposed field testing date(s) four (4) weeks in advance of the proposed date(s) of equipment testing.
9. Supplier's field technician shall inspect the completed standby power system installation to confirm that the installation is correct and that the system is ready for start-up and commissioning.
10. Verification that each subsystem is complete and functions according to design criteria; include measurements of temperatures, pressures, and flows for all components.
11. Individual testing of each protective device and verification of the accuracy of instrumentation set points.
12. With the generator temporarily connected to the temporary, portable load bank system, the supplier's field technician shall operate the standby power system from 0 to maximum 100 percent load, starting at no load and increasing in increments of 25 percent; check at each load point to verify stable operation, fuel consumption (measure fuel consumption approximately by measuring supply tank drawdown), engine performance, and generator performance. The standby power system shall be load tested continuously for a minimum of four (4) hours.
13. Performance of full load transient tests to verify that voltage and frequency transient characteristics are within the supplier's recommended values.
14. Verification that equipment is free of all vibrations throughout operating range.

15. Provide written report including raw test data, calculated values and a certification that all values are normal and within specifications and that each unit is ready to be placed into service.
16. Measure radiator performance at full load including air flow, air inlet temperature and air outlet temperature.
17. After successful completion of the supplier's field start-up and testing, the supplier shall disconnect and remove the temporary, portable load bank from the project site and the District's installation Contractor shall connect the permanent power connections between the new standby power system and the Corp Yard power distribution system.
18. Supplier shall provide the services of a field technician certified by the automatic transfer switch manufacturer for pre-energization inspection, configuration and initial start-up of the new automatic transfer switch equipment.
19. District shall notify the supplier of the proposed field commissioning date(s) four (4) weeks in advance of the proposed date(s) of standby system commissioning.
20. Supplier's field technical personnel shall provide on-site final commissioning of the standby power system. With assistance from the District and District's installation Contractor, facility power loss simulation shall be conducted to ensure that the standby power system responds and operates properly. The supplier's field technician shall perform system adjustments and/or minor corrections to the system equipment and components as required until a minimum of three (3) flawless, consecutive functional tests of the standby power system are achieved.
21. Upon successful completion of on-site commissioning of the standby power system, the supplier shall provide written confirmation of that the field commissioning has been successfully completed and the system is ready to be placed into normal operation. The date when this written notice is received shall trigger the start of the standby power system warranty specified herein.

3.03 SYSTEM DRAWINGS

- A. Attached are system drawings which indicate how the supplied standby power system equipment shall be incorporated into the Corp Yard power and control systems.

END OF SECTION

SECTION 16233B

STANDBY POWER SYSTEM EQUIPMENT – LIFT STATIONS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Two (2) outdoor standby power generators, each provided in a sound-attenuated weatherproof enclosure including base-mounted diesel fuel storage tanks.
2. Outdoor, free-standing automatic transfer switch.

B. Overview of Standby Power System Equipment Supply:

1. Skid-mounted diesel engine-driven standby generator systems.
2. Base-mounted diesel fuel storage tanks.
3. Outdoor weather-proof, sound-attenuated, non-walk-in generator system enclosures.
4. Automatic transfer switch housed in an outdoor, free-standing enclosure at Lift Station (LS29).

C. Overview of Standby Power System Scope of Supply Responsibility:

1. The standby power system equipment supplier shall be responsible for the delivery of all system equipment and components to the City of Foster City's outlying lift station locations:

Lift Station LS22
601 Catamaran St
Foster City, CA 94404

Lift Station LS29
909 E Hillside Boulevard
Foster City, CA 94404

2. Each supplied standby power system fuel storage base tank, standby generator skid equipment and generator enclosure shall be offloaded from the supplier's delivery truck directly onto a concrete equipment pad utilizing hoisting equipment provided by District's installation Contractor. The standby power system equipment supplier's field personnel shall be present at each respective delivery site to direct the offloading of the new standby generator system equipment.

3. Anchoring of the supplied standby power system standby generator and automatic transfer switch equipment to the concrete equipment pad at each lift station site shall be provided by Others.
4. Field assembly of the supplied standby power system equipment standby generator equipment (i.e. fuel storage base tank, standby generator skid and generator enclosure) shall be performed by the supplier's field technical personnel if delivered as separate items.
5. Requirements are taken using the Kohler equipment but by no means the standard. Other brands can be used if it meets minimum requirements in the specifications and statement of changes is submitted for evaluation.

1.02 REFERENCES

- A. American Society of Civil Engineers:
 1. ASCE 7 – Minimum Design Loads for Building and Other Structures.
- B. American Society of Mechanical Engineers:
 1. B16.5 – Pipe Flanges and Flanged Fittings: NPS ½ through NPS 24 Metric/Inch Standard.
- C. ASTM International:
 1. ASTM A106/A106M – Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service.
- D. Bay Area Air Quality Management District (BAAQMD):
 1. BAAQMD Authority to Construct Permit.
 2. All applicable rules and regulations, including BAAQMD-specified Source Test Methods and Procedures.
- E. California Air Resources Board (CARB).
- F. Code of Federal Regulations (CFR):
 1. Title 40, Chapter I, Subchapter C, Part 89 – Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines.
- G. Institute of Electrical and Electronics Engineers (IEEE).
- H. National Fire Protection Association (NFPA):
 1. 30 – Flammable and Combustible Liquids Code.
 2. 37 – Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines.
 3. 70 – National Electrical Code.
 4. 110 – Standard for Emergency and Standby Power Systems.
- I. National Electrical Manufacturers Association (NEMA):
 1. MG 1 – Motor and Generators.
- J. Underwriters Laboratories:

1. 142 – Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids.
2. 2200 – Standard for Stationary Engine Generator Assemblies.

1.03 DEFINITIONS

- A. Acceptance: Formal action of the District in determining that the Vendor's work has been completed in accordance with the Contract and in notifying the Vendor in writing of the acceptability of the Work.
- B. ATS: Automatic Transfer Switch
- C. BAAQMD: Bay Area Air Quality Management District
- D. CARB: California Air Resources Board
- E. CFR: Code of Federal Regulations
- F. Contract Document(s): The words "Contract Document(s)" shall mean any or all of the following items, as applicable:
 1. Vendor Agreement
 2. Technical Specifications
 3. Drawings
- G. District: The word "District" refers to the Estero Municipal Improvements District.
- H. District's Installation Contractor: The individual partnership, corporation, or combination thereof including joint ventures who enter into the Contract with the District for the performance of the Work. The term covers subcontractor, equipment and material suppliers, and their employees.
- I. DPF: Diesel Particulate Filter
- J. EPA: Environmental Protection Agency
- K. FDT: Factory Demonstration Test
- L. IEEE: Institute of Electrical and Electronics Engineers
- M. ISO: International Organization for Standardization
- N. kW: Kilowatts
- O. kVA: Kilovolt-amperes
- P. LS22: Lift Station 22.
- Q. LS29: Lift Station 29.
- R. Manufacturer: Equipment, material, supplies, and all other items, except labor, brought onto the site by the Contractor to carry out the Work, but not to be incorporated into the Work.

- S. NEMA: National Electrical Manufacturers Association
- T. NFPA: National Fire Protection Agency
- U. O&M: Operations and Maintenance
- V. Others: Third Party Consultant or Contractor.
- W. P&IDs: Piping and Instrumentation Diagrams
- X. Project: The work to be performed under the provisions of the Contract.
- Y. SAE: Society of Automotive Engineers
- Z. SDS: Safety Data Sheet
- AA. Standby Rated Duty: Continuous operation of the supplied standby power system for the duration of any primary power source (i.e. Pacific Gas and Electric Company utility power source) outage to each respective lift station site.
- BB. Submittals: The information which is specified for submission to the District in accordance with the Contract Documents.
- CC. Suppliers: Any person who or which supplies materials or equipment for the Work, including that fabricated to a special design.
- DD. Suppliers Field Personnel: Any person who supplies materials or equipment for the Work, including that fabricated to a special design.
- EE. UL: Underwriters Laboratory
- FF. Work: The labor, materials, equipment, supplies, services, and other items necessary for the execution, completion, and fulfillment of the Contract.

1.04 SYSTEM DESCRIPTION

- A. Supply Lift Station LS22 complete standby power system comprised of, but not limited to, the following equipment and accessories:
 1. Environmental Protection Agency (EPA) compliant diesel engine-driven generator system having a minimum standby power rating of 124 kilowatts (kW) / 155 kilovolt-amperes (kVA) with an output voltage of 120/208 volts, 3-phase.
 2. Base-mounted diesel fuel storage tank with minimum capacity of 595 gallons.
 3. Outdoor-rated, non-walk-in generator enclosure with sound-attenuation design.
 4. Diesel engine emissions control system including all necessary equipment, sensors and accessories required for EPA compliant operation and compatibility with the supplied diesel engine-driven generator equipment.
- B. Supply Lift Station LS29 complete standby power system comprised of, but not limited to, the following equipment and accessories:

1. Environmental Protection Agency (EPA) compliant diesel engine-driven generator system having a minimum standby power rating of 180 kilowatts (kW) / 225 kilovolt-amperes (kVA) with an output voltage of 480 volts, 3-phase.
 2. Base-mounted diesel fuel storage tank with minimum capacity of 765 gallons.
 3. Outdoor-rated, non-walk-in generator enclosure with sound-attenuation design.
 4. Diesel engine emissions control system including all necessary equipment, sensors and accessories required for EPA compliant operation and compatibility with the supplied diesel engine-driven generator equipment.
 5. New automatic transfer switch.
- C. The new generator supplied for Lift Station LS22 shall operate in conjunction with an existing automatic transfer switch and existing site power distribution system. The new generator supplied for Lift Station LS29 shall operate in conjunction with the new, supplied automatic transfer switch and existing site power distribution equipment. Each new standby power system shall operate in an "open-transition" configuration. There are no requirements for either of the supplied standby power systems to operate in parallel with any other power supply source.
- D. The supplied equipment and accessories specified in this section shall be installed by both the supplier's field personnel and by Others as specified herein. Below is a summary of the supplied equipment installations:
1. The new diesel engine-driven standby generator system (generator), base-mounted fuel storage tank and outdoor enclosure shall be installed on and anchored to a concrete equipment pad. The concrete equipment pad and anchoring of each new generator to its respective pad shall be provided by Others. Final assembly of the base-mounted fuel storage tank, standby generator skid and generator outdoor enclosure shall be provided by the supplier's field personnel as required.
 2. Each new generator shall be connected to the respective lift station power distribution and control systems as specified herein and as indicated on the attached Drawings. Installation of new raceways, conductors and connection of each new generator to each lift station power and control system shall be provided by Others.
- E. Installation inspection, configuration, start-up and commissioning of supplied equipment and systems shall be provided by the equipment supplier as specified herein. Supplier shall provide these on-site services at each lift station site after all supplied equipment and systems have been installed and are ready for start-up and commissioning. Supplier shall include on-site service costs in overall equipment supply proposal based upon an estimated time frame which includes supplied equipment submittal development and review, manufacturing and procurement of all supplied equipment to each lift station location and an approximate 6-month installation time frame for installation of the supplied equipment (from time of equipment delivery to the site) for each lift station site with all present service rate escalations included in the proposal.
- F. Consumables such as coolant, lubrication materials and filters required for start-up and commissioning of the new standby power system shall be included in the supplier's scope of supply. Initially required diesel fuel shall be provided by the Supplier as required to facilitate start-up and commissioning of each new standby power system.

- G. On-site training of District personnel for supplied standby power system equipment and accessories shall be provided by the equipment supplier as specified herein. Supplier shall provide this on-site training after all supplied equipment and systems have been commissioned by the equipment supplier at each lift station site. Supplier shall include on-site training costs in overall equipment supply proposal based upon an estimated time frame of providing the training approximately one (1) month after all supplied systems have been commissioned with all present service rate escalations included in the proposal.

1.05 MANDATORY REGULATORY REQUIREMENTS FOR STANDBY POWER SYSTEM DESIGN AND SUPPLIER

- A. Manufacturer shall furnish for the engine CARB-certification, or EPA-certification.
- B. Manufacturer shall furnish for the engine CARB-certified emissions data, or EPA-certified emissions data, including the following identified pollutants: nitrogen (NOx), hydrocarbon and other organic compounds (POC), carbon monoxide (CO), sulfur dioxide (SO2), and particulate matter (PM10).
- C. The supplied engine shall be designed for, and operate exclusively with, CARB diesel fuel (see link for diesel specs: <https://ww2.arb.ca.gov/sites/default/files/2020-03/dieselspecs.pdf>).
- D. The supplied engine shall be designed for, and manufactured with, the most effective emissions control device, or best-available control technology (BACT) meeting the guidelines specified by BAAQMD (see link for determinations: <https://www.baaqmd.gov/~media/files/engineering/bact-tbact-workshop/combustion/96-1-5.pdf?la=en>).
- E. The supplied engine shall meet the requirements of BAAQMD Regulation 6-1-303 for visible emissions limitations.
- F. The supplied engine shall meet the requirements of BAAQMD Regulation 9-1-301 for sulfur dioxide emissions limitations at ground level.
- G. The supplied engine shall meet the requirements of BAAQMD Regulation 9-1-304 for allowable engine fuel requirements.
- H. Lift Station LS22
 1. Manufacturer must be prepared to add a catalyst-based diesel particulate filters (DPFs), diesel oxidation catalysts, ultra-low sulfur diesel fuel as necessary to reduce risks to acceptable levels specified in the Regulation 2-5-302.
 2. Manufacturer must ensure that all engines not equipped with a DPF must be "plumbed" to facilitate the installation of a DPF at a future date.

1.06 SUBMITTALS

- A. Provide separate submittals for each lift station standby generator in electronic Adobe .pdf format. Each submittal shall be combined into an organized, bookmarked, single .pdf file, printable by the District.

- B. Each new generator, sub-base fuel storage tank and generator enclosure shall all be included in a single, organized, tabbed submittal, arranged with cohesive continuation references between various supplied system equipment and components.
- C. Provide a .pdf tab labeled “Notes to Reviewer” that states any exceptions, clarifications or requests for information from the District.
- D. Provide a comprehensive, itemized bill of material that matches all product data and information included for all supplied standby power generator system and automatic transfer switch equipment.
- E. Partial submittals, poorly organized submittals without bookmarks keyed to bill of material entries or unsearchable submittals shall be rejected without review.
- F. Provide customized electrical interconnection diagrams for all supplied equipment and systems. Submittal of “generic” electrical interconnection diagrams which are not specific to this scope of supply shall be rejected without review. Customized electrical interconnection diagrams shall include the following minimum information:
 - 1. Depiction of all field-routed conductors that are connected to equipment provided under this scope of supply and provided by Others. Field wiring shall be depicted utilizing dashed lines.
 - 2. Specific, unique terminal block numbers for each field conductor termination point included with equipment provided under this scope of supply.
 - 3. Recommended size of each power and control conductor indicated on the electrical interconnection diagrams that shall be provided by Others.
 - 4. Upstream voltage, phase and ampere rating required for each external power supply required for equipment provided under this scope of supply (e.g. generator block heater, generator battery charger, etc.).
- G. Submittal General Requirements:
 - 1. Generator fabrication schedule, including anticipated factory acceptance testing dates and equipment delivery date to each project site relative to final acceptance of all submittal information.
 - 2. Safety data sheet (SDS) for lubricant, touch-up paint, and any other chemicals supplied on this project.
 - 3. Itemized bill of material.
 - 4. Itemized list of extra materials furnished specifically for this project, including quantities, description, and part numbers.
 - 5. Manufacturer’s renewal parts literature and cost quotation for one year’s recommended spare parts and special tools for all equipment.

6. Contact information for the Supplier's representative(s) that shall be conducting manufacturers' field services, site tests, and on-site inspections.
7. Warranty.
8. Maintenance contract: Submit options for standby generator system maintenance agreement to provide periodic routine, periodic onsite maintenance and on-call services to address equipment issues. Submittal shall clearly define proposed services, frequency of services, on-call maximum response times based upon the equipment installation location(s) and cost information for maintenance agreement. District shall review submitted information for consideration of entering into a maintenance agreement with the standby generator equipment supplier. A maintenance agreement is not included as part of this package of supply and any agreement for maintenance shall be separate from the specified scope of supply contained herein.

H. Quality Assurance Submittal Information:

1. Prototype testing results: Certification of the following prototype test results:
 - a. Use design prototypes similar to the equipment specified in this Section for testing, not the actual, supplied equipment.
 - b. Minimum prototype testing requirements:
 - 1) In accordance with NFPA 110.
 - 2) Maximum power in kW.
 - 3) Maximum starting kilovolt-ampere at 35 percent instantaneous voltage dip.
 - 4) Alternator temperature rise by embedded detector
 - 5) Governor speed regulation under steady state and transient conditions.
 - 6) Fuel consumption at 25 percent, 50 percent, 75 percent, and 100 percent load.
 - 7) Harmonic analysis, voltage waveform deviation, and telephone influence factor.
 - 8) Cooling airflow rate.
 - 9) Torsional analysis testing to verify that the generator set is free of harmful torsional stresses.
 - 10) Endurance testing.

I. Emissions:

1. Certification of EPA and BAAQMD compliance for a standby power system including verification of compliance of requirements specified herein.
2. Other exhaust characteristics and emissions limitations as required by BAAQMD for the supplied standby power system.

J. Certifications:

1. Certification of the emissions performance of the engine by the engine manufacturer. Include the EPA certificate of conformity with the Clean Air Act for the model year and engine family of the engine specified in this Section.
2. Certified torsional vibration analysis between the engine and generator as required by NFPA 110, 5.6.10.2.
3. Seismic qualification certification:
 - a. Seismic qualification certification for the overall diesel engine-driven generator set, fuel storage base tank, standby generator enclosure, engine starting batteries and battery rack, accessories, and factory-supplied components, in accordance with the seismic design parameters listed in Article 1.06 – Quality Assurance.
4. Certification of equipment by Underwriters Laboratory (UL) or other equivalent nationally recognized independent testing laboratory.
5. Factory certification of the radiator capacity at the specified ambient conditions.
6. Certified production test reports for battery chargers.
7. Upon completion of installation of each standby power system, the Supplier shall issue a certification of compliance for the system installation performed by Others following an on-site inspection by supplier's field technical personnel. This certification shall confirm that the equipment installation performed by Others has been properly installed for all supplied systems and that the standby power system is ready for final commissioning and acceptance.

K. Shop Drawings:

1. Provide detailed dimensional and to-scale plan and section drawings for the proposed skid-mounted generator system that includes the following minimum information:
 - a. Length, width and height dimensions, stated in inches for fully-assembled fuel storage base tank, generator equipment skid and generator enclosure.
 - b. Dry and wet weights, in pounds, of complete, assembled standby power system package that includes skid-mounted fuel storage base tank, generator equipment skid and outdoor enclosure.
 - c. Provide a rigging diagram that indicates the location and lifting capacity of each lifting attachment and center of gravity for fuel storage base tank, generator equipment skid and generator enclosure.
 - d. Electrical conduit stub-up and equipment entry locations.
 - e. Piping and instrumentation diagrams (P&IDs).

2. Electrical Drawings: In addition to customized interconnection diagrams specified herein, the following system-specific electrical drawings shall be submitted for review:
 - a. AC schematic diagrams.
 - b. DC schematic diagrams.
 - c. Communications diagram.
 - d. Engine control schematic diagrams.
 - e. Supplied standby power system package wiring diagrams.

L. Engine:

1. Number of cylinders, bore, stroke, and piston speed.
2. Displacement in cubic inches.
3. Compression ratio.
4. Engine RPM at 60 hertz.
5. Combustion air flow rate required.
6. Cooling air flow rate required.
7. Size of exhaust outlet.
8. Exhaust flow rate and temperature at full rated load.
9. Gauges, including description of value indicated and indicating ranges and units.
10. Jacket water heater quantity, power consumption per unit, and voltage and phase (i.e., single or three-phase) for each unit.
11. Type and grade of fuel oil recommended.
12. Fuel oil consumption at 25 percent, 50 percent, 75 percent and 100 percent of rated engine-generator system nameplate maximum power output.
13. Type and grade lubricating oil recommended.
14. Amount of lubricating oil required per oil change.
15. Normal lubricating oil consumption rate.

16. Recommended lubricating oil change periods stated in both runtime hours and calendar days.
 17. Time interval from start-up contact closure until full load capabilities are available.
 18. Engine-generator system acceptable ambient temperature operating range.
- M. Governor: Manufacturer, model, and engine speed governing accuracy.
- N. Radiator information.
- O. Emissions:
1. After installation and start up of the new standby power system, the District shall retain the services of an independent, certified, source testing firm for the performance an emissions source test on the standby power system using methods as required by BAAQMD Authority to Construct. The retained firm shall perform this testing and shall comply with all related requirements, including test methods, time periods, and reporting. The supplier scope of supply shall include all costs required for making on-site modifications and adjustments to the complete, installed, operating standby power system for compliance with the BAAQMD requirements until acceptable testing results are obtained by the District's retained testing firm.
 2. Emission testing data shall be gathered at rated speed and load as measured by Society of Automotive Engineers (SAE) J177 and J215 or International Organization for Standardization (ISO) 8178 recommended practices.
- P. Silencer:
1. Silencer grade, overall dimensions and weight.
 2. Silencer noise attenuation curves.
 3. Supplier shall provide all necessary information and data including, but not limited to, piping, fittings, silencer, and rain cap.
 4. Exhaust system loss calculations.
 5. Free field mechanical noise level at 23 feet. Provide overall decibels (dBA) referenced to 20 μ Pa.
 6. Exhaust sound level in dBA 5 feet from the discharge end of silencer.
- Q. Synchronous Generator:
1. Maximum rated kilowatt (kW) output.
 2. Maximum rated kilovolt-ampere (kVA) output and power factor.

3. Rated voltage and phase.
4. Maximum rated output current.
5. Number of poles and synchronous speed.
6. Number of leads and wires per lead.
7. Winding pitch.
8. Stator and field ratings including temperature rise at full and overload conditions.
9. Insulation system: include insulation class, stator temperature rise, rotor temperature rise, heat dissipation (kW), and required air flow (m³/min).
10. Impedances (provide in per unit with base values or in ohms):
 - a. Stator winding (armature) resistance (R_a).
 - b. Field winding resistance.
 - c. Synchronous reactance - direct axis (X_d).
 - d. Synchronous reactance - quadrature axis (X_q).
 - e. Transient reactance – direct saturated (X'_{ds}).
 - f. Subtransient reactance - direct axis (X''_d).
 - g. Subtransient reactance - quadrature axis (X''_q).
 - h. Negative sequence reactance (X_2).
 - i. Zero sequence reactance (X_0).
11. Time Constants:
 - a. Open circuit transient – direct axis (T'_{d0}).
 - b. Short circuit transient – direct axis (T'_d).
 - c. Open circuit subtransient – direct axis (T''_{d0}).
 - d. Short circuit subtransient – direct axis (T''_d).
 - e. Open circuit subtransient – quadrature axis (T''_{q0}).
 - f. Short circuit subtransient – quadrature axis (T''_q).

- g. Exciter time constant (T_e).
 - h. Armature short circuit (T_a).
12. Short circuit ratio of the field current required for rated open circuit voltage to the field current required for rated short-circuit current.
 13. Generator excitation voltage and excitation current at no load and full load.
 14. Generator overtemperature protection: Per equipment manufacturer's recommendations with corresponding shutdown alarm for generator overtemperature.
 15. Generator center of gravity, stator weight, rotor weight, rotor balance, and overspeed capacity.
 16. Generator torsional data model including the coupling and fan, generator rotor, and exciter end.
 17. I^2t or K (heating time constant).
 18. Voltage and frequency variation and duration with load step application and removal of 25 percent, 50 percent, 75 percent, and 100 percent of resistive load based on maximum kW rating.
 19. Generator efficiency at 25 percent, 50 percent, 75 percent, and 100 percent of load based on maximum kW rating.
 20. Capability Curves:
 - a. Motor starting capability – percent voltage dip versus starting kVA.
 - b. Current decrement curves for an instantaneous three-phase fault, instantaneous line-line fault, and instantaneous line-neutral fault.
 - c. Open circuit curve – line-line voltage versus field current.
 - d. Short circuit curve – armature current versus field current.
 - e. Zero power factor curve – line-line voltage versus field current.
 - f. Air gap curve – line-line voltage versus field current.
 - g. Reactive capability curve operating chart – kW versus kVAR showing leading and lagging quadrants and engine limit line.
 - h. Short-time overload curve – percent rated armature current versus time for Class H insulation.

- i. Certified published engine horsepower curves showing manufacturer's engine rating for generator set standby and prime power application.
- 21. Anti-condensation space heater kilowatt, voltage, and phase requirements for all anti-condensation space heaters supplied (e.g. generator space heater(s), battery system space heater(s), block heater(s), etc.).
- R. Voltage Regulator: Manufacturer, model, and generator voltage regulating accuracy.
- S. Generator equipment skid-mounted local controls/control panel:
 - 1. Control panel dimensions, conduit entry details, and NEMA rating.
 - 2. Generator monitoring and protection features.
 - 3. Engine monitoring and protection features.
 - 4. Control features.
 - 5. Signal input/output (I/O) provisions.
 - 6. Communications provisions.
 - 7. Modbus register map.
- T. Skid-mounted generator batteries and associated battery charger:
 - 1. Include battery charger maximum power requirement, supply voltage and phase, and physical dimensions of batteries and charger proposed.
 - 2. Batteries and accessories.
 - 3. Battery rack.
 - 4. Battery charger and accessories.
 - 5. Spill containment systems.
- U. Testing:
 - 1. Manufacturer's test procedures, checklists, and test forms.
 - 2. Certified factory test reports for:
 - a. Engine-generator set.
 - b. Battery charger.
 - c. Engine-generator factory testing:

- 1) 0.8 pf generator set test report, tested at full load and no load.
 - 2) Alternator test sheet.
 - 3) Static, transient, and 8-hour load test report.
 - d. The corrective item punch list developed during factory testing with a point-by-point description of how each punch list comment was addressed.
 3. Following complete installation of the supplied standby power system by Others, supplier's field technician(s) shall provide the following on-site testing services to provide certified field test reports:
 - a. Alignment and end play.
 - b. Load tests with the supplied resistive load bank.
 - c. Vibration tests.
 - d. Engine backpressure test.
 - e. Integrated standby power system tests to confirm proper standby power system functional operation with lift station power distribution system.
- V. Operation and Maintenance (O&M) Manuals: General format and configuration of O&M manuals shall comply with the following:
1. A minimum of four (4) weeks prior to delivery of each new standby system equipment to the project site, Supplier shall submit O&M manual information for review.
 2. O&M manuals shall be submitted for review in electronic .pdf format. After District acceptance of O&M manuals, final O&M manuals shall be submitted in both electronic .pdf format along with four (4) hardcopy sets of manuals, provided in three-ring binders.
 3. O&M manuals shall include the following minimum information:
 - a. Operating instructions and a maintenance manual presenting full details for care and maintenance of all equipment comprising the complete standby power system.
 - b. Detail the operational functions of all standby power system controls, indicators and alarms.
 - c. Include standard equipment operational manuals normally furnished by the manufacturer to supplement the customized operational instructions and information specific to this project's scope of supply.
 4. Maintenance Manual:

- a. Instructions covering all details pertaining to care and maintenance of all supplied standby power system equipment as well as data identifying all parts.
- b. These manuals shall include, but are not limited to, the following:
 - 1) Adjustment and test instructions covering the steps involved in the initial test, adjustment, and start-up procedures.
 - 2) Detailed control instructions, which outline the purpose and operation of every control device used in conjunction with operating the standby power system.
 - 3) Complete set of "As Built" custom electrical and mechanical integration shop drawings in AutoCAD 2016 format.
 - 4) Provide two (2) shop manuals to the District that are identical to the manuals used by manufacturer-authorized shop repair personnel. At minimum, provide shop manuals for the supplied engine, radiator, generator and engine-generator local controls/control panel.
- W. Training plan and schedule: Include a minimum of two (2) on-site training sessions by supplier's technical field personnel to occur on non-consecutive days. Each training session shall include the complete supplied standby power system equipment.
- X. Automatic Transfer Switch Submittals: As specified in paragraph 2.13 herein.

1.07 QUALITY ASSURANCE

- A. A single supplier shall provide all equipment and components which comprise the standby power system scope of supply specified herein.
- B. Standby generator manufacturer shall have a minimum of 25 years of experience in the manufacture and production of 480V diesel engine-driven standby generator equipment with no less than ten (10) similar generator units that are in operation that have been installed within the last five (5) years.
- C. Supplier shall have no less than ten (10) similar rated (i.e. 100 kW to 200 kW) generator units that are in operation that have been installed within the last five (5) years which include overall standby power system compliance with EPA and BAAQMD requirements.
- D. Generator set shall be manufactured to the applicable specifications on file with UL and labeled with the UL 2200 mark.
- E. To the maximum extent possible, all electrical components, devices, and accessories shall be listed or labeled by Underwriters Laboratories or other equivalent nationally recognized testing laboratory.
- F. Seismically Qualified Equipment:

1. Provide certification that the diesel engine-driven generator is seismically qualified by an approved shake table testing report following the requirements in Section 13.2 of ASCE 7-16.
2. The skid-mounted battery rack shall be qualified for use in high seismic loading as defined in IEEE Std 693-2005 (i.e., "IEEE-693 High"), for in-service installation anchored in accordance with the supplier's accepted seismic anchorage calculations.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Standby power system supplier shall be responsible for the transport and delivery of all system equipment and components to the following location:

Lift Station LS22
601 Catamaran St
Foster City, CA 94404

Lift Station LS29
909 E Hillsdale Boulevard
Foster City, CA 94404

District Contact Information:

Frank Schoening

Phone: (650) 286-3550

- B. Delivery by the system equipment supplier shall include provisions which facilitate offloading the standby power equipment from the delivery truck to on-site location as specified herein. Supplier shall be responsible for coordinating all delivery scheduling, hoisting equipment recommendations and recommended personnel required at the delivery site for offloading of the standby power system equipment with the District as specified herein and as required.
- C. Equipment shall not be shipped to the site until:
1. Certified factory test reports, including the corrective item punchlist developed during the factory demonstration test, have been approved by the District or
 2. The District inspector authorizes release for shipping at the factory demonstration test.
- D. The Supplier shall schedule and coordinate off-loading of the standby power system equipment at each project site with the District for each delivery dates required to encompass complete delivery of all system equipment and components:
1. Lifting equipment required for offloading equipment at each project site shall be provided by Others based upon recommendations provided by the equipment supplier as specified herein.

2. Furnish all standby power system equipment with removable lifting and jacking angles, eyebolts, etc., attached to equipment structural framing and/or bases to facilitate unloading and move-in operations.
 3. Include provisions on equipment skids for the use of "Multiton" type rollers for moving the equipment skid into position and then removal of the "Multiton" rollers for setting the equipment skid in place.
- E. Ship equipment, material, and spare parts complete except where partial disassembly is required for transportation or for protection of components.
 - F. The Supplier shall protect and securely pack the equipment for the environmental conditions during transit to the jobsite.
 - G. Ship each packaged diesel-engine driven generator as complete as possible, with the latest revision of the bill of material. Minimize the number of components removed for shipping or sent loose for field reassembly.

1.09 PROJECT CONDITIONS

- A. Ambient Temperature: -15 degrees Celsius to 50 degrees Celsius.
- B. Relative Humidity: 0 to 95 percent.
- C. Altitude: Sea level.

1.10 SEQUENCING

- A. Complete factory prototype and factory production tests in accordance with NFPA 110 before shipping the equipment to the project site.
- B. Supplier shall coordinate with the District for delivery date(s) for each specific date that a portion of the standby power system equipment is planned for delivery to the project site no less than eight (8) weeks prior to planned delivery date. Final delivery date(s) shall be mutually agreed upon between the supplier and the District before delivery date(s) are finalized.

1.11 WARRANTY

- A. Provide minimum five (5) year system supplier's warranty valid from date of final acceptance by the District. Final acceptance shall occur after final installation is completed by the District's installation Contractor and the complete standby power system successfully passes an on-site acceptance test in accordance with NFPA 110, 7.13, operated in conjunction with each lift station power distribution system and control system. The supplier shall assume that Final Acceptance of the system shall occur within six (6) months after delivery of all standby power system equipment and components to each project site.
- B. The warranty shall include all repair parts, labor, travel expenses of manufacturer's technician to the installation site, and expendables (i.e., lubricating oils, filters, antifreeze and other service items made unusable by the defect).
- C. Base the warranty on 500 hours of run time per year per site.

- D. The warranty shall include a manufacturer-supplied, temporary, portable standby generator unit and associated temporary interconnection cabling to serve as a temporary standby generator unit should warranty period repairs require more than 48 hours to accomplish. Temporary generator rating shall match that for the supplied new standby generator equipment. Supplier shall be responsible for all costs including mobilization of the equipment to and from the project site and all labor and materials required to connect the temporary generator to the respective lift station power and control systems.

1.12 COMMISSIONING

- A. The supplier shall provide on-site services of technical installation and start-up personnel that are certified by the specific equipment manufacturer for the installation, pre-startup inspection, initial start-up and commissioning of all new standby power system equipment and components.
- B. The supplier shall provide written certification that each complete standby power system has been successfully commissioned and is ready to be placed into normal operation once all on-site commissioning tasks have been successfully completed and all corrective punchlist items have been addressed and resolved.

1.13 TRAINING

- A. Each training session specified herein shall be organized as follows:
 - 1. Introduction:
 - a. Single-line diagram overview to familiarize participants with the facility's electrical distribution system.
 - b. P&ID drawing overview to familiarize participants with the fuel storage, supply, and return system.
 - 2. Review of the O&M Manual:
 - a. Overview of each binder section in the O&M manual.
 - b. Key drawings that indicate power flow, overall switchgear arrangement, and switchgear control.
 - c. Include discussion of how and where to order renewal parts, procedures for initiating warranty work, and manufacturer contact information.
 - 3. Classroom training topics:
 - a. Discussion of diesel engine-driven generator components and their functions.
 - b. Safety precautions.
 - c. Operation.

- d. Inspection and maintenance.
 - e. Cleaning and lubrication.
 - f. Fluid recommendations.
 - g. Procedures for proper storage for the engine and the generator during periods when the engine-driven generator set is out of operation for extended periods.
 - h. Precautions for operation at partial load.
 - i. Troubleshooting guide, with specific trouble item, possible causes, and suggested corrective actions.
4. Hands-on exercises:
- a. Visually identify engine-driven generator components and understand their functions.
 - b. Demonstrate engine control panel use, including manually starting the engine, menu navigation, fault acknowledgment, and emergency stop.
 - c. Demonstrate battery charger control panel use, including menu navigation and fault acknowledgment.
 - d. Demonstrate how to change air, fuel, and oil filters.
 - e. Demonstrate how to relieve pressure from fuel and oil lines prior to maintenance.
 - f. Demonstrate procedures for initial startup after a period of non-operation.
 - g. Demonstrate each of the manufacturer's recommended daily, weekly, every 300 service hours, every 6 months, and every year maintenance activities described in the O&M manual.

1.14 MAINTENANCE

- A. Extra materials:
- 1. Box or package extra materials for long-term storage. Identify each item with manufacturer's name, description and part number on the exterior of the package.
 - 2. Provide specialty tools necessary for routine maintenance of the equipment. Special tools are those that only the manufacturer provides, for special purposes, or to reach otherwise inaccessible parts.
 - 3. Furnish the following extra materials:
 - a. Three sets of lube oil filters, fuel oil filters, and gaskets.

- b. Two sets of air filters.
- c. Two fuses (for each control and power circuit).
- d. One set of crankcase breather filters, when used.
- e. Generator manufacturer's PC-based software for connection to the engine-mounted control panel.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. The following list of manufacturers is based on general capability of a single supplier to manufacture and supply engine-generator equipment and components to provide an EPA and BAAQMD compliant standby power system as a custom-integrated, complete system. This list makes no statement as to the capability of the listed manufacturers to meet the Contract Document requirements. The burden of proof of conformance with the Contract Documents lies with the Supplier. Each complete standby power system shall be supplied by one of the following:
 - 1. Kohler.
 - 2. Caterpillar.
 - 3. Cummins.

2.02 ENGINE GENERATOR EQUIPMENT

- A. Characteristics of assembled skid-mounted engine-generator unit provided:
 - 1. Engine-driven generator consists of a diesel engine directly coupled to an electric generator providing electric power.
 - 2. Each engine shall start, attain full speed, voltage, and assume full load within a maximum of 10 seconds, with jacket water at 85 degrees Fahrenheit.
 - 3. Furnish each engine-driven generator on a steel sub-base to support engine, generator and accessories as a single unit:
 - a. Base: Welded construction.
 - b. Engine direct connected through a flexible coupling to a single bearing generator.
 - c. System free of injurious torsional and bending vibrations within a speed range from 10 percent below to 10 percent above synchronous speed.

- d. Engine-driven generator balanced such that the peak-to-peak amplitude of vibration velocity in any direction does not exceed the engine or generator manufacturer's published limits.
 - e. If shims are required under the feet of the generator for alignment purposes, use 1-piece laminated shim stock that covers at least 90 percent of the foot.
 - f. Supply a complete assembled engine-driven generator skid requiring only field electrical and mechanical connections.
4. Connections to engine-driven generator skid:
- a. Flexible connections are required on all connections to the engine generator.
 - b. Flexible connections include but are not limited to:
 - 1) Exhaust.
 - 2) Fuel lines.
 - 3) Radiator discharge air ductwork.
 - c. The length of all flexible connections to exceed the flexible connector manufacturer's minimum length recommendations for the diameter used and for the misalignment as measured after installation.

B. Generator system performance requirements:

- 1. Lift Station 22 standby power output ratings:
 - a. 124 kilowatts, minimum.
 - b. 120/208 volts.
 - c. 0.8 power factor.
 - d. 3-phase, 4-wire, 60 hertz.
 - e. In accordance with NEMA MG-1 temperature rise limits.
- 2. Lift Station 29 standby power output ratings:
 - a. 180 kilowatts, minimum.
 - b. 277/480 volts.
 - c. 0.8 power factor.
 - d. 3-phase, 4-wire, 60 hertz.

e. In accordance with NEMA MG-1 temperature rise limits.

C. Engine Requirements:

1. Engine Type: 4-Stroke Cycle, turbocharged, intercooled.
2. Maximum Rotational Speed: 1,800 rpm.
3. Minimum Piston Displacement:
 - a. Lift Station 22: 276 cubic inches.
 - b. Lift Station 29: 415 cubic inches.
4. Main Bearings: Minimum of five, replaceable insert type.
5. Cooling: Liquid cooled with engine driven coolant pump.
6. Fuel Type: Meet specifications when operating on Number 2 diesel fuel oils meeting the requirements of the BAAQMD; engines requiring premium fuels shall not be considered.
7. Emissions: Meet the requirements of EPA and BAAQMD.
8. Air filters: Replaceable dry element type with dirty condition differential pressure indicator.
9. Lube oil filters: Cartridge type.

D. Governor: Electronic, digital type to regulate engine speed within 0.25 percent at any constant load from no load to full load.

E. Generator Requirements:

1. Type: Synchronous, 4-pole, rotating field.
2. Exciter Type: Brushless, permanent magnet.
3. Leads: Quantity of twelve (12), re-connectable.
4. Insulation: Class H, 130 degrees Celsius temperature rise per NEMA MG1.
5. Bearing: Sealed type.
6. Coupling: Flexible disc.
7. Amortisseur Windings: Full.
8. Voltage Regulation: $\pm 2\%$ average, no-load to full-load.
9. One-Step Load Acceptance: 100% of rating.
10. Unbalanced Load Capability: 100% of rated standby current.

11. NEMA MG1, IEEE, and ANSI Standards compliance for temperature rise and motor starting.
12. Capable of sustained short circuit current up to 300% of rated current for 10 seconds.
13. Self-ventilated, drip-proof construction.
14. Vacuum impregnated windings with fungus-resistant epoxy varnish.

2.03 COOLING SYSTEM

- A. Liquid-cooled, rated for continuous operation with a maximum ambient temperature of 50 degrees Celsius.
- B. Engine-driven fan.
- C. Radiator: Mounted on the engine skid.
- D. Coolant Solution: Provide solution of 50 percent ethylene glycol and softened water; add chemical water conditioner as recommended by the engine manufacturer.
- E. Jacket Water Heater: Sized to maintain engine jacket water to 90 degrees Fahrenheit for an ambient temperature of 0 degrees Celsius.
- F. Radiator Hoses: Provide premium, oil resistant hoses of Viton or silicone rubber carcass with reinforcing fabric; assembly to be suitable for a minimum service temperature of 250 degrees Fahrenheit.

2.04 FUEL SYSTEM

- A. Subbase Fuel Tank: Provide a subbase fuel tank meeting the following:
 1. Provide UL listed tank with secondary containment rupture basin.
 2. Construction: Reinforced steel channel system with minimum thickness of 7 gauge for channels and 12 gauge for tank construction.
 3. Provide tank baffle to separate hot fuel return from cooler supply fuel.
 4. Provide the following connections:
 - a. 1.25 inch minimum vent; CONTRACTOR to pipe vent to outside any room or enclosure containing the generator set; use schedule 40 black steel pipe for vent.
 - b. 2 inch minimum fill connection.
 - c. 2 inch minimum fuel storage level gauge.
 - d. 1.25 inch minimum low fuel level alarm; provide level switch and connect to control panel.

- e. 0.5 inch minimum fuel supply with dip tube.
- f. 0.5 inch minimum fuel return with dip tube.
- 5. Provide rupture basin level switch and alarm.
- 6. Provide interior coating system as recommended by the manufacturer.
- 7. Provide exterior coating as recommended by the manufacturer.
- B. Fuel Filters: Size filters for 10 percent above the engine fuel pump capacity:
 - 1. Provide water/fuel separator.
 - 2. Provide primary fuel filter.
 - 3. Provide secondary fuel filter.
- C. Engine Fuel Pump: Provide engine-driven fuel pump.
- D. Minimum Subbase Fuel Tank Storage Capacity:
 - 1. Lift Station LS22: 595 gallons.
 - 2. Lift Station 29: 765 gallons.

2.05 EXHAUST SYSTEM

- A. Exhaust Piping:
 - 1. Type: Schedule 40 high temperature black steel pipe conforming to ASTM A106.
 - 2. Drainage: Slope piping to a drain point and provide drain plug.
- B. Exhaust Expansion Joints:
 - 1. Type: Metal with convoluted portion of 0.038 inch thick Type 321 stainless steel; non-convoluted portions of expansion joint to be Type 304 stainless steel, Schedule 10S pipe; provide flanged ends with ASME B16.5, Class 150 bolt hole drilling.
 - 2. Length: Minimum of 18 inches in length.
 - 3. Movement: Rated for a minimum of 1 inch lateral movement, and 1/2 inch axial movement; rated movement defined as plus or minus travel from neutral or free position.
 - 4. Design Life: Infinite cycle life with 1,200 degrees Fahrenheit exhaust, no insulation over the expansion joint, and continuous duty service.

5. Insulation: Insulate expansion joints with custom fitted, removable with reusable fastening system, ceramic fiber insulation blankets enclosed between inner and outer high temperature fabric cover rated for 1,200 degrees Fahrenheit continuous duty; do not insulate expansion joints directly connected to turbocharger outlet.

C. Exhaust Silencer:

1. Type: Heavy duty industrial type fabricated of welded steel with ported tubes and snubbing chambers, and a rating meeting the specified sound attenuation.
2. End Connections: Steel flanges with Class 150 pound drilling pattern.
3. Shell: Sufficiently heavy and reinforced to eliminate excessive vibration, stress or deflection and to support all operating loads with the silencer at elevated temperatures and insulated as specified; loads include insulation weight and connecting piping.
4. Drain: Provide threaded, plugged condensate drain.
5. Sound Attenuation: Attain the following minimum sound attenuation at the listed octave band center frequencies with the engine at full load:

Frequency (Hz)	63	125	250	500	1,000	2,000	4,000	8,000
Attenuation (dB)	39	42	42	40	38	38	38	38

2.06 WEATHERPROOF ACOUSTICAL HOUSING

- A. Type: Provide aluminum non-walk-in type engine-generator enclosure to protect engine, generator, starting system, batteries and other specified accessories from weather exposure. Enclosure shall meet specified seismic criteria and wind gusts up to 100 mph.
- B. Enclosure shall be designed to allow easy maintenance and fitted with 316 stainless steel lockable latches, hinges and door hardware.
- C. Finishing: Enclosure shall be provided with manufacturer’s recommended highest quality available coating option for usage in locations subject to sea air.
- D. Noise Reduction: Provide acoustical insulation and acoustical enclosure ventilation louvers and fan discharge silencers as necessary to achieve a maximum measured sound pressure level (dBA) of 70 dBA when measured at 23 feet from the enclosure; protect acoustical insulation with perforated metal covers and plastic bagging to prevent damage from abrasion or weather elements.

2.07 ENGINE – GENERATOR CONTROL SYSTEM

- A. Manufacturer: Control system shall be generator system manufacturer’s recommended standard, mounted within interior of engine generator weatherproof enclosure.

- B. Switches, Alarms and Monitors: Provisions for external, hardwired signal connections for automatic starting/stopping and minimum of ten (10) dry contacts for remote alarm and status signals related to the engine generator system. Three (3) of the ten (10) programmable dry contacts shall be factory-programmed for the following remote signal connections to the pump station control system:
 - 1. Generator Running indication.
 - 2. Generator Failure alarm.
 - 3. Low Fuel Level alarm.
 - 4. Generator Ready (In Auto) indication.
- C. Remote starting and of each standby power system generator shall be provided from the respective lift station automatic transfer switch (ATS) via a normally-open dry contact located at the ATS. When the standby power system is in the “Automatic” mode, closure of the normally-open, remote ATS contact shall start the generator and it shall continuously operate until the remote ATS contact opens. Upon opening, the generator shall enter cool-down mode.
- D. Fuel level (high and low level), fuel level indication (in gallons) and fuel tank leak alarm shall be factory-wired to the manufacturer’s control panel with the capability to program the remote dry contacts for the alarm signals.
- E. On-Board Circuit Breaker: Provide each generator with a main line, skid-mounted molded-case circuit breaker, 3-phase, system voltage as specified, 100% rated, rated 65kAIC minimum with continuous ampacity rating as recommended by the Supplier for continuous, full-load operation of each engine generator unit. Each circuit breaker shall be provided with an electronic trip unit with long-time and short-time field-adjustable settings.

2.08 STANDBY POWER SYSTEM OPERATION

- A. Provide control devices and logic to sequentially start, operate, control, test, and stop each generator system as described. Coordinate control system design so that upon receipt of a remote, hardwired “Run” command from the District’s facilities (i.e. normally-open dry contact held closed when “Run” signal is activated), power is automatically supplied by the generator and upon loss of the remote “Run” signal, the generator system shall automatically enter its cool-down mode and shut down upon expiration of cool-down.
- B. Engine Start Sequence:
 - 1. Engine shall not start if any of the safety shutdown circuits have been tripped and not cleared and reset.
 - 2. Automatic Engine Start Sequence:
 - a. Initiated by a remote signal from the lift station facilities.
 - b. Starter Motor: Automatically crank the engine for adjustable times.

- C. Emergency Shutdown Sequence: Engine shall shutdown immediately if the emergency stop button is activated, or any of the specified shutdowns activate.
- D. Normal Shutdown Sequence: Local “Stop” signal or loss of remote “Run” signal shall cause the engine to run unloaded for an adjustable cool-down period and then stop.

2.09 STANDBY GENERATOR EQUIPMENT SKID

- A. Skid Requirements: Mount the engine, generator, radiator and specified accessories on a common heavy-duty fabricated steel skid.
- B. Skid Construction: Fabricated steel skid to consist of a rigid welded frame of wide flange members or rails on each side.
- C. Vibration Isolators: Mount skid on spring or rubber-type isolators having telescopic top and bottom housing with vertical stabilizers to resist lateral and vertical forces.
 - 1. Isolator Construction: Shatterproof ductile iron in accordance with ASTM A 536, Grade CS-45-12.

2.10 ACCESSORIES

- A. Starting System: Provide a 12-volt (LS22) and 24 volt (LS29) direct current electric starting system with positive engagement drive.
 - 1. Batteries: Provide a 12-volt (LS22) and 24 volt (LS29) absorbent glass mat (AGM) battery set of the heavy-duty diesel starting type; sufficient capacity for a minimum of 120 seconds total cranking time without recharging.
 - 2. Battery Rack: Provide a battery rack with necessary cables and clamps; provide a cover constructed of aluminum angles and mesh to prevent dropped items from touching the battery poles; provide latches to allow quick removal of the cover from the rack.
 - 3. Battery Charger: Provide UL approved current limiting battery charger to automatically recharge the batteries:
 - a. Charger to float at 2.17 volts per cell and equalize at 2.33 volts per cell.
 - b. Provide charger overload protection.
 - c. Charger to have silicon diode full wave rectifier, voltage surge suppressors, direct current ammeter, direct current voltmeter and fused alternating current input.
 - d. Amperage Output: Not less than 10 amperes.
- B. Guards: Provide equipment guards as recommended by the Supplier.
- C. Crankcase Breather Filter:

1. Provide crankcase ventilation system with coalescing filter/trap for blowby; coalescing filter to be replaceable.
2. When engine manufacturer recommends an open crankcase breather system route outlet of breather filter to outside at 3 inches above grade and away from engine components; provide on breather outlet Nelson "EcoVent" or equal, sized to match engine breather flow.
3. When engine manufacturer recommends a closed crankcase breather system provide integral crankcase pressure regulator with an automatic internal filter bypass and bypass indicator; unit to be Racor Model CCV 4500 or equal.

2.11 FINISHES

- A. Engine, Generator, Fuel Storage Tank, Weatherproof Acoustical Enclosure and Other Equipment and Accessories: Shop-finished with manufacturer's premium corrosion resistant coating system, suitable for maximum resistance to corrosive or marine environments; field touch up with same or compatible coating.

2.12 SOURCE QUALITY CONTROL

A. General:

1. Provide notification of all work performed at the standby generator equipment manufacturer's facilities. Provide safe access to all areas where work to be inspected is being performed.
2. The supplier shall perform functional unwitnessed testing of the generator in a factory demonstration test (FDT) prior to shipment. Assembly of fuel storage base tank and weatherproof enclosure shall not be required for factory witness testing by the supplier.

Provide the District with one (1) month advanced written notification of the proposed date for the testing described in this Section.

3. The manufacturer shall provide load banks, fuel, test equipment, labor, materials, and all other consumables, equipment, and services required for all factory testing.

B. Factory Testing:

1. Perform the following load tests using a 0.8 pf load bank:
 - a. Test the diesel engine-driven generator at 0.8 pf, at both full load and no load.
 - b. Static test, 100% block load test at rated kW and 0.8 pf.
 - c. Transient test, four equal load steps up to rated kW and 0.8 pf.
 - d. 8-hour load test, with two hours at each 25 % load step, with the following data recorded at 15-minute intervals:

- 1) Ambient air temperature and barometric pressure.
 - 2) Engine oil temperature and pressure.
 - 3) Engine oil filter differential pressure.
 - 4) Fuel consumption rate.
 - 5) Fuel pressure.
 - 6) Engine coolant temperature.
 - 7) Exhaust gas temperatures.
 - 8) Generator speed, individual phase currents, individual phase voltages, three-phase kVAR, three-phase kW and overall power factor.
- e. Vibration testing
- 1) Horizontal, vertical, and axial vibration measurements at each engine and generator bearing at 100 % load.

C. Punchlist:

1. Compile a punch list of corrective items noted during factory witness testing. Submit the original punchlist, along with a point-by-point description of how each punch list comment was addressed and resolved.

2.13 AUTOMATIC TRANSFER SWITCH (LIFT STATION LS29)

- A. Supply new automatic delayed transition transfer switch (ATS) and associated microprocessor-based control module.
- B. Switch Ratings: As indicated on the Drawings.
- C. Provide one (1) spare microprocessor controller (in addition to new microprocessor controller provided installed with new automatic transfer switch).
- D. Provide one (1) spare extension harnesses for ATS provided. Spare harness shall be in addition to new harness installed in new automatic transfer switch provided.
- E. New ATS shall consist of a power transfer switch unit which shall be provided in an outdoor, NEMA 3R, painted steel free-standing enclosure, ANSI 61 Gray.
- F. Provide new ATS enclosure and compartment with Fluke Model FLK-075-CLKT (no equal) "fisheye" viewports to allow for infrared scanning of the internal ATS components with the enclosure door in the closed position.
- G. Provide new automatic transfer switch with microprocessor-based ATS control module and all required interconnection wiring harness accessories for connections between ATS and control module.

- H. ATS shall transfer the load in delayed transition (break-before-make) mode. Transfer is accomplished with a user-defined interruption period in both directions adjustable from 1 second to 5 minutes in at least 15 increments.
- I. Submittals:
 - 1. ATS and associated control module catalog information which includes specific ratings and features “arrowed” for clarity.
 - 2. Custom-developed interconnection wiring diagram which indicates specific point-to-point wiring requirements between ATS, control module, standby generator control panel and PLC equipment. Diagram shall include terminal block numbers and unique wiring identification numbers to be used for all new wiring. “Partial” wiring diagrams which do not show complete end-to-end field wiring connections are not acceptable.
 - 3. ATS installation and start-up instructions.
 - 4. ATS maintenance and repair manual. Manual shall include periodic maintenance and testing recommendations, lubrication recommendations, etc.
- J. Manufacturer: Asco 7000 Series, Type “ADTS” (no equal to match District’s similar, installed equipment).
- K. A transfer switch manufacturer certified field technician shall visit the site where new ATS equipment is provided to inspect the new ATS installation and provide pre-energization set-up of the equipment. A minimum of eight (8) hours presence at the site where new ATS equipment is installed shall be included, not including travel time to and from the site.

PART 3 EXECUTION

3.01 SITE DELIVERY INSPECTION AND HANDLING

- A. When offloading or moving delivered standby power system equipment with a crane or hoist that shall be performed by Others, lifting lugs near the top of the equipment shall be utilized. A spreader bar shall be used to hold the lifting cables apart to avoid any bending of the structure or lifting lugs. Supplier’s representative shall supervise the standby power system equipment rigging during off-loading and provide recommendations for proper lifting, in accordance with the requirements of the O&M manual.
- B. A supplier’s representative shall be present at each delivery site when each delivery of standby power system equipment is delivered to assist the District with visual inspection of the delivered equipment and materials. Visual inspection shall include:
 - 1. External dents, scratches, or similar damage.
 - 2. Corrosion.

3. Internal damage to equipment housings, panels or accessory items.
- C. Following visual inspection of each standby power system equipment delivery by the supplier's representative and the District, any deficiency items shall be noted. Depending on the degree of any noted deficiency items, the supplier's representative and District shall mutually agree upon a course of corrective action that shall be taken by the manufacturer to resolve the deficiency, including return of the delivered equipment to the manufacturer's facility if warranted, at no additional cost to the District.
 - D. The supplier's field installation personnel shall be on-site upon delivery of the fuel storage base tank, standby generator skid and generator enclosure for supervision of offloading of this equipment from the delivery truck directly to the concrete equipment pad where the equipment will be permanently located. As this equipment is placed on the concrete equipment pad, the supplier's field installation personnel shall assemble the delivered equipment and components until all fuel storage tank, standby generator and weatherproof enclosure installation is complete.

3.02 FIELD TESTING, SYSTEM START-UP AND COMMISSIONING

- A. Field Testing – Engine Generator Systems Including Completed Weatherproof Enclosure and Subbase Fuel Tank Installation: Test each engine generator system as a complete unit together with subsystems. The test program shall include the following functions:
 1. All field testing shall be witnessed by the District.
 2. Accepted Operations and Maintenance Manuals and testing session documentation shall be submitted to the District for review a minimum of four (4) weeks prior to scheduled field testing of the complete standby power systems.
 3. Field NETA testing of the on-board engine generator circuit breaker shall be performed by the District's Installation Contractor. Any deficiencies found during this testing shall be corrected by the supplier at no additional cost to the District. All costs associated with subsequent field NETA testing that shall be required due to circuit breaker repair or replacement shall be the responsibility of the Supplier.
 4. All travel and subsistence costs for supplier's field technician site visits shall be included in the supplier's quotation. If field testing is unsuccessful due to issues related to the supplier's equipment then the supplier shall be responsible for all costs related to subsequent site visits that may be required until successful field testing, start-up and commissioning is completed.
 5. The District's installation Contractor shall defer main power connections from the supplied standby generator to the respective lift station power system to permit the supplier's connection of a temporary, portable load bank for start-up and field testing purposes. The supplier shall be responsible for procuring the temporary load bank to the project site, providing all required temporary

connection cables and connecting/disconnecting the temporary load bank to the generator equipment.

6. Initial start-up and operation of the standby power system shall be performed by the supplier's field technician with assistance from the District's installation Contractor.
7. District shall notify the supplier of the proposed field testing date(s) four (4) weeks in advance of the proposed date(s) of equipment testing.
8. Supplier's field technician shall inspect each completed standby power system installation to confirm that the installation is correct and that the system is ready for start-up and commissioning.
9. Verification that each subsystem is complete and functions according to design criteria; include measurements of temperatures, pressures, and flows for all components.
10. Individual testing of each protective device and verification of the accuracy of instrumentation set points.
11. With the generator temporarily connected to the temporary, portable load bank system, the supplier's field technician shall operate the standby power system from 0 to maximum 100 percent load, starting at no load and increasing in increments of 25 percent; check at each load point to verify stable operation, fuel consumption (measure fuel consumption approximately by measuring supply tank drawdown), engine performance, and generator performance. The standby power system shall be load tested continuously for a minimum of four (4) hours.
12. Performance of full load transient tests to verify that voltage and frequency transient characteristics are within the supplier's recommended values.
13. Verification that equipment is free of all vibrations throughout operating range.
14. Provide written report including raw test data, calculated values and a certification that all values are normal and within specifications and that each unit is ready to be placed into service.
15. Measure radiator performance at full load including air flow, air inlet temperature and air outlet temperature.
16. After successful completion of the supplier's field start-up and testing, the supplier shall disconnect and remove the temporary, portable load bank from the project site and the District's installation Contractor shall connect the permanent power connections between the new standby power system and the respective lift station power distribution system.
17. Supplier shall provide the services of a field technician certified by the automatic transfer switch manufacturer for pre-energization inspection, configuration and initial start-up of the new automatic transfer switch equipment.

18. District shall notify the supplier of the proposed field commissioning date(s) four (4) weeks in advance of the proposed date(s) of standby system commissioning for each individual lift station site.
19. Supplier's field technical personnel shall provide on-site final commissioning of each standby power system. With assistance from the District and District's installation Contractor, facility power loss simulation shall be conducted to ensure that the standby power system responds and operates properly. The supplier's field technician shall perform system adjustments and/or minor corrections to the system equipment and components as required until a minimum of three (3) flawless, consecutive functional tests of the standby power system are achieved.
20. Upon successful completion of on-site commissioning of each standby power system, the supplier shall provide written confirmation of that the field commissioning has been successfully completed and the system is ready to be placed into normal operation. The date when this written notice is received shall trigger the start of the standby power system warranty specified herein.

3.03 SYSTEM DRAWINGS

- A. Attached are system drawings which indicate how the supplied standby power system equipment shall be incorporated into each lift station power and control system.

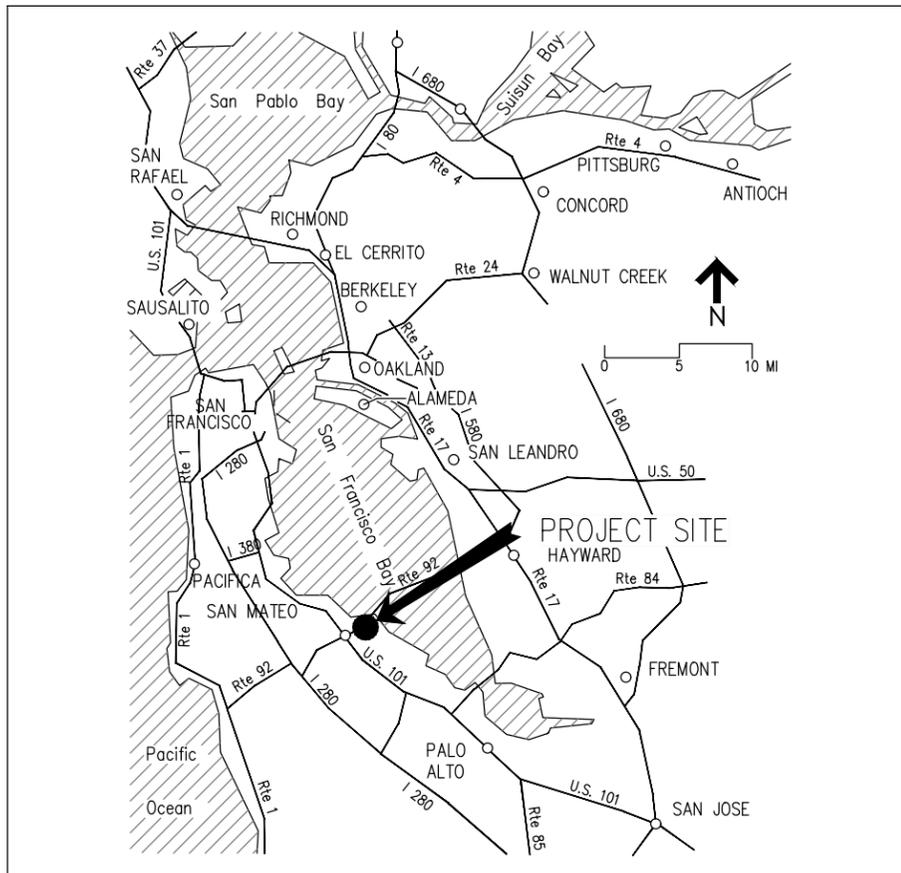
END OF SECTION

Drawings

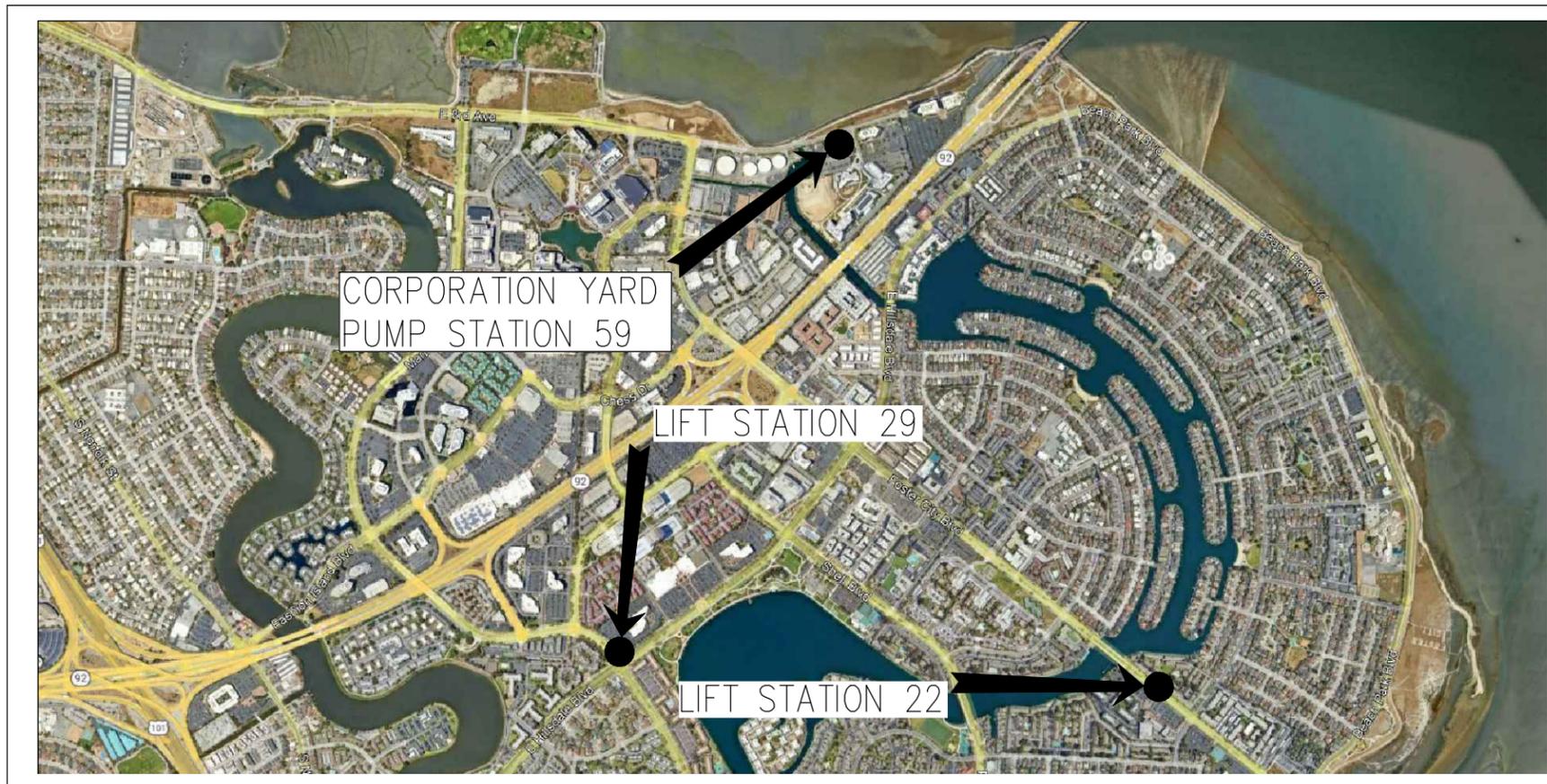
EMID EMERGENCY GENERATOR REPLACEMENT PROJECT

CITY OF FOSTER CITY, CA

PRE-PURCHASE DESIGN PACKAGE



REGIONAL LOCATION
NOT TO SCALE



SHEET INDEX

VICINITY MAP
NOT TO SCALE

SHEET NO.

SHEET TITLE

CIVIL

- C-01 TITLE SHEET
- C-02 SYMBOLS AND ABBREVIATIONS
- C-03 CORPORATION YARD PUMP STATION 59 – PROPOSED SITE PLAN
- C-04 LIFT STATION 22 – PROPOSED SITE PLAN
- C-05 LIFT STATION 29 – PROPOSED SITE PLAN

ELECTRICAL

- E-01 ELECTRICAL CORPORATION YARD STANDBY POWER SYSTEM
- E-02 ELECTRICAL LIFT STATION LS22 STANDBY POWER SYSTEM
- E-03 ELECTRICAL LIFT STATION LS29 STANDBY POWER SYSTEM

DATE:	11/06/2023
SCALE:	AS NOTED
DESIGNED:	RO
DRAWN:	RO
CHECKED:	MQ
PROJ. ENGR:	JJT

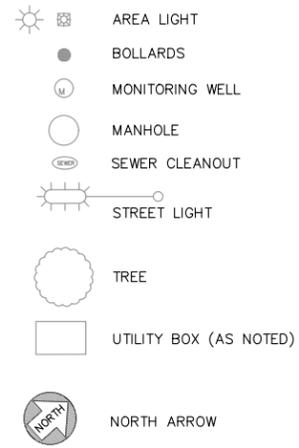
FREYER & LAURETA, INC.
 CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS
 144 North San Mateo Drive • San Mateo, CA 94401
 (650)344-9901 • www.freyerlaureta.com

DESCRIPTION	DATE
PRE-PURCHASE DESIGN PACKAGE	11/06/2023

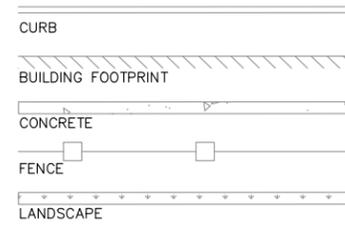
EMID EMERGENCY GENERATOR REPLACEMENT PROJECT
 TITLE SHEET
 FOSTER CITY, CALIFORNIA

SHEET	C-01
JOB NO.	342001

SYMBOLS



LINES



ABBREVIATIONS

AC	ASPHALT CONCRETE
ATS	AUTOMATIC TRANSFER SWITCH
BOL	BOLLARD
C	CONCRETE
CO	CLEAN OUT
E	ELECTRICAL BOX
EMID	ESTERO MUNICIPAL IMPROVEMENT DISTRICT
EX	EXISTING
FT	FEET
LF	LENGTH FOOT
MH	MANHOLE
PUE	PUBLIC UTILITY EASEMENT
SD	STORM DRAIN
SDMH	STORM DRAINAGE MANHOLE
SL	STREET LIGHT
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
UST	UNDERGROUND STORAGE TANK

DATE:	11/06/2023
SCALE:	AS NOTED
DESIGNED:	RO
DRAWN:	RO
CHECKED:	MQ
PROJ. ENGR:	JJT

FREYER & LAURETA, INC.
 CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS
 144 North San Mateo Drive • San Mateo, CA 94401
 (650)344-9901 • www.freyerlaureta.com

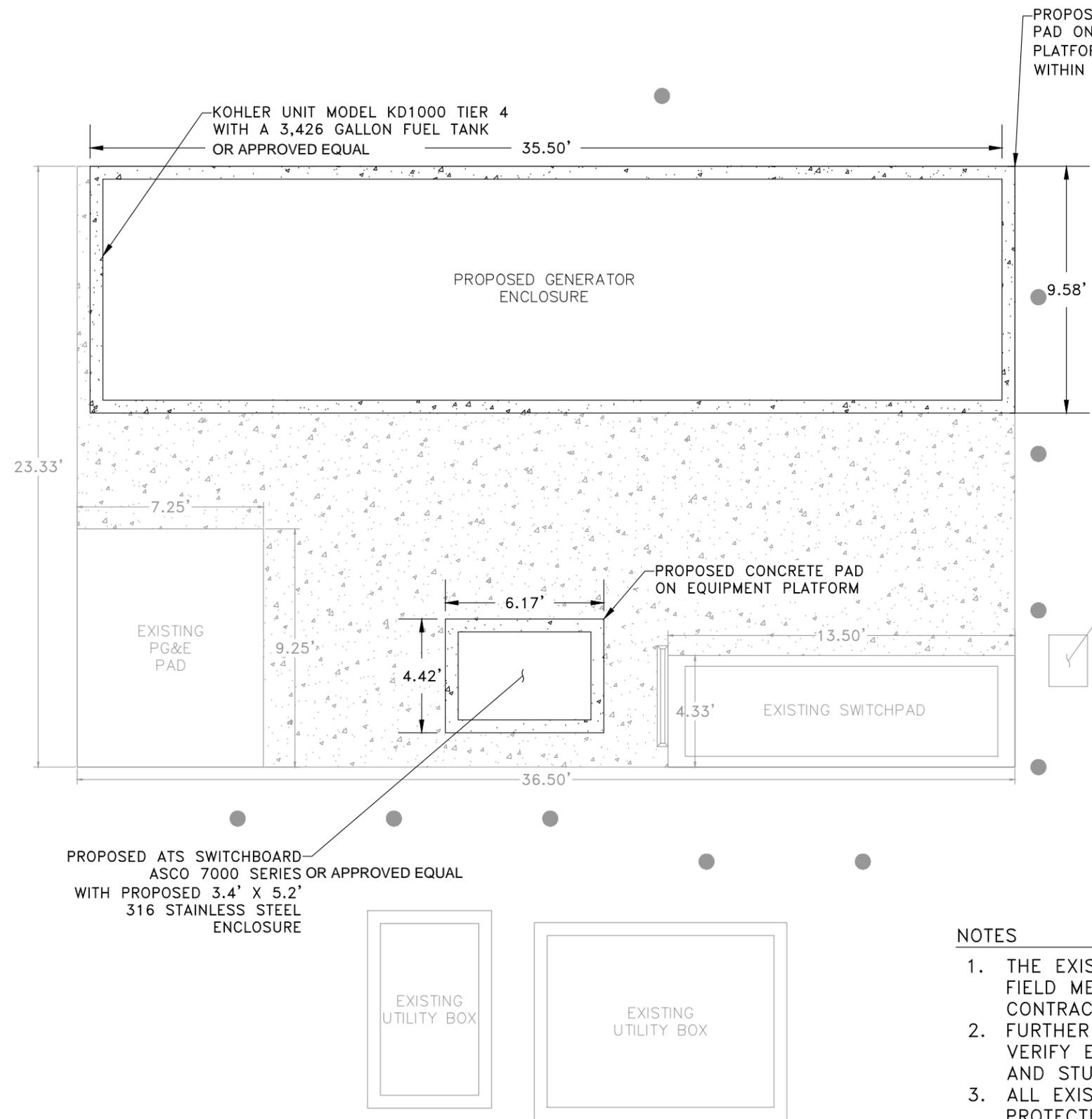
DESCRIPTION	DATE
PRE-PURCHASE DESIGN PACKAGE	11/06/2023

EMID EMERGENCY GENERATOR REPLACEMENT PROJECT
 SYMBOLS AND ABBREVIATIONS
 FOSTER CITY, CALIFORNIA

SHEET	C-02
JOB NO.	342001



SCALE
1" = 5'



PROPOSED RAISED CONCRETE GENERATOR PAD ON TOP OF EXISTING EQUIPMENT PLATFORM (PROPOSED GENERATOR PAD WITHIN THE EXISTING EQUIPMENT PLATFORM)

KOHLER UNIT MODEL KD1000 TIER 4 WITH A 3,426 GALLON FUEL TANK OR APPROVED EQUAL

PROPOSED GENERATOR ENCLOSURE

PROPOSED CONCRETE PAD ON EQUIPMENT PLATFORM

EXISTING PG&E PAD

EXISTING SWITCHPAD

EXISTING ELECTRICAL BOX

LEGEND

LIGHT POLE

BOLLARD

EQUIPMENT PLATFORM CONCRETE

PROPOSED ATS SWITCHBOARD ASCO 7000 SERIES OR APPROVED EQUAL WITH PROPOSED 3.4' X 5.2' 316 STAINLESS STEEL ENCLOSURE

EXISTING UTILITY BOX

EXISTING UTILITY BOX

NOTES

1. THE EXISTING SITE SHOWN IS THROUGH AS-BUILTS, FIELD MEASUREMENTS, AND AERIAL PHOTOS. CONTRACTOR TO VERIFY ALL MEASUREMENTS.
2. FURTHER FIELD INVESTIGATION SHALL OCCUR TO VERIFY EXISTING UNDERGROUND DUCT BANK CONDUITS AND STUB-UP LOCATIONS.
3. ALL EXISTING UTILITIES AND FEATURES SHALL BE PROTECTED UNLESS OTHERWISE NOTED.

DATE:	11/06/2023
SCALE:	AS NOTED
DESIGNED:	RO
DRAWN:	RO
CHECKED:	MQ
PROJ. ENGR:	JJT

FL FREYER & LAURETA, INC.
 CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS
 144 North San Mateo Drive • San Mateo, CA 94401
 (650)344-9901 • www.freyerlaureta.com

DESCRIPTION	DATE
PRE-PURCHASE DESIGN PACKAGE	11/06/2023

EMID EMERGENCY GENERATOR REPLACEMENT PROJECT
 CORPORATION YARD PUMP STATION 59 - PROPOSED SITE PLAN
 FOSTER CITY, CALIFORNIA

SHEET C-03
JOB NO. 342001

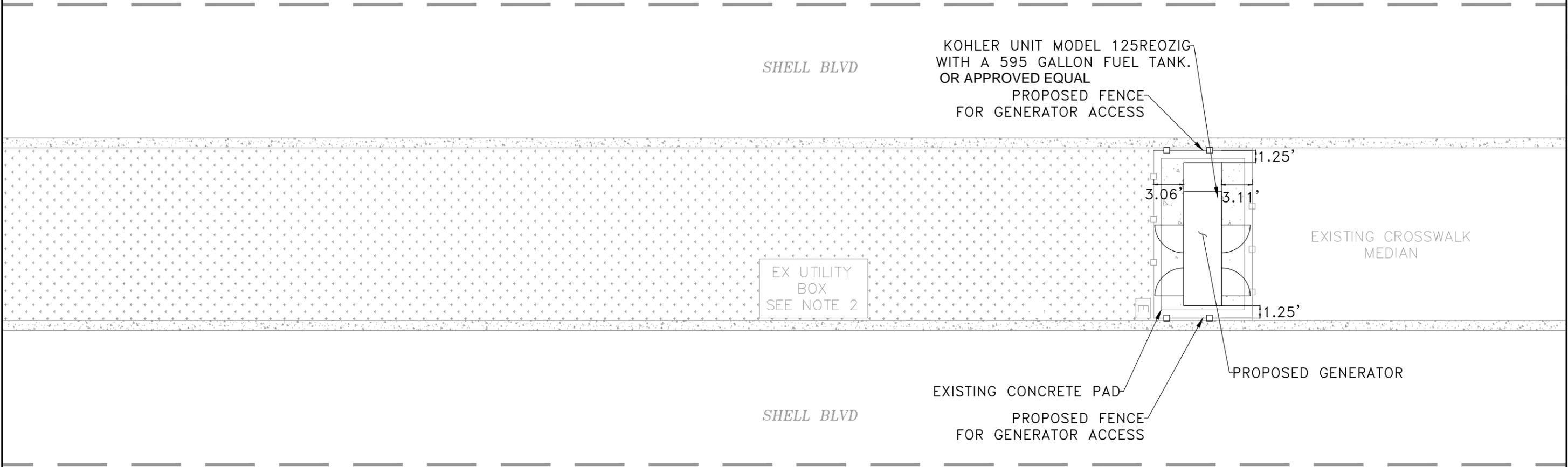
LEGEND

	FENCE
	CURB
	CONCRETE
	LANDSCAPE

- NOTES**
1. THE EXISTING SITE SHOWN IS THROUGH AS-BUILTS, FIELD MEASUREMENTS, AND AERIAL PHOTOS. CONTRACTOR TO VERIFY ALL MEASUREMENTS.
 2. FURTHER FIELD INVESTIGATION SHALL OCCUR TO VERIFY EXISTING UNDERGROUND DUCT BANK CONDUITS AND STUB-UP LOCATIONS.
 3. ALL EXISTING UTILITIES AND FEATURES SHALL BE PROTECTED UNLESS OTHERWISE NOTED.



SCALE
1" = 10'



DATE:	11/06/2023
SCALE:	AS NOTED
DESIGNED:	RO
DRAWN:	RO
CHECKED:	MQ
PROJ. ENGR:	JJT

FL FREYER & LAURETA, INC.
 CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS
 144 North San Mateo Drive • San Mateo, CA 94401
 (650)344-9901 • www.freyerlaureta.com

DESCRIPTION	DATE
PRE-PURCHASE DESIGN PACKAGE	11/06/2023

EMID EMERGENCY GENERATOR REPLACEMENT PROJECT
 LIFT STATION 22 - PROPOSED SITE PLAN
 FOSTER CITY, CALIFORNIA

SHEET C-04
JOB NO. 342001



SCALE

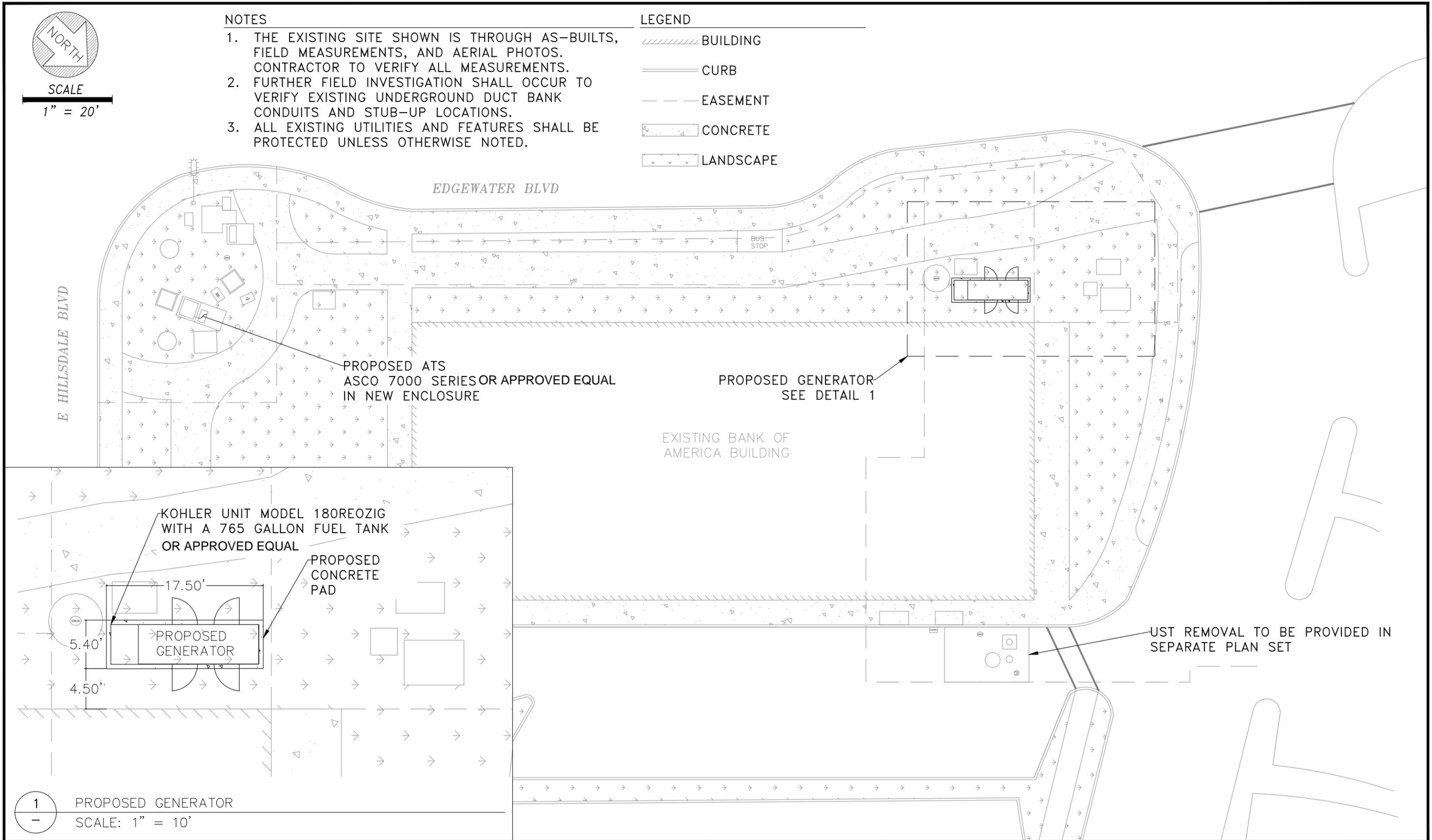
1" = 20'

NOTES

1. THE EXISTING SITE SHOWN IS THROUGH AS-BUILTS, FIELD MEASUREMENTS, AND AERIAL PHOTOS. CONTRACTOR TO VERIFY ALL MEASUREMENTS.
2. FURTHER FIELD INVESTIGATION SHALL OCCUR TO VERIFY EXISTING UNDERGROUND DUCT BANK CONDUITS AND STUB-UP LOCATIONS.
3. ALL EXISTING UTILITIES AND FEATURES SHALL BE PROTECTED UNLESS OTHERWISE NOTED.

LEGEND

- ////// BUILDING
- ==== CURB
- - - - EASEMENT
- CONCRETE
- ▨ LANDSCAPE



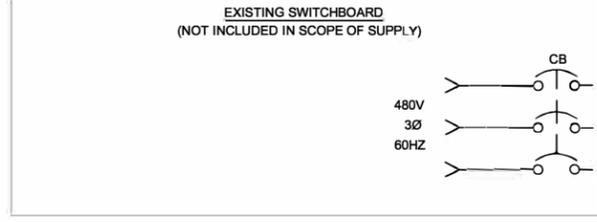
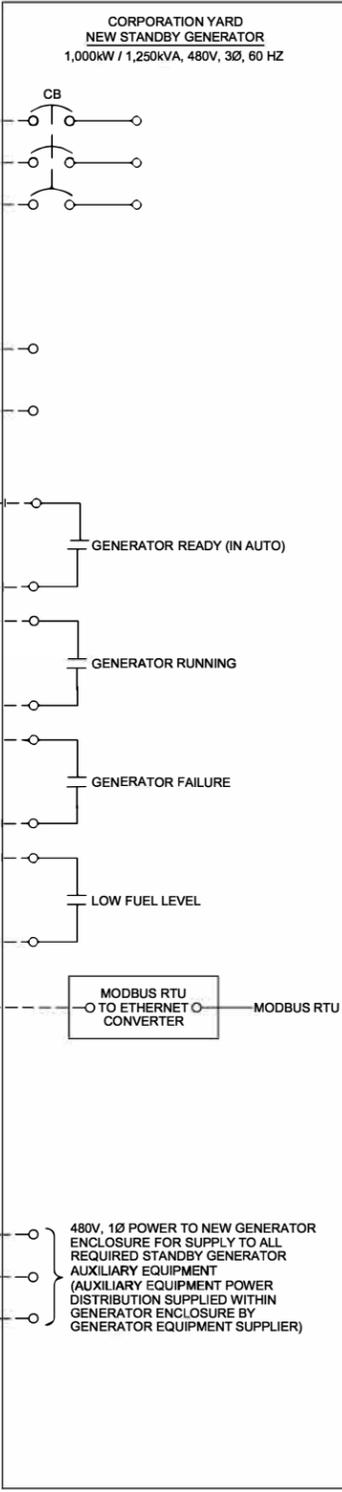
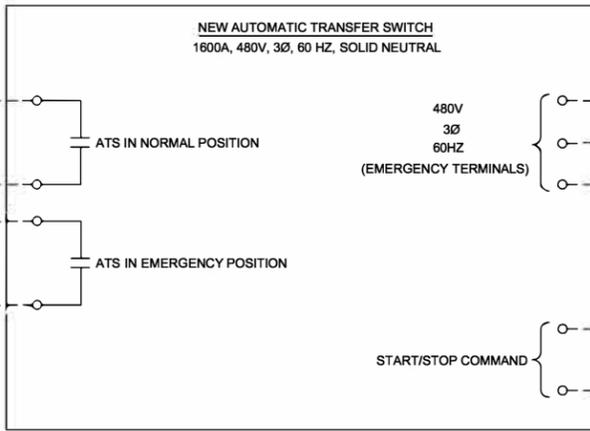
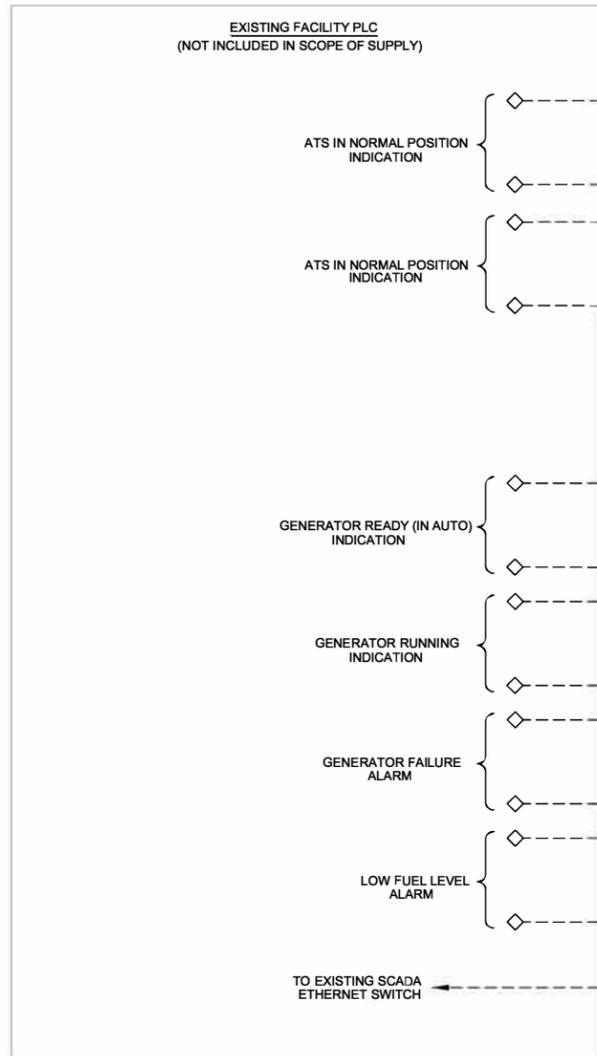
DATE:	11/06/2023
SCALE:	AS NOTED
DESIGNED:	RO
DRAWN:	RO
CHECKED:	MQ
PROJ. ENGR:	JJT

FREYER & LAURETA, INC.
 CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS
 144 North San Mateo Drive • San Mateo, CA 94401
 (650)344-9901 • www.freyerlaureta.com

DESCRIPTION	DATE
PRE-PURCHASE DESIGN PACKAGE	11/06/2023

EMID EMERGENCY GENERATOR REPLACEMENT PROJECT
LIFT STATION 29 - PROPOSED SITE PLAN
 FOSTER CITY, CALIFORNIA

SHEET	C-05
JOB NO.	342001



LEGEND:

◇ - NEW FIELD WIRING TERMINAL BLOCK (LOCATED ON EXISTING PLC BACKPAN)

----- NEW FIELD WIRING (PROVIDED BY OTHERS)

SCHEMATIC DIAGRAM 1

TYPICAL FOR:
CORPORATION YARD STANDBY POWER SYSTEM

DATE:	2/26/2024
SCALE:	NO SCALE
DESIGNED:	TB
DRAWN:	BEI
CHECKED:	BEI
PROJ. ENGR:	JJT

FREYER & LAURETA, INC.
CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS
150 Executive Park Blvd • Suite 4200 • San Francisco, CA 94134
(415) 534-7070 • www.freyerlaureta.com

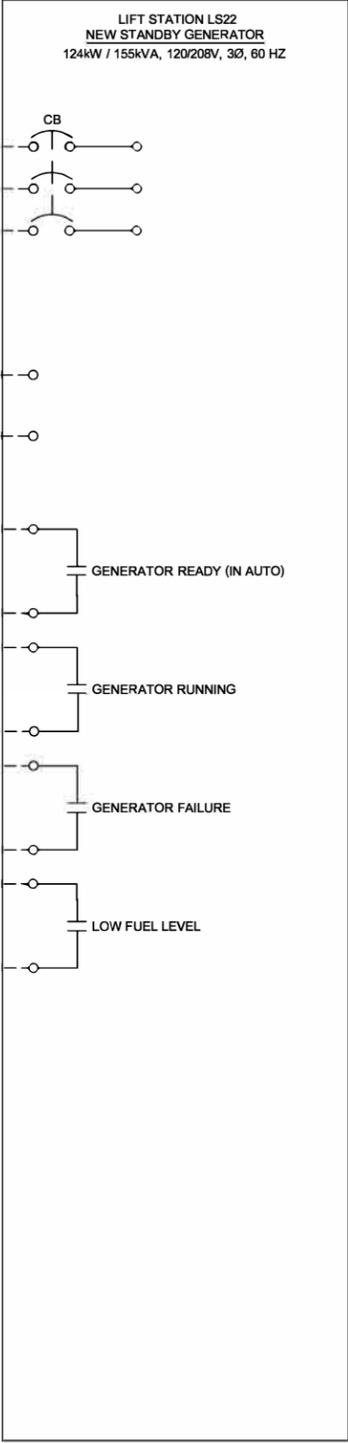
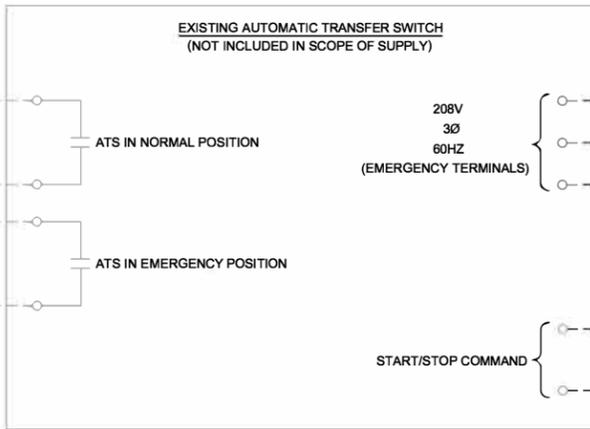
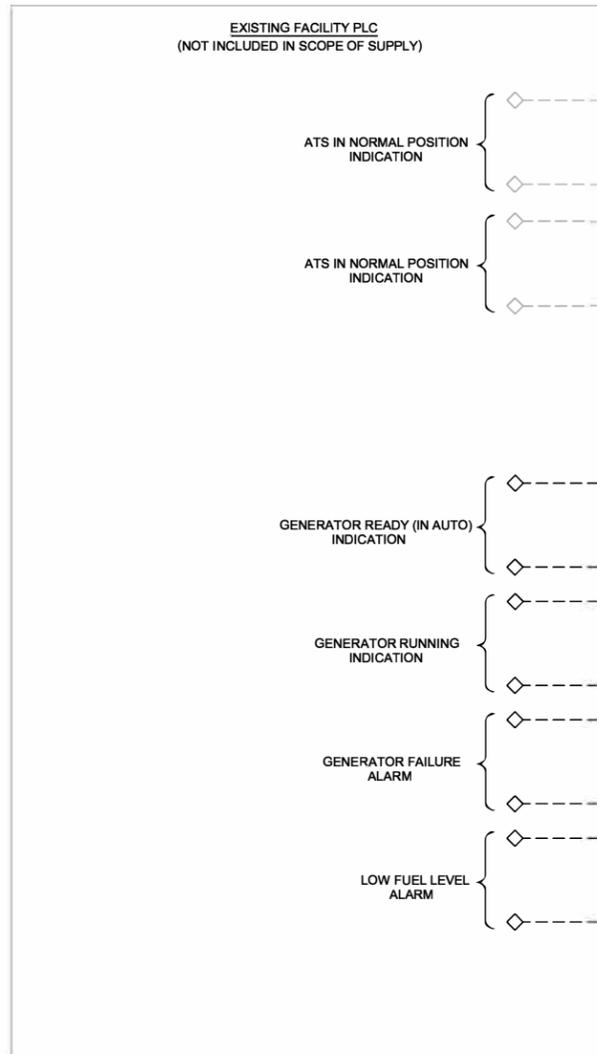
Beecher Engineering, Inc.

DESCRIPTION	DATE
PRE-PURCHASE DESIGN PACKAGE	2/26/2024



CIPP 455-705 EMID
EMERGENCY GENERATOR REPLACEMENT PROJECT
CORPORATION YARD
STANDBY POWER SYSTEM
FOSTER CITY, CALIFORNIA

SHEET	E-01
JOB NO.	342001



LEGEND:

◇ - NEW FIELD WIRING TERMINAL BLOCK
(LOCATED ON EXISTING PLC BACKPAN)

----- NEW FIELD WIRING
(PROVIDED BY OTHERS)

SCHEMATIC DIAGRAM 2

TYPICAL FOR:
LIFT STATION LS22 STANDBY POWER SYSTEM

DATE:	2/26/2024
SCALE:	NO SCALE
DESIGNED:	TB
DRAWN:	BEI
CHECKED:	BEI
PROJ. ENGR:	JJT

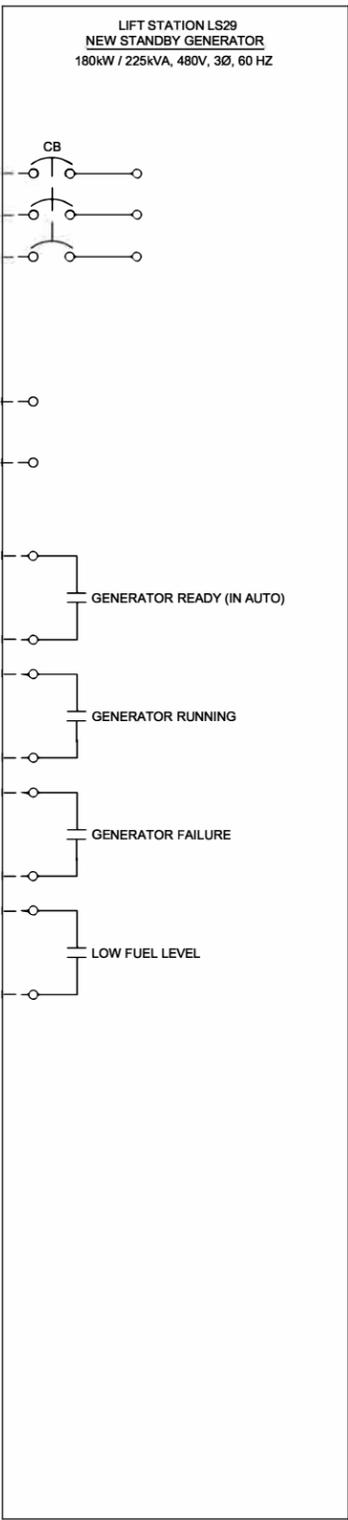
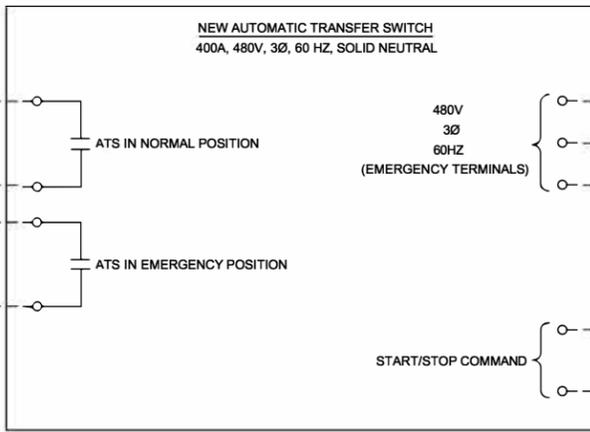
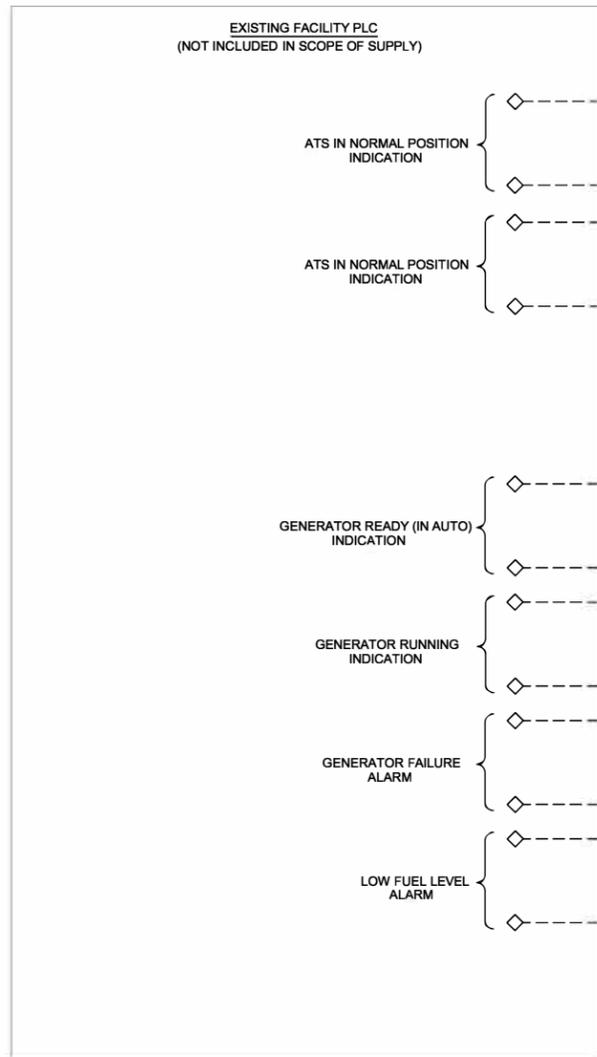


DESCRIPTION	DATE
PRE-PURCHASE DESIGN PACKAGE	2/26/2024



CIPP 455-705 EMID
EMERGENCY GENERATOR REPLACEMENT PROJECT
LIFT STATION LS22
STANDBY POWER SYSTEM
FOSTER CITY, CALIFORNIA

SHEET	E-02
JOB NO.	342001



LEGEND:
 ◇ - NEW FIELD WIRING TERMINAL BLOCK
 (LOCATED ON EXISTING PLC BACKPAN)
 - - - - - NEW FIELD WIRING
 (PROVIDED BY OTHERS)

SCHEMATIC DIAGRAM 3
 TYPICAL FOR:
 LIFT STATION LS29 STANDBY POWER SYSTEM

DATE:	2/26/2024
SCALE:	NO SCALE
DESIGNED:	TB
DRAWN:	BEI
CHECKED:	BEI
PROJ. ENGR:	JJT

FREYER & LAURETA, INC.
 CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS
 150 Executive Park Blvd • Suite 4200 • San Francisco, CA 94134
 (415) 534-7070 • www.freyerlaureta.com

Beecher Engineering, Inc.

DESCRIPTION	DATE
PRE-PURCHASE DESIGN PACKAGE	2/26/2024



CIPP 455-705 EMID
 EMERGENCY GENERATOR REPLACEMENT PROJECT
 LIFT STATION LS29
 STANDBY POWER SYSTEM
 FOSTER CITY, CALIFORNIA

SHEET	E-03
JOB NO.	342001