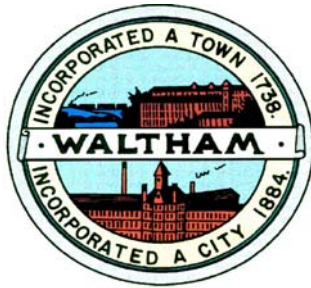


The City of Waltham



*Invites
Interested Parties
To propose the best offer and or bid
For the service or product herewith described:*

Generator Replacement, Pump Station #2 at 356 Second Avenue

*The bid opening will be held: Friday August 24, 2012 at 10:00 am
Pre-Bid Briefing and Inspection will be held at 356 Second Avenue:
Monday August 20, 2012 at 10:00 am*

Phone: 781-314-3244, Fax: 781-314-3245

Table of Contents:

- **Invitation to Bid**
- **Intent of the Project**
- **Agreement**
- **Instructions**
- **General Conditions**
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- **Compliance**
- **Bid Price**

Invitation to Bid

The City of Waltham

Purchasing Department

REQUEST FOR BID (RFB)

Under the rules of M.G.L. Chapter 30, 39m, the Chief Procurement Officer of the City of Waltham Purchasing Department hereby requests sealed bids for:

Generator Replacement, Pump Station #2 at 356 Second Avenue

Price Proposals will be received at the office of the Purchasing Agent, City Hall, 610 Main Street, Waltham MA 02452, until,

Friday August 24, 2012 at 10:00am

At which time and place the bids will be publicly opened and read.

Specifications and information available on line by visiting the Waltham Purchasing Department web site at www.city.waltham.ma.us/open-bids

BIDS MUST BE SIGNED AND ENCLOSED IN A SEALED ENVELOPE AND MARKED:

BID FOR: Generator Replacement, Second Avenue

A 5% Bid Bond or Certified Check must accompany each bid submitted and made payable to, and become the property of the City of Waltham, if the successful bidder refuses or neglects to comply with the terms of the Contract.

If the Bidder is a corporation, state your correct corporate name and State of incorporation. If Bidder is a partnership, state names and addresses of partners. If Bidder is a trust or other legal entity, state correct names and addresses of trustees or names and address of those legally authorized to bid and enter into contracts.

EXCEPTION OR ALTERNATES TO SPECIFICATIONS, TERMS OF SALE, AND DISCOUNTS AVAILABLE, MUST BE INCLUDED IN THE BID PRIOR TO OPENING DATE.

Intent of Project

**The Purchasing Department of the City of Waltham wishes to purchase labor
equipment and material for the replacement of the Generator at the Second Avenue
Pump Station # 2**

AGREEMENT

CITY OF WALTHAM

ARTICLE 1. This agreement, made this _____ day of _____, 2012 by and between the CITY OF WALTHAM, party of the first part, hereinafter called the CITY, by its MAYOR, and

hereinafter called the CONTRACTOR.

ARTICLE 2. Witnesseth, that the parties to this agreement, each in consideration of the agreement on the part of the others herein contained, do hereby agree, the CITY OF WALTHAM for itself, and said contractor for his heirs, executors, administrators and assigns as follows:

To furnish all equipment, machinery, tools and labor, to furnish and deliver all materials required to be furnished (except as otherwise specified) and deliver in and about the project and to do and perform all work in strict conformity with the provisions of this Contract and of the Notice to Bidders, bid, Project Manual, and Drawings hereto annexed. The said Notice to Bidders, bid, Project Manual, and Drawings are hereby made a part of this contract as fully and to the same effect as if the same had been set forth at length and incorporated in the contracts.

ARTICLE 3. In consideration of the foregoing premises the CITY agrees to pay and the CONTRACTOR agrees to receive as full compensation for everything furnished and done by the CONTRACTOR under this contract, including all work required by not included in the items herein mentioned, and also for all loss or damage arising out of the nature of the work aforesaid, or from the action of the elements, or from any unforeseen obstruction or difficulty encountered in the prosecution of the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work specified, and for well and faithfully completing the work, and the whole thereof, as herein provided, such prices as are set forth in the accompanying bid.

Date for final completion of the project is for 30 days after the date of the Notice to Proceed.

This Agreement entered into as of the day and year first written above.

CITY OF WALTHAM, MASSACHUSETTS

FOR THE CITY

Jeannette A. McCarthy, MAYOR,
City of Waltham
Date: _____

John B. Cervone, City Solicitor
Date: _____

APPROVED AS TO FORM ONLY

Stephen Casazza, City Engineer
Date: _____

Joseph Pedulla, Purchasing Agent
Date: _____

Paul Centofanti, Auditor
Date: _____

I CERTIFY THAT SUFFICIENT FUNDS
ARE AVAILABLE FOR THIS CONTRACT

FOR THE COMPANY

CONTRACTOR (Signature),
Date: _____

Company

Address

Instructions

INSTRUCTIONS FOR BIDDERS

1. **READ ALL DOCUMENTS.**

Bidders should familiarize themselves with all the documents contained herein; it is mandatory that all Bids be in compliance with all the provisions contained in said documents.

2. **FORMS AND ATTACHMENTS.**

Bids are to be completed on the forms provided ONLY and enclosed in a sealed envelope marked on the outside "BID (title)" and the name and address of bidder. Attachments submitted in addition to the Waltham Purchasing Department produced forms may not be considered.

3. **PRINTED OR TYPED RESPONSE.**

All information must be typewritten or printed in ink, including the price the bidder offers in the space as provided on the bid form.

4. **CORRECTIONS.**

Bids that are submitted containing cross outs, white outs or erasures, will be rejected.

All corrections or modifications to the original bid are to be submitted in a separate envelope, properly marked on the outside, "CORRECTION/ MODIFICATION TO BID (title)" and submitted prior to the bid opening.

ALL DOCUMENTS SUBMITTED WITH YOUR RESPONSE WILL BE INCORPORATED INTO THE CONTRACT.

5. **PRICE IS ALL INCLUSIVE.**

Bid prices shall encompass everything necessary for furnishing all items, materials, supplies or services as specified, and in accordance with the specifications, including proper packing, cost of delivery, and in the case of services, completion of same, as per specifications.

6. **PRICE DISCREPANCY.**

In the event of a discrepancy between the Unit Price and the Extension, the Unit Price shall prevail.

7. EXPLANATIONS, EXCEPTIONS

Explanations, exceptions or other information pertinent to the specifications may be made in writing and included in the same envelope with the bid.

8. BID DEPOSITS.

Bid deposits are to be made payable to the City of Waltham. In the event that the successful bidder fails to execute a Contract within (10) days of the receipt of said contract, such security shall be retained by the city as liquidated damages. Unsuccessful bidders' deposits will be returned immediately following the award to said successful bidder.

9. WITHDRAW.

A Bid may be withdrawn by written request prior to the schedule for the Bid Opening. No withdrawals are permitted after the bid opening date and time. Withdrawals after the bid opening date will cause the forfeit of the bid Deposit.

10. AWARD.

Bids will be awarded not later than (90) ninety days after the scheduled bid opening date, unless otherwise stated, in the specifications. Unless otherwise specified, bids will be evaluated on the basis of, completeness of your RFP response, responsiveness, responsibility, best price and experience.

11. AWARD CRITERIA.

Qualified and responsive proposals will be evaluated based on Price, Technical, and Compliance requirements:

12. DISCOUNTS.

Discounts for prompt payments will be considered when making awards.

13. TAX EXEMPT.

Purchases by the City of Waltham is exempt from any Federal, State or Massachusetts Municipal Sales and/or Excise Taxes.

14. SAMPLES/SUBMITTALS.

The City of Waltham may require the submission of samples/submittals either before or after the awarding of a contract. Samples/submittals are to be submitted, at no charge to the City, so as to ascertain the product's suitability. If specifically stated in the Bid that samples/submittals are required, said samples must be submitted with the Bid prior to the Official Bid Opening. Failure to submit said samples would be cause for rejection

of Bid. All samples/submittals must be called for and picked up within (30) thirty days of award or said samples will be presumed abandoned and will be disposed of.

15. **ACTIVE VENDOR LIST.**

Vendors who wish to remain on the Active Bid List must either submit a Bid, No Bid, or a letter requesting same, no later than the Official Bid Opening. This is applicable to those vendors who have received the Invitation to Bid.

16. **FUNDS APPROPRIATION.**

THE CONTRACT OBLIGATION ON BEHALF OF THE CITY IS SUBJECT TO PRIOR APPROPRIATION OF MONIES FROM THE GOVERNMENTAL BODY AND AUTHORIZATION BY THE MAYOR.

17. **THE AWARDING AUTHORITY RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS, OR ANY PART OF ANY BID, WHICH IN THE OPINION OF THE AWARDING AUTHORITY, IS IN THE BEST INTERESTS OF THE CITY OF WALTHAM.**

18. **THE TAX ATTESTATION CLAUSE, CERTIFICATION OF NON-COLLUSION AND THE CERTIFICATE OF VOTE AUTHORIZATION,** are required by statute and are an integral part of the Invitation for Bid and must be completed and signed by the person submitting the Bid, or by the person/persons who are officially authorized to do so. Failure to do so may disqualify the bid.

19. **STANDARD OF QUALITY.**

Where, in the specifications, one certain kind, type, catalog number, brand or manufacturer of material is named, it shall be regarded as the required standard of quality. Where two or more are named, these are presumed to be equal and the Bidder may select one or the other. If the Bidder proposes to offer a substitute as an equal, he shall so indicate on the Bid Form, the kind, type, catalog number, brand, or manufacturer of material that is offered as an equal, and describe where it differs from the specifications. Substituted items must be capable of performing all the functions and/or operational features described or indicated in the specifications. Failure to indicate the description of any substitute item on the Bid will be interpreted to mean that the Bidder will furnish the item or service as specified.

20. MODIFICATION.

No agreement, understanding, alteration or variation of the agreement, terms or provisions herein contained shall bind the parties, hereto unless made and executed in writing by the parties hereto.

21. ASSIGNMENT.

The final payment for work done under this Contract shall be made only after the Contractor has signed a statement under the penalty of perjury, certifying that he has completed the work described in the final estimate. Neither party hereto shall assign this Contract or sublet it in part or as a whole without the prior written consent of the other party hereto. The Contractor shall not assign any sum or sums due or becoming due to him hereunder without the prior written consent of the City.

22. DELIVERIES:

a) The Contractor shall pay all freight and delivery charges. The Waltham Purchasing Department does not pay for shipping and packaging expenses. Items must be delivered as stipulated in the specifications. All deliveries must be made to the inside of city buildings. Sidewalk deliveries will not be accepted. City personnel are not required to assist in the deliveries and contractors are cautioned to notify their shippers that adequate assistance must be provided at the point of delivery, when necessary.

b) All items of furniture must be delivered inside the building, set up, in place and ready for use. Deliveries are to be made between the hours of 8:30 a.m. and 3:00 p.m., Monday through Friday, except on holidays.

c) All damaged items, or items which do not comply with specifications will not be accepted and title therefore will not vest to the Waltham Purchasing Department until such items are accepted and signed for, in good order, by the receiving department.

d) The contractor must replace, without further cost to the Waltham Purchasing Department, such damaged or non-complying items before payment will be made.

23. LABELING.

All packages cartons or other containers must be clearly marked with (a) building and room destination; (b) description of contents of item number from specifications; (c) quantity; (d) City of Waltham Purchase Order Number and (e) Vendor's name and order number.

24. GUARANTEES.

Unless otherwise stipulated in the specifications, furniture, equipment and similar durable items shall be guaranteed by the contractor for a period of not less than one year from the date of delivery and acceptance by the receiving department. In addition, the manufacturer's guarantee shall be furnished. Any items provided under this contract which are or become defective during the guarantee period shall be replaced the contractor free of charge with the specific understanding that all replacements shall carry the same guarantee as the original equipment. The contractor shall make such replacement immediately upon receiving notice from the Purchasing Agent.

25. SINGLE VENDOR.

The Waltham Purchasing Department desires to award a single contract based on the Grand Total Price. However, where applicable, the City reserves the right to make multiple awards on a unit price basis if, in the opinion of the Waltham Purchasing Department, it is in the best interest of the Waltham Purchasing Department.

26. CHANGE ORDERS.

Change orders are not effective until, if, as and when signed by the Mayor and no work is to commence until the change orders are fully executed.

28. BID OPENING INCLEMENT WEATHER

If, at the time of the originally scheduled bid opening, City Hall is closed to inclement weather or another unforeseeable event, the bid opening will be extended until 2:00 PM on the next normal business day. Bids will be accepted until that date and time.

GENERAL CONDITIONS

GENERAL CONDITIONS

1. INFORMATION

All information shall come from the Office of the City Purchasing Agent. The Contractor shall inquire at this office for any information needed. Wherever the words "or equal as approved" are used, it is to be understood that the opinion of the City Purchasing Agent shall govern.

2. SUITS

The Contractor shall assume defense of and shall indemnify and hold the City and its agents harmless from all suits and claims against the City and its sub-contractors arising from the use of any invention, patent right labor or employment, or from any act of omission or neglect of the City, its agents, employees or any subcontractor in performing the work, under this contract.

3. LAWS AND REGULATIONS

The Contractor shall conform to all the applicable rules, regulations, laws and ordinances of the City of Waltham, the Commonwealth of Massachusetts, the United States of America and all agencies having jurisdiction over this contract.

4. PROTECTION OF PROPERTY

The Contractor shall take all proper precautions to protect the City's property from damage and unnecessary inconvenience. Any City property damaged by the Contractor in carrying out the provisions of this contract shall be restored to its original condition, by and at the expense of the Contractor.

5. PROTECTION OF PERSONS

The Contractor shall take all proper precautions to protect persons from injury, unnecessary inconvenience, and shall be responsible for his failure to do so. The Contractor agrees to hold the City harmless from any and all liabilities of every nature and description, which may be suffered through bodily injury, including death, to any person, by reason of negligence of the Contractor, his agents or employees, or any subcontractor.

6. CONTRACT DURATION.

This contract is for the period required to complete the project.

7. INSURANCE

A. WORKMAN'S COMPENSATION: The Contractor shall provide by insurance for the payment of compensation and furnishing of other benefits under Chapter 152 of the General Laws of the Commonwealth of Massachusetts to all persons to be employed under this contract, the premiums for which shall be paid by the Contractor.

B. COMPREHENSIVE GENERAL LIABILITY

Bodily Injury:	\$1,000,000 Each Occurrence
	\$2,000,000 Aggregate
Property Damage:	\$1,000,000 Each Occurrence
	\$2,000,000 Aggregate

C. AUTOMOBILE (VEHICLE) LIABILITY

Bodily Injury	\$2,000,000 Each Occurrence
Property Damage	\$1,000,000 Aggregate

D. UMBRELLA POLICY

General liability	\$2,000,000
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Your bid response must include a Certificate of Insurance with the above limits as a minimum. In addition, the Certificate of Insurance must have the following text contained in the bottom left box of the Certificate: **"The City of Waltham is a named Additional Insured for all Insurance"**. The Certificate of Insurance must be mailed directly to:

Office of the Purchasing Agent
Purchasing Department
City of Waltham
610 Main Street
Waltham, MA 02452

8. LABOR AND MATERIALS BOND

The Contractor agrees to execute and deliver to the City, a Labor and Materials or Payment Bond equal to 100% of the contract value. This contract shall not be in force until said bond has been delivered and accepted by the City. Bond to be issued by a company licensed by the Commonwealth of Massachusetts.

A LETTER FROM A SURETY COMPANY CERTIFYING THAT THE CONTRACTOR IS QUALIFIED AND CAPABLE OF OBTAINING THE ABOVE BONDS MUST BE INCLUDED WITH HIS/HERS BID.

9. PERSONNEL:

The Contractor shall employ a competent supervisor and all properly licensed personnel necessary to perform the services required in this contract. The City Purchasing Agent shall have the right to require the Contractor to remove and/or replace any of the personnel for nonperformance or for unprofessional behavior.

The City Purchasing Agent may require the Contractor to submit a weekly performance record of the areas and of the work performed, on forms approved by the City Purchasing Agent. The Contractor or his supervisor shall be available to inspect such work as required by the City Purchasing Agent.

10. PREVAILING WAGES

The Contractor is required to pay the prevailing wages as determined under the provisions of Chapter 149, Sections 26 and 27D of the Massachusetts General Laws, including the submission of weekly payrolls to the awarding authority.

This is a contract based on prevailing wages, if the contractors submits invoices that are based on the paid hourly rate of professional service providers, the city reserves the right to ask and receive payroll records and/or sworn affidavits showing the actual number of hours charged to the project. The prevailing Wage Schedule is available in the Purchasing Department and a copy will be provided upon requests. The Prevailing Wage Schedule is too large to attach here.

11. MATERIALS

The City or its Agent reserves the right to approve or reject any supplies, material or equipment used by the Contractor. The Contractor agrees to replace any supplies, material or equipment used by the Contractor. The Contractor agrees to replace any rejected supplies, materials or equipment, to the satisfaction of the City or its Agents.

12. TERMINATION OF CONTRACT

This contract may be terminated by the City upon deliverance to the Contractor of a five-day written notice of said termination.

13. CONTRACT OBLIGATIONS

Contract obligations on behalf of the City are subject to an annual appropriation to cover the contract obligation.

14. BIDDER EXPERIENCE EVALUATION

Each bidder shall submit with his bid, all the information relative to their experience and qualifications in performing the work required under this contract and shall have been in business for a minimum of five (5) years, in order for their bid to be considered.

15. NOT-TO-EXCEED AMOUNT

The bid amount proposed in your company's response is a "not-to- Exceed" amount unless the City makes changes, in writing, to the scope of work to be performed. The Change Order must be signed and approved by the City's Purchasing Agent, City Auditor, Law Department and the Mayor prior to the commencement of the change order work. No work is to begin until the proper approvals have been obtained. A change order will be priced at the unit price. Failure to comply with this procedure will result in the cancellation of the contract and the non-payment of services provided

16. FINANCIAL STATEMENTS.

The City may require, within five (5) days after the bid opening, a complete and detailed Financial Statement prepared by a Certified Public Account, to determine a bidder's financial stability.

17 BREACH OF CONTRACT/ NON PERFORMANCE

If the Contractor shall provide services in a manner, which is not to the satisfaction of the City, the City may request that the Contractor refurnish services at no additional cost to the City until approved by the City. If the Contractor shall fail to provide services, which are satisfactory to the City, the City in the alternative may make any reasonable purchase or Contract to purchase services in substitution for those due from the Contractor. The City may deduct the cost of any substitute Contract for nonperformance of services together with incidental and consequential damages from the Contract price and shall withhold such damages from sums due or to become due to the Contractor. If the damages sustained by the City exceed sums due or to become due, the Contractor shall pay the difference to the City upon demand. The Contractor shall not be liable for

any damages sustained by the City due to the Contractor's failure to furnish services under the terms of this Contract if such failure is in fact caused by the occurrence of a contingency the nonoccurrence of which was a basic assumption under which this Contract was made, including a state of war, embargoes, expropriation of labor strike or any unanticipated federal, state or municipal governmental regulation of order, provided that the Contractor has notified the City in writing of such cause within seven (7) days after its occurrence.

18 RIGHT TO AUDIT

The City of Waltham has the right to review and audit documents related to this contract. This right extends to any subcontractor, supplier or other entity used by the prime contractor to fulfill the obligations under this contract.

19. CITY ORDINANCE. APPROVAL OF CONTRACTS BY MAYOR, SEC. 3-12 OF THE CITY ORDINANCES.

All contract made by any department, board or commission where the amount involved is two thousand dollars (\$2,000) or more shall be in writing, and no such contract shall be deemed to have been made or executed until the approval of the Mayor is affixed thereto. Any construction contract shall, and all other contracts may, where the contract exceed five thousand dollars (\$5,000) be required to be accompanied by a bond with sureties satisfactory to the Mayor.

NOTE

Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal

Compliance

(Required Documents.)

Compliance

The compliance documents in this section must be completed, signed and returned **with your bid package**.

Purchasing Department

City of Waltham
610 Main Street
Waltham, MA 02452

Failure to submit the completed documents will cause the disqualification of the proposal.

Section Index

Check when Complete

- Non-collusion form and Tax Compliance form..... _____
- Corporation Identification Form..... _____
- Certificate of Vote Authorization..... _____
- Certificate of Insurance (showing all limits of WC &GL)..... _____
- Three (3) References..... _____
- 5% Bid Bond or Certified Check..... _____
- Debarment Certificate _____
- Prevailing Wage Certificate..... _____
- Right-to-know Law..... _____
- OSHA 10 Certificate for all Assigned Employees (MGL ch30, §39M and Ch 149) _____

Before the commencement of the Job, the contractor must provide to the above office:

- Performance Bond for 100% of the contract value and naming the City of Waltham
(letter must be included with your response)

Your Company's Name: _____

Service or Product Bid _____

NOTE: Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

NON-COLLUSION FORM AND TAX COMPLIANCE FORM

CERTIFICATE OF NON-COLLUSION

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity or group of individuals. The undersigned certifies that no representations made by any City officials, employees, entity, or group of individuals other than the Purchasing Agent of the City of Waltham was relied upon in the making of this bid

_____, _____
(Signature of person signing bid or proposal) Date

(Name of business)

TAX COMPLIANCE CERTIFICATION

Pursuant to M.G.L. c. 62C, & 49A, I certify under the penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

_____, _____
Signature of person submitting bid or proposal Date

Name of business

NOTE

Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

CERTIFICATE OF VOTE OF AUTHORIZATION

Date:

I _____, Clerk of _____ hereby certify that at a meeting of the Board of Directors of said Corporation duly held on the _____ day of _____ at which time a quorum was present and voting throughout, the following vote was duly passed and is now in full force and effect:

VOTED: That _____ (*name*) is hereby authorized, directed and empowered for the name and on behalf of this Corporation to sign, seal with the corporate seat, execute, acknowledge and deliver all contracts and other obligations of this Corporation; the execution of any such contract to be valid and binding upon this Corporation for all purposes, and that this vote shall remain in full force and effect unless and until the same has been altered, amended or revoked by a subsequent vote of such directors and a certificate of such later vote attested by the Clerk of this Corporation.

I further certify that _____ is duly elected/appointed _____ of said corporation

SIGNED:

(Corporate Seal)

Clerk of the Corporation:

Print Name: _____

COMMONWEALTH OF MASSACHUSETTS

County of _____

Date:

Then personally appeared the above named and acknowledged the foregoing instrument to be their free act and deed before me, _____

Notary Public;

My Commission expires: _____

CORPORATION IDENTIFICATION

The bidder for the information of the Awarding Authority furnishes the following information.

If a Corporation:

Incorporated in what state _____

President _____

Treasurer _____

Secretary _____

Federal ID Number _____

If a foreign (out of State) Corporation – Are you registered to do business in Massachusetts?

Yes _____, No _____

If you are selected for this work you are required under M.G.L.ch. 30S, 39L to obtain from the Secretary of State, Foreign Corp. Section, State House, Boston, a certificate stating that you Corporation is registered, and furnish said certificate to the Awarding Authority prior to the award.

If a Partnership: (Name all partners)

Name of partner _____

Residence _____

Name of partner _____

Residence _____

If an Individual:

Name _____

Residence _____

If an Individual doing business under a firm's name:

Name of Firm _____

Name of Individual _____

Business Address _____

Residence _____

Date _____

Name of Bidder _____

By _____

Signature

Title

Business Address

(POST OFFICE BOX NUMBER NOT ACCEPTABLE)

City

State

Telephone Number

Today's Date

PROVIDE THREE (3) SERVICE APPROPRIATE REFERENCES

1. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

2. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

3. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

NOTE

Failure to submit any of the required documents, in this or in other sections, with your bid response package will be cause for the disqualification of your company.

**WEEKLY PAYROLL RECORDS REPORT &
STATEMENT OF COMPLIANCE**

In accordance with Massachusetts General Law c. 149, §27B, a true and accurate record must be kept of all persons employed on the public works project for which the enclosed rates have been provided, A Payroll Form has been printed on the reverse of this page and includes all the information required to be kept by law. Every contractor or subcontractor is required to keep these records and preserve them for a period of three years from the date of completion of the contract.

In addition, every contractor and subcontractor is required to submit, on a weekly basis, a copy of his or her weekly payroll records to the awarding authority. For every week in which an apprentice is employed, a photocopy of the apprentice's identification card must be attached to the payroll report. Once collected, the awarding authority is also required to preserve those reports for three years.

In addition, each such contractor, subcontractor, or public body shall furnish to the awarding authority directly, within fifteen days after completion of its portion of the work, a statement, executed by the contractor, subcontractor or public body who supervises the payment of wages, in the following form:

STATEMENT OF COMPLIANCE

_____, 200_____

I _____, _____
(Name of signatory party) (Title)

I do hereby state that I pay or supervise the payment of the persons employed by

_____ on the _____
(Contractor, subcontractor or public body) (Building or project)

and that all mechanics and apprentices, teamsters, chauffeurs and laborers employed on said project have been paid in accordance with wages determined under the provisions of sections twenty-six and twenty-seven of chapter one hundred and forty nine of the General Laws.

Signature _____, Title _____

Print _____

WEEKLY PAYROLL REPORT FORM

Company Name: _____
 Prime Contractor
 Project Name: _____
 Subcontractor
 Awarding Auth.: _____ List Prime Contractor:
 Work Week Ending: _____ Employer Signature: _____
 Print Name & Title: _____

Final Report

Employee Name & Address	Work Classification	(A) Hours Worked							(B) Hourly Base Wage	(C) Employer Contributions			(F) [B+C+D+E] Hourly Total Wage (prev. wage)	(G) [A*F] Weekly Total Amount		
		S	M	T	W	T	F	S		(D) Pension	(E) Supp. Unemp.					
												Tot. Hrs.				

NOTE: Every contractor and subcontractor is required to submit a copy of their weekly payroll records to the awarding authority.

RIGHT TO KNOW LAW

Any vendor who receives an order or orders resulting from this invitation agrees to submit a Material Safety Data Sheet (MSDS) for each toxic or hazardous substance or mixture containing such substance, pursuant to M.G.L. c. 111F, §§8,9 and 10 and the regulations contained in 441 CMR 21.06 when deliveries are made. The vendor agrees to deliver all containers properly labeled pursuant to M.G.L. c. 111F §7 and regulations contained in 441 CMR 21.05. Failure to furnish MSDS and/or labels on each container may result in civil or criminal penalties, including bid debarment and action to prevent the vendor from selling said substances, or mixtures containing said substances within the Commonwealth. All vendors furnishing substances or mixtures subject to Chapter 111F or M.G.L. are cautioned to obtain and read the laws, rules and regulations referenced above. Copies may be obtained from the State House Bookstore, Secretary of State, State House, Room 117, Boston, MA (617) 727-2834.

Authorized Signature Indicating Compliance with the Right-to-know laws:

Signature

Date

Print Name

NOTE

Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

DEBARMENT CERTIFICATION

In connection with this bid and all procurement transactions, by signature thereon, the respondent certifies that neither the company nor its principals are suspended, debarred, proposed for debarment, declared ineligible, or voluntarily excluded from the award of contracts, procurement or non procurement programs from the Commonwealth of Massachusetts, the US Federal Government and /or the City of Waltham. "Principals" means officers, directors, owners, partners and persons having primary interest, management or supervisory responsibilities with the business entity. Vendors shall provide immediate written notification to the Purchasing Agent of the City of Waltham at any time during the period of the contract of prior to the contract award if the vendor learns of any changed condition with regards to the debarment of the company or its officers. This certification is a material representation of fact upon which reliance will be placed when making the business award. If at any time it is determined that the vendor knowingly misrepresented this certification, in addition to other legal remedies available to the city of Waltham, the contract will be cancelled and the award revoked.

Company Name _____

Address _____

City _____, State _____, Zip Code _____

Phone Number (____) _____

E-Mail Address _____

Signed by Authorized Company Representative:

Print name _____

Date _____

10 HOURS OSHA TRAINING CONFIRMATION

Chapter 306 of the Acts of 2004

CONSTRUCTION PROJECTS

AN ACT RELATIVE TO THE HEALTH AND SAFETY ON PUBLIC

The undersigned hereby certifies that all employees to be employed at a worksite for construction, reconstruction, alteration, remodeling, repair, installation, demolition, maintenance or repair of any public work or any public building estimated to cost more than \$10,000.00 have successfully completed a course in construction safety and health approved by the **United States Occupational Safety and Health Administration** that is at least **10 hours** in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first payroll report for each employee and will comply with all laws and regulations applicable to awards of subcontracts subject to section 44F.

Company Name: _____

Address: _____

Signature: _____

Title: _____

Print Name _____

Date

See Chapter 306 of the Acts of 2004

NOTE

Failure to submit any of the required documents, in this or in other sections, with your bid response package will be cause for the disqualification of your company.

BID PRICE FORM

(Follows)

TO THE AWARDING AUTHORITY

- A. The Undersigned proposes to furnish all labor and materials required for the City of Waltham called the Awarding Authority, according to the Contract Documents for the **Generator Replacement, Pump Station# 2 at 356 Second Avenue Waltham** for the Contract Price specified below, subject to Additions and Deductions according to the terms of the Specifications.
- B. This Bid includes Addenda Number(s):

ADDENDUM NUMBER	DATE	ADDENDUM NUMBER	DATE

- C. **The proposed Contract Price is:**

_____ **Dollars**
(words)

\$ _____
(figures)

- D. The Undersigned agrees to pay the premiums for the Performance and Payment Bonds furnished by Sub-Bidders as requested, and that all of the cost of all such premiums is included in the amount set forth in Item I of this Bid.
- E. The Undersigned agrees that, if selected as General Contractor, it will, within five days (Saturdays, Sundays, and legal Holidays excluded) after presentation by the Awarding Authority, execute a Contract according to the terms of this Bid and furnish a Performance Bond and a Labor and Materials or Payment Bond, each of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority and each in the Sum of the Contract Price, the premiums for which are to be paid by the General Contractor and are included in the Contract Price.
- F. The Undersigned hereby certifies it can furnish labor, that it can work in harmony with all other elements of labor employed or to be employed on the work, and that it will comply fully with all laws and regulations applicable to awards made subject to M.G.L. c.30, 39M.
- G. The Undersigned certifies under the penalties of perjury that this Bid is in all respects bona fide, fair, and made without collusion or fraud with any other person. As used in this Subsection the word "person" shall mean natural person, joint venture, partnership, corporation, or other business or legal entity.

- H. The Undersigned certifies under penalty of perjury that it is not currently debarred from doing public construction work in the Commonwealth under the provisions of M.G.L. c.29, §29F, or any other applicable debarment provisions of any other chapter of the General Laws, or any rule or regulation promulgated thereunder.
- I. The Undersigned agrees and warrants that complete familiarization with the Contract Documents and existing conditions has been achieved for the submission of this Bid and the performance of the work of this Contract and that the Contract Documents are adequate to produce the required result.

(Name of General Bidder)

(Signature and Title of
Person Signing Bid)

(Business Address)

(City, State, and Zip Code)

(Telephone Number)

Date:

(Facsimile Number)

(called the Bidder, which is):

check one of the following:

- a corporation, organized and existing under the laws of the State of _____ and duly authorized to sign for the corporation as evidenced by Document 006100.
- a partnership.
- an individual
- a joint venture (each joint venture shall sign).

The manner of signing for each individual, partnership, or corporation that is part of the joint venture shall be indicated and evidenced as before.

TECHNICAL SPECIFICATIONS

SECTION 00890

PERMITS

PART 1 – GENERAL

1.01 DESCRIPTION:

This Section provides specific information and defines specific requirements of the Contractor regarding the preparation and acquisition of permits required to perform the work of this project.

1.02 RELATED WORK:

- A. Section 01110, CONTROL OF WORK AND MATERIALS
- B. Section 02220, DEMOLITION

1.03 GENERAL REQUIREMENTS:

- A. The Owner has obtained or will obtain and pay for the permits listed below, which are required for this project. The Contractor shall assist in obtaining certain permits, as indicated. The Contractor shall obtain and pay for all other permits required, as defined under the Permits subsection of Section 00700, GENERAL CONDITION

<u>Permits by Owner</u>	<u>Status</u>
Building Permit	*
Electrical Permit	*

PART 2 - PRODUCTS

Not Used.

PART 3 – EXECUTION

3.01 PERFORM WORK IN ACCORDANCE WITH REQUIREMENTS:

- A. The Contractor shall perform the work in accordance with the Contract Documents, including the attached permits/order of conditions, and any applicable municipal requirements.

END OF SECTION

SECTION 01014

SCOPE AND SEQUENCE OF WORK

PART 1 – GENERAL

1.01 WORK INCLUDED:

A The Contractor shall furnish all labor, materials, equipment and incidentals required to complete the work at the Second Avenue (Legion Road) Pump Station as specified herein, including the following:

#356 Second Avenue (a.k.a. Legion Road, Pump Station No. 2)

1. *Control Room*

- a. Remove and dispose of the existing 123kW natural gas, water cooled standby generator.
- b. Furnish and install a new 125kW natural gas, air cooled generator on the existing concrete pad (adjust length of pad if necessary).
- c. Remove the existing louver in the wall. Furnish and install new intake louver in wall (expanding opening for larger unit).
- d. Cut new opening in roof for exhaust.
- e. Furnish and install exhaust duct work and louver through roof.
- f. Remove and replace the automatic transfer switch (ATS).

1.02 RELATED WORK:

- A. SECTION 01110 – CONTROL OF WORK AND MATERIALS

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 GENERAL:

- A. The Contractor shall be responsible for scheduling its activities and the activities of any subcontractors involved, to meet the completion date, or milestones, established for the contract. Scheduling of the work shall be coordinated with the Owner.

3.02 CONSTRUCTION SEQUENCING REQUIREMENTS:

Not applicable to this project

END OF SECTION

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SECTION 01110

CONTROL OF WORK AND MATERIALS

PART 1 – GENERAL

Not Used.

PART 2 – PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 HAULING, HANDLING AND STORAGE OF MATERIALS:

- A. The Contractor shall, at his own expense, handle and haul all materials furnished by him and shall remove any of his surplus materials at the completion of the work.
- B. The Contractor shall provide suitable and adequate storage for equipment and materials furnished by him that are liable to injury and shall be responsible for any loss of or damage to any equipment or materials by theft, breakage, or otherwise.
- C. The Contractor shall be responsible for all damages to the work under construction during its progress and until final completion and acceptance even though partial payments have been made under the Contract.

3.02 CARE AND PROTECTION OF PROPERTY:

The Contractor shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be promptly restored by the Contractor, at his expense, to a condition similar or equal to that existing before the damage was done, to the satisfaction of the Engineer.

3.03 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES:

- A. All existing buildings, utilities, pipes, poles, wires fences, curbing, property line markers and other structures which the Engineer decides must be preserved in place without being temporarily or permanently relocated, shall be carefully supported and protected from damage by the contractor. Should such property be damaged, it shall be restored by the Contractor, at no additional cost to the Owner.

- B. The Contractor shall determine the location of all underground structures and utilities (including existing water services, drain lines, electrical lines, and sewers). Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by Contractor.
- C. All property damaged by the Contractor's operations shall be restored to a condition at least equal to that in which it was found immediately before work was begun. Suitable materials and methods shall be used for such restoration.
- F. Restoration of existing property and structures shall be carried out as promptly as practicable and shall not be left until the end of the construction period.

3.04 MAINTENANCE OF FLOW:

- A. The Contractor shall at his own cost, provide for the flow of sewers and drains interrupted during the progress of the work, and shall immediately cart away and dispose of all offensive matter. The entire procedure of maintaining existing flow shall be fully discussed with the Engineer well in advance of the interruption of any flow.

3.05 REJECTED MATERIALS AND DEFECTIVE WORK:

- A. Materials furnished by the Contractor and condemned by the Engineer as unsuitable or not in conformity with the drawings or specifications shall forthwith be removed from the work by the Contractor, and shall not be made use of elsewhere in the work.
- B. Any errors, defects or omissions in the execution of the work or in the materials furnished by the Contractor, even though they may have been passed or overlooked or have appeared after the completion of the work, discovered at any time before the final payment is made hereunder, shall be forthwith rectified and made good by and at the expense of the Contractor and in a manner satisfactory to the Engineer.
- C. The Contractor shall reimburse the Owner for any expense, losses or damages incurred in consequence of any defect, error, omission or act of the Contractor or his employees, as determined by the Engineer, occurring previous to the final payment.

3.06 SANITARY REGULATIONS:

Sanitary conveniences for the use of all persons employed on the work, properly screened from public observation, shall be provided in sufficient numbers in such manner and at such locations as may be approved. The contents shall be removed and disposed of in a satisfactory manner as the occasion requires. The Contractor shall rigorously prohibit the committing of nuisances within, on or about the work. Any employees found violating these provisions shall be discharged and not again employed on the work without the written consent of the Engineer. The sanitary conveniences specified above shall be the obligation and responsibility of the Contractor.

3.07 SAFETY AND HEALTH REGULATIONS:

This project is subject to the Safety and Health regulations of the U.S. Department of Labor set forth in 29 CFR, Part 1926, and to the Massachusetts Department of Labor and Industries, Division of Industrial Safety "Rules and Regulations for the Prevention of Accidents in Construction Operations (454 CMR 10.0 et. seq.)." Contractors shall be familiar with the requirements of these regulations.

3.08 SITE INVESTIGATION:

The Contractor acknowledges that he has satisfied himself as to the conditions existing at the site of the work, the type of equipment required to perform this work, the quality and quantity of the materials furnished insofar as this information is reasonably ascertainable from an inspection of the site, as well as from information presented by the drawings and specifications made a part of this contract. Any failure of the Contractor to acquaint himself with available information will not relieve him from the responsibility for estimating properly the difficulty or cost of successfully performing the work. The Owner assumes no responsibility for any conclusion or interpretation made by the Contractor on the basis of the information made available by the Owner.

3.09 HANGERS, PADS, AND SUPPORTS:

- A. Unless otherwise indicated, hangers and supports shall be by the trade providing the supported item.
- B. Except where detailed or specified, design of hangers and supports shall be the responsibility of the Contractor. All parts of such hangers or supports shall be designed in accordance with accepted engineering practice, using a factor of safety of at least 2½.
- C. When proprietary hangers, etc., are supplied, satisfactory evidence of the strength of such items shall be furnished.
- D. Hangers for items hung from steel and concrete shall be centered on the vertical center of gravity of the beam.
- E. Locations and sizes of openings, sleeves, concrete pads, steel frames, and other equipment supports are indicated on the drawings for bidding purposes only. Final sizes and locations of such items shall be obtained from the shop drawings.

3.10 SLEEVES, HOLES, HANGERS, INSERTS, ETC.:

- A. Except where holes and openings are dimensioned, and hangers, inserts, and supports are fully called for on the architectural and structural drawings (or reference is made thereon to drawings containing such information) to accommodate mechanical or electrical items, they shall be by the mechanical or electrical trade concerned.
- B. Sleeves, inserts, anchors, etc., supplied under the mechanical and electrical contracts in sufficient time to so permit, shall be set in concrete, masonry, etc., or fastened to steel

deck, etc., by the respective architectural or structural trade. Where not supplied in sufficient time, installation of such items shall be the responsibility of the mechanical or electrical trade involved.

- C. Nothing shall be suspended from the steel roof deck and no fastenings made to it, except with the prior permission of the Engineer. Request for permission shall be accompanied by full details of the hanger or fastener, including the weight of the item to be suspended.
- D. Nailers and other wood members attached to steel or masonry, for which fasteners are not indicated on the design drawings or in the specification, shall be fastened with the equivalent of ½-inch diameter bolts at 3 feet o.c.
- E. Openings for mechanical and electrical items in finished areas of the building shall be closed off with near escutcheon plates or similar closures. These closures shall be by the mechanical or electrical trade involved.

3.11 ROOF PROTECTION:

Where work must be performed over completed roofing, the roofing shall be protected by 2 layers of ½-inch thick plywood, laid with joints in the second layer offset 1/2 sheet width and length from joints in the first layer. No material shall be stored or work performed on areas of roof which are not so protected.

3.12 ELECTRIC SERVICE:

- A. The Contractor shall make all necessary applications and arrangements and pay for all fees and charges for electrical energy for power and light necessary for the proper completion of this contract during its entire progress. The Contractor shall provide and pay for all temporary wiring, switches, connections, and meters.
- B. There shall be sufficient electric lighting so that all work may be done in a workmanlike manner where there is not sufficient daylight.

END OF SECTION

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SECTION 01140

SPECIAL PROVISIONS

PART 1 - GENERAL

Not used

PART 2 - PRODUCTS

Not used

PART 3 - EXECUTION

3.01 WATER FOR CONSTRUCTION PURPOSES:

- A. In locations where water is in sufficient supply, the Contractor may be allowed to use water without charge other construction purposes. The express approval of the Owner shall be obtained before water is used. Waste of water by the Contractor shall be sufficient cause for withdrawing the privilege of unrestricted use.
- B. If no water is available, the Contractor shall supply water at no additional cost to the Owner.

3.02 PIPE LOCATION:

Pipe shall be located substantially as indicated on drawings. The Owner reserves the right, acting through the Engineer, to make such modifications as may be deemed desirable to avoid interference with existing structures or for other reasons.

3.03 DIMENSIONS OF EXISTING STRUCTURES:

Where the dimensions and locations of existing structures are of critical importance in the installation or connections of new work, the Contractor shall verify such dimensions and locations in the field before the fabrication of any material or equipment that is dependent on the correctness of such information.

3.04 OCCUPYING PRIVATE PROPERTY:

The Contractor shall not enter upon nor occupy with men, equipment or materials any property outside of the public highways or Owner's easements, except with the written consent of the property owner or property owner's agent.

3.05 EXISTING UTILITY LOCATIONS – CONTRACTOR'S RESPONSIBILITY:

- A. The location of existing services and utilities shown on the drawings is based on available records. It is not warranted that all existing utilities and services are shown, or that shown locations are correct. The Contractor shall be responsible for having the utility companies locate their respective utilities on the ground prior to excavating.
- B. The Contractor shall coordinate all work involving utilities and shall satisfy himself as to the existing conditions of the areas in which he is to perform his work. He shall conduct and arrange his work so as not to impede or interfere with the work of other contractors working in the same or adjacent areas.

3.06 COORDINATION OF WORK:

The General Contractor shall be responsible for coordinating his own work as well as that of any subcontractors. He shall be responsible for notification of the Engineer when each phase of work is expected to begin and the approximate completion date.

3.07 TIME FOR COMPLETION OF CONTRACT:

The time for completion of this contract is stipulated in the Form of General Bid. The Bidder shall base his bid on completing the proposed work by the completion date stipulated in Section 00410, FORM OF GENERAL BID.

3.08 DESIGN OF EQUIPMENT:

Attention is directed to the fact that the layout of certain equipment is based on that of one manufacturer. If other equipment is submitted for approval, the Contractor shall prepare and submit for approval at his expense, detailed structural, mechanical and electrical drawings, equipment lists, maintenance requirements, and any other data required by the Engineer, showing all necessary changes and embodying all special features of the equipment he proposes to furnish. Such changes, if approved, shall be made at the expense of the Contractor.

3.10 SERVICES OF MANUFACTURER'S REPRESENTATIVE:

- A. The Contractor shall arrange for a qualified service representative, at a time suitable to the Engineer, from the company manufacturing or supplying certain equipment as indicated on the detailed specifications, to perform the duties described herein.
- B. After installation of the listed equipment has been completed and the equipment is presumably ready for operation, but before others operate it the representative shall inspect, operate, test, and adjust the equipment. The inspection shall include, but shall not be limited to, the following points as applicable:
 - 1. Soundness (without cracks or otherwise damaged parts); completeness in all details, as specified; correctness in setting, alignment, and relative arrangement of various parts; adequacy and correctness of packing, sealing and lubricants.

2. The operation, testing, and adjustment shall be as required to prove that the equipment is left in proper condition for satisfactory operation under the conditions specified. Where called for in the specifications, vibration readings shall be made and the equipment balanced accordingly.
3. On completion of his work, the Contractor shall submit in triplicate to the Engineer the manufacturer's or supplier representative's complete signed report of the results of his inspection, operation, adjustments, and test. The report shall include detailed descriptions of the points inspected, tests and adjustments made, quantitative results obtained if such are specified, and suggestions for precautions to be taken to ensure proper maintenance. The report shall also include a certificate that the equipment conforms to the requirements of the contract and is ready for permanent operation and that nothing in the installation will render the manufacturer's warranty null and void.
4. After the Engineer has reviewed the reports from the manufacturer's representative, the Contractor shall make arrangements to have the manufacturer's representative present when the field acceptance tests are made.

3.11 COMPLIANCE WITH PERMITS:

- A. The Contractor shall perform all work in conformance with requirements of the Permits, which appear in Section 00890 – PERMITS.

3.12 CUTTING, FITTING AND PATCHING:

- A. The Contractor shall do all cutting, fitting, or patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by work of other Contractors, as shown upon or reasonably implied by the drawings and the specifications for the completed structure, including all existing work.
- B. The Contractor shall not endanger any work by cutting, digging, or otherwise and shall not cut or alter the work of any other Contractor, save with the consent of the Engineer.
- C. All holes or openings required to be made in new or existing work, particularly at pipe, conduit, or other penetrations not covered by escutcheons or plates shall be neatly patched. All such holes shall be made completely watertight as approved by the Engineer.
- D. Size and locations of holes required in steel, concrete, or other structural or finish materials for piping, wiring, ducts, etc., which have not been located and detailed on the drawings shall be approved by the Engineer prior to layout and cutting thereof. All holes shall be suitably reinforced as required by the Engineer.

- E. Workmanship and materials of patching and repair work shall match the adjacent similar work and shall conform to the applicable sections of the specification. Patches and joints with existing work shall provide, as applicable in each case, visual, structural, and waterproofing continuity.

3.13 CONNECTIONS OR ABANDONMENT OF EXISTING WATER SYSTEMS:

- A. The Owner will, upon 24-hour notice from the Contractor, assist the Contractor by locating and opening or closing any and all valves required for draining or admitting water to the various sections of the water main as required to perform the proposed work. No damages shall be claimed by the Contractor for delays in dewatering pipelines nor shall any damages be claimed because of water leaking through closed valves after dewatering is completed.
- B. Connections to the existing distribution system shall be made with the mains under pressure unless the lines can be temporarily taken out of service as approved by the Owner.
- C. The Contractor will be required to make test excavations to ascertain that the proposed position of the connections will be clear of joints, fittings, or other obstructions.
- D. If any failure occurs in connection to existing mains, service shall be restored in the shortest possible time, the Contractor working around the clock, if necessary. He shall cooperate with the Owner in notifying the consumers or supplying emergency water. If required by Owner, the Contractor shall make connections to water mains during night hours, on Sunday or at other times of off-peak demand for water.

3.14 CONTRACTOR'S REPRESENTATIVE:

The Contractor shall designate a representative who will be available to respond to emergency calls by the Owner at any time day and night and on weekends and holidays should such a situation arise.

3.15 VISUAL RECORDING:

Before beginning construction, the Contractor shall make a color DVD recording along the entire work length. One complete recording, for the entire project length, shall be furnished to the Engineer prior to the start of the work. The visual recording shall be identified by street name, as applicable, and station.

3.16 OPERATOR TRAINING:

A trained representative of the manufacturer of all equipment shall instruct the plant operating personnel on the operation and maintenance of the equipment. The Owner reserves the right to videotape all training sessions.

3.17 HOURS OF CONSTRUCTION ACTIVITY:

- A. The Contractor shall conduct all construction activity between 7:00 a.m. and 5:00 p.m., Monday through Friday. No construction work shall be allowed on Saturdays, Sundays or Holidays without written authorization from the Owner.
- B. The Owner will provide personnel for assistance in locating and operating valves at no cost to the Contractor during the Owner's normal working hours (Monday through Friday 7:00 a.m. to 3:00 p.m.). When this assistance is required by the Contractor outside of the Owner's normal working hours the cost will be incurred by the Contractor at the prevailing overtime rate of pay for the personnel providing the assistance. The Owner will bill the Contractor directly.

3.21 MASSACHUSETTS DATA SECURITY REGULATIONS:

The Contractor is required to comply with data security regulations contained in 201 CMR 17.00 that have been established to safeguard personal information of Massachusetts residents contained in paper or electronic records. The Contractor shall not submit to the Engineer or Owner documents in paper or electronic form that contain personal information (person's name combined with one or more of the following – Social Security Number, driver's license number or state-issued identification card number, financial institution account number, or credit or debit card number). Any document submitted to the Engineer that violates this provision shall be returned to the Contractor and the Contractor shall remove personal information from the document prior to resubmitting it to the Engineer. The Contractor shall require each Subcontractor to also comply with the MA data security regulations insofar as they involve submittal of personal information to the Engineer and Owner.

END OF SECTION

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SECTION 01270

MEASUREMENT AND PAYMENT

1. GENERAL

- A. The following sections describe the measurement and payment for the work to be done under the respective items listed in the FORM OF GENERAL BID.
- B. The lump sum price stated in the FORM OF GENERAL BID shall constitute full compensation as herein specified, for all of the work completed in accordance with the drawings and specifications. All other activities required in connection with performance of the work, including all work required under Division 1, GENERAL REQUIREMENTS, whether described in the contract documents or mandated by applicable codes, permits and laws, will not be separately paid for unless specifically provided for in the form of general bid, but will be considered to be incidental to performance of the overall project.

2. ITEM 1

The lump sum price for Item 1 shall constitute full compensation for furnishing all labor, materials, tools and equipment and constructing the project, complete, as shown on the drawings and called for in the specifications.

END OF SECTION

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SECTION 01329

SUBMITTAL OF OPERATION AND MAINTENANCE MANUALS

PART 1 - GENERAL:

1.01 OPERATION AND MAINTENANCE MANUALS:

- A. As required by the General Conditions, and Section 01760 OPERATION AND MAINTENANCE MANUALS and Technical Specifications, the Contractor shall submit a schedule of Operation and Maintenance Manuals.
- B. In accordance with the schedule, the Contractor shall submit promptly to the Engineer, through its authorized resident representative at the job site, or by mail, attention: CSD, four (4) copies each of Operation and Maintenance Manual required as noted in the technical specifications sections for this Contract.
- C. The manuals shall be prepared in accordance with Specification Section 01760 - OPERATION AND MAINTENANCE MANUALS.
- D. Such manuals shall show the principal dimensions, weight, structural and operating features, space required, clearances, type and/or brand of finish or shop coat, grease fittings, etc., depending on the subject of the drawings.
- E. All manuals shall be submitted to the Engineer by and/or through the Contractor, who shall be responsible for obtaining manuals from his subcontractors and returning reviewed manuals to them. A Weston & Sampson standard shop drawing transmittal form with a description of the manual shall accompany each shipment of manuals.
- F. The Contractor shall be responsible for the prompt submittal and resubmittal, as necessary, of all manuals so that there will be no delay in the startup operation of the facility due to the absence of such manuals.
- G. The Engineer will review the manuals as to their general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Corrections of comments made in the manuals during the review does not relieve the Contractor from compliance with requirements of the Contract Documents.
- H. With few exceptions, O&M Manuals will be reviewed and returned to the Contractor within 30 days of submittal.

1.02 RELATED WORK:

- A. Section 01330 SUBMITTALS
- B. Section 01760 OPERATION AND MAINTENANCE MANUALS
- C. Section 01770 PROJECT CLOSEOUT

- 1.03 SUBMITTAL OF OPERATION AND MAINTENANCE MANUALS AND SPARE PARTS LISTS:
- A. Where reference is made in technical specification sections to operating and maintenance manuals and/or spare parts lists, the Contractor shall submit four copies to the Engineer for review in accordance with the following instructions:
1. Four complete sets of operation and maintenance instructions covering all equipment furnished under Sections 11, 13, 14, 15 and 16 requiring operation and maintenance manuals shall be delivered directly to Weston & Sampson Engineers, Inc, Five Centennial Drive, Peabody, MA 01960, Attention: CSD.
 2. Submission and approval of each set of manuals is considered an integral part of furnishing and installing respective equipment or systems. Measurement for payment of equipment requiring an operation and maintenance manual will not exceed 92 percent, until the manuals meet the requirements of the contract documents.
 3. Submit four copies of first draft volumes as required in Specification Sections 01329 and 01760. This first draft shall contain all currently available product data. One copy will be returned with comments.
 4. Submit four copies of completed second draft volumes in final form 90 days prior to startup and after Physical checkout to include the additional requirements set forth in paragraph 1.07.R of Section 01760 OPERATION AND MAINTENANCE MANUALS.
 5. Submit four copies of the Final Operation and Maintenance Manuals as required in Section 01770 PROJECT CLOSEOUT.
- B. If the submittal is complete and does not require any changes, an acknowledgement (copy of transmittal) will be returned noting status. If the submittal is incomplete or does require changes, corrections, additions, etc., one copy of the submittal will be returned with a copy of transmittal noting status.
- C. For systems requiring field adjustment and balancing, such as heating and ventilating, the Contractor shall submit separate test results and adjustment data on completion of the work, to be incorporated into the system manual.
- D. The information included in the manual shall be as described in the individual specification sections, but as a minimum shall contain clear and concise instructions for operating, adjusting, lubricating and maintaining the equipment, an exploded assembly drawing, identifying each part by number and a listing of all parts of the equipment, with part numbers and descriptions required for ordering spare parts. Spare parts lists shall include recommended quantity and price.

END OF SECTION

Document3

SECTION 01330

SUBMITTALS

PART 1 - GENERAL

1.01 WORK INCLUDED:

- A. The Contractor shall provide the Engineer with submittals as required by the contract documents.

1.02 RELATED WORK:

- A. Divisions of these specifications that require submittals.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.01 GENERAL:

- A. As required by the General Conditions, Contractor shall submit a schedule of shop and working drawing submittals.
- B. The Contractor shall submit the shop and working drawing submittals either electronically or hard copy.

3.02 ELECTRONIC SUBMITTALS:

- A. In accordance with the accepted schedule, the Contractor shall submit promptly to the Engineer by email (davida@wseinc.com) or on Compact Disc (mail to Weston & Sampson Engineers, attention: CSD), one electronic copy in Portable Document Format (PDF) of shop or working drawings required as noted in the specifications, of equipment, structural details and materials fabricated especially for this Contract.
- B. Each electronic copy of the shop or working drawing shall be accompanied by the Engineer's standard shop drawing transmittal form, included as Exhibit 1 of this section (use only for electronic submittals), on which is a list of the drawings, descriptions and numbers and the names of the Owner, Project, Contractor and building, equipment or structure.
- C. The Contractor shall receive a shop drawing memorandum with the Engineer's approval or comments via email.

3.03 HARD COPY SUBMITTALS:

- A. In accordance with the accepted schedule, the Contractor shall submit promptly to the Engineer, by mail (to Weston & Sampson Engineers, attention: CSD), six (6) copies each of shop or working drawings required as noted in the specifications, of equipment, structural details and materials fabricated especially for this Contract.
- B. Each shipment of drawings shall be accompanied by the Engineer's (if applicable) standard shop drawing transmittal form on which is a list of the drawings, descriptions and numbers and the names of the Owner, Project, Contractor and building, equipment or structure.

3.04 SHOP AND WORKING DRAWINGS:

- A. Shop and working drawings shall show the principal dimensions, weight, structural and operating features, space required, clearances, type and/or brand of finish of shop coat, grease fittings, etc., depending on the subject of the drawings. When it is customary to do so, when the dimensions are of particular importance, or when so specified, the drawings shall be certified by the manufacturer or fabricator as correct for this Contract.
- B. All shop and working drawings shall be submitted to the Engineer by and/or through the Contractor, who shall be responsible for obtaining shop and working drawings from his subcontractors and returning reviewed drawings to them. All shop and working drawings shall be prepared on standard size, 24-inch by 36-inch sheets, except those, which are made by changing existing standard shop or working drawings. All drawings shall be clearly marked with the names of the Owner, Project, Contractor and building, equipment or structure to which the drawing applies, and shall be suitably numbered. Each shipment of drawings shall be accompanied by the Engineer's (if applicable) standard shop drawing transmittal form on which is a list of the drawings, descriptions and numbers and the names mentioned above.
- C. Only drawings that have been prepared, checked and corrected by the fabricator should be submitted to the Contractor by his subcontractors and vendors. Prior to submitting drawings to the Engineer, the Contractor shall check thoroughly all such drawings to satisfy himself that the subject matter thereof conforms to the Contract Documents in all respects. Shop drawings shall be reviewed and marked with the date, checker's name and indication of the Contractor's approval, and only then shall be submitted to the Engineer. Shop drawings unsatisfactory to the Contractor shall be returned directly to their source for correction, without submittal to the Engineer. Shop drawings submitted to the Engineer without the Contractor's approval stamp and signature will be rejected. Any deviation from the Contract Documents indicated on the shop drawings must be identified on the drawings and in a separate submittal to the Engineer, as required under subsection 6.17 Shop Drawings and Samples; D. Submittal Procedures, Paragraph 3 of the 1996 General Conditions.

- D. The Contractor shall be responsible for the prompt submittal and resubmittal, as necessary, of all shop and working drawings so that there will be no delay in the work due to the absence of such drawings.
- E. The Engineer will review the shop and working drawings as to their general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Corrections of comments made on the drawings during the review do not relieve the Contractor from compliance with requirements of the Contract Documents. The Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner. The review of the shop drawings is general and shall not relieve the Contractor of the responsibility for details of design, dimensions, code compliance, etc., necessary for interfacing with other components, proper fitting and construction of the work required by the Contract and for achieving the specified performance. The Engineer will review submittals two times: once upon original submission and a second time if the Engineer requires a revision or corrections. The Contractor shall reimburse the Owner amounts charged to the Owner by the Engineer for performing any review of a submittal for the third time or greater.
- F. With few exceptions, shop drawings will be reviewed and returned to the Contractor within 30 days of submittal.
- G. No material or equipment shall be purchased or fabricated especially for this Contract nor shall the Contractor proceed with any portion of the work, the design and details of which are dependent upon the design and details of equipment or other features for which review is required, until the required shop and working drawings have been submitted and reviewed by the Engineer as to their general conformance and compliance with the project and its Contract Documents. All materials and work involved in the construction shall then be as represented by said drawings.
- H. Two copies of the shop and working drawings and/or catalog cuts will be returned to the Contractor. The Contractor shall furnish additional copies of such drawings or catalog cuts when he needs more than two copies or when so requested.

3.05 SAMPLES:

- A. Samples specified in individual Sections include, but are not necessarily limited to, physical examples of the work such as sections of manufactured or fabricated work, small cuts or containers of materials, complete units of repetitively-used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effect, graphic symbols, and units of work to be used by the Engineer or Owner for independent inspection and testing, as applicable to the work.

- B. The number of samples submitted shall be as specified. Submittal and processing of samples shall follow the procedures outlined for shop and working drawings unless the specifications call for a field submittal or mock-up.
- C. Acceptance of samples will be acknowledged via a copy of the transmittal noting status. When samples are not acceptable, prompt resubmittal will be required.

3.06 OPERATING AND MAINTENANCE MANUALS AND SPARE PARTS LISTS:

- A. Submit operation and maintenance manuals and spare parts lists in accordance with Section 01329 SUBMITTAL OF OPERATION AND MAINTENANCE MANUALS.

END OF SECTION

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EXHIBIT 1 TO SECTION 01330 SUBMITTALS
SHOP DRAWING TRANSMITTAL FORM



Shop Drawing Transmittal

Instructions for Preparing Transmittal

No action will be taken on any item unless accompanied by this form. Type or print all entries.

TRANSMITTAL NOS. to be consecutive (1, 2, 3, etc.).

Each resubmittal of same item shall use same number with suffix letter (A, B, etc.).

SPEC. SECT. NO: Only one spec. section no. to each transmittal.

DESCRIPTION: Complete identification of document or group of documents.

SOURCE: Originator of document(s) being submitted.

DRAWING NO: Identification of document(s).
NO. of COPIES: Usually 6 or as directed/specified.

CONTRACT DRAWING REFERENCE: Contract drawing number(s) showing details of document(s) being submitted.

SPECIAL INSTRUCTIONS: Special cases and emergencies, changes in distribution and special handling requests, etc. should be entered here.

SIGNATURE OF CONTRACTOR: Signature of individual who reviews and approves material prior to submittal to engineer.

Contractor to retain last copy. Submit original with two pink and two yellow copies.

THIS SECTION TO BE COMPLETED BY CONTRACTOR							
TRANSM. NO.	SPEC. SECT. NO.	DATE / /	CONTRACTOR'S JOB NO.	W&S JOB NO.			
PROJECT NAME & CONTRACT NO.			LOCATION				
Attention: CSD Weston & Sampson Engineers, Inc. 5 Centennial Drive Peabody, MA 01960-7985			(CONTRACTOR) F R O M				
ITEM NO.	DESCRIPTION	SOURCE	DRAWING NO. CATALOG NO. BROCHURE, ETC.	NO. OF COPIES	CONTRACT DRAWING REF.	BY W&S ACTION CODE	REVIEWED BY DATE
1							
2							
3							
4							

THIS CERTIFIES THAT ALL ITEMS SUBMITTED HERewith HAVE BEEN CHECKED BY THE CONTRACTOR, ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, EXCEPT AS NOTED, AND ARE APPROVED BY THE CONTRACTOR FOR THIS PROJECT.
(FOR CONTRACTOR)
SIGNATURE & TITLE:

THIS SECTION TO BE COMPLETED BY W&S			
SPECIAL INSTRUCTIONS:		FIELD OFFICE	
a. INSTALLATION SHALL PROCEED ONLY WHEN ACTION CODE IS 1 or 2. b. ACTION CODED 3 SHALL BE RESUBMITTED WITHIN TIME LIMIT SET IN CONTRACT. c. REVIEW DOES NOT RELIEVE CONTRACTOR FROM RESPONSIBILITY OF COMPLIANCE WITH ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS.		RECD BY	DATE / /
		BY	DATE / /



Please! BEAR DOWN WHEN HANDWRITING — THIS IS A 6 COPY FORM & THE LAST COPY IS YOURS!

SECTION 01735

CUTTING, CORING AND PATCHING

PART 1 - GENERAL

1.01 WORK INCLUDED:

This Section covers the cutting, coring, rough and finish patching of holes and openings in existing structures.

1.02 RELATED WORK:

A. SECTION 03302 FIELD CONCRETE

PART 2 - PRODUCTS

2.01 SEALING MATERIALS:

- A. Mechanical seals shall be modular, adjustable, bolted, mechanical type consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and sleeve. The seal shall be rated by the manufacturer for 40 feet of head or 20 psig. Mechanical seals shall be Link-Seal, manufactured by Thunderline Corp., Wayne, MI., or approved equal.
- B. Sealant shall be a two part foamed silicone elastomer as manufactured by Dow Corning Co., product No. 3-6548 silicone R.T.V.; 3M brand fire barrier products caulk C.P. 25 and 3M brand putty 303; Flame-Safe fire stop systems Fig. No. FS-500 by Thomas & Betts Corporation, or approved equal. Packing shall be a fire retardant pliable material, Fig. 310 by Sealtite Co.; White Oakum W.S.-600 by American Manufacturing Co., or approved equal. Sealant bead configuration, depth and width shall be in accordance with manufacturer's recommendations.

2.02 MISCELLANEOUS MATERIALS:

- A. Bonding compound shall be Sikadur Hi-Mod epoxy by Sika Corporation, or equivalent by Euclid Chemical Corporation, Master Builders Company, or approved equal.
- B. Non-shrink grout shall be Masterflow 713 by Master Builders Company; Euco N-S by Euclid Chemical Co.; Five Star Grout by U.S. Grout Corp. or approved equal.
- C. Materials for finish patching shall be equal to those of adjacent construction.

PART 3 - EXECUTION

3.01 GENERAL:

- A. The Contractor shall leave all chases or openings for the installation of his own or any other contractor's or subcontractor's work, or shall cut the same in existing work, and shall see that all sleeves or forms are at the work and properly set in ample time to prevent delays. He shall see that all such chases, openings, and sleeves are located accurately and are of proper size and shape and shall consult with the Engineer and the contractors and subcontractors concerned in reference to this work.
- B. In case of his failure to leave or cut all such openings or have all such sleeves provided and set in proper time, Contractor shall cut them or set them afterwards at his own expense, but in so doing he shall confine the cutting to the smallest extent possible consistent with the work to be done. In no case shall piers or structural members be cut without the written consent of the Engineer.
- C. The Contractor shall not cut or alter the work of any subcontractor or any other contractor, nor permit any of his subcontractors to cut or alter the work of any other contractor or subcontractor, except with the written consent of the contractor or subcontractor whose work is to be cut or altered or with the written consent of the Engineer. All cutting and patching or repairing made necessary by the negligence, carelessness, or incompetence of the Contractor or any of his subcontractors shall be done by or at the expense of the Contractor and shall be the responsibility of the Contractor.
- D. All cutting and coring shall be performed in such a manner as to limit the extent of patching.
- E. All holes cut through concrete and masonry walls, slabs or arches shall be core drilled unless otherwise approved. No structural members shall be cut without the approval of the Engineer and all such cutting shall be done in a manner required by him. No holes may be drilled in beams or other structural members without obtaining prior approval. All work shall be performed by mechanics skilled in this type of work.

3.02 CORING:

- A. Coring shall be performed with an approved non-impact rotary tool with diamond core drills. Size of holes shall be suitable for pipe, conduit, sleeves, equipment or mechanical seals to be installed.
- B. If holes are cored through floor slabs they shall be drilled from below.
- C. All equipment shall conform to OSHA standards and specifications pertaining to plugs, noise and fume pollution, wiring and maintenance.

- D. Provide protection for existing equipment, utilities and critical areas against water or other damage caused by drilling operation.
- E. Slurry or tailings resulting from coring operations shall be vacuumed or otherwise removed from the area following drilling.

3.03 CUTTING:

- A. Cutting shall be performed with a concrete saw and diamond saw blades of proper size and application.
- B. Provide for control of slurry generated by sawing operation on both sides of wall or slab.
- C. When cutting a reinforced concrete wall, the cutting shall be done so as not to damage bond between the concrete and reinforcing steel left in the structure. Cut shall be made so that steel neither protrudes nor is recessed from the face of the cut.
- D. Adequate bracing of area to be cut shall be installed prior to start of cutting. Check area during sawing operations for partial cracking and provide additional bracing as required to prevent a partial release of cut area during sawing operations.
- E. Provide equipment of adequate size to remove cut panel.
- F. For cutting a trench in a floor slab, a full-depth cut shall be made using a concrete saw for the desired width of the trench. A partial-depth cut shall be made to expose the reinforcing bars. The width of the partial cut shall be to the required lap length of the reinforcing bars. Care shall be taken not to cut exposed reinforcing bars but if any are cut, dowel holes shall be drilled and dowels epoxied in. Reinforcing of the same size, as the existing shall be tied to the existing exposed reinforcing and/or dowels with the proper lap length.

3.04 PATCHING:

Rough patching shall be such as to bring the cut or cored area flush with existing construction unless otherwise shown. Finish patching shall match existing surfaces as approved.

Trenches in floor slabs shall be repaired as described in 3.03F above and concrete meeting the requirements of Section 03302 FIELD CONCRETE shall be poured and cured.

END OF SECTION

SECTION 01740

CLEANING UP

PART 1 - GENERAL

1.01 DESCRIPTION:

The Contractor must employ at all times during the progress of his work adequate cleanup measures and safety precautions to prevent injuries to persons or damage to property. The Contractor shall immediately, upon request by the Engineer provide adequate material, equipment and labor to cleanup and make safe any and all areas deemed necessary by the Engineer.

1.02 RELATED WORK:

- A. Section 00700 GENERAL CONDITIONS
- B. Section 01110 CONTROL OF WORK AND MATERIALS
- C. Section 01140 SPECIAL PROVISIONS

PART 2 - PRODUCTS

Not applicable

PART 3 - EXECUTION

2.01 DAILY CLEANUP:

- A. The Contractor shall clean up, at least daily, all refuse, rubbish, scrap and surplus material, debris and unneeded construction equipment resulting from the construction operations and sweep the area. The site of the work and the adjacent areas affected thereby shall at all times present a neat, orderly and workmanlike appearance.
- B. Upon written notification by the Engineer, the Contractor shall within 24 hours clean up those areas, which in the Engineer's opinion are in violation of this section and the above referenced sections of the specifications.
- C. If in the opinion of the Engineer, the referenced areas are not satisfactorily cleaned up, all other work on the project shall stop until the cleanup is satisfactory.

2.02 MATERIAL OR DEBRIS IN DRAINAGE FACILITIES:

- A. Where material or debris has washed or flowed into or has been placed in existing watercourses, ditches, gutters, drains, pipes, structures, such material or debris shall be entirely removed and satisfactorily disposed of during progress of the work, and the ditches, channels, drains, pipes, structures, and work shall, upon completion of the work, be left in a clean and neat condition.

2.03 REMOVAL OF TEMPORARY BUILDINGS, STRUCTURES AND EQUIPMENT:

- A. On or before completion of the work, the Contractor shall, unless otherwise specifically directed or permitted in writing, tear down and remove all temporary buildings and structures built by him; shall remove all temporary works, tools and machinery or other construction equipment furnished by him; shall remove all rubbish from any grounds which he has occupied; shall remove silt fences and hay bales used for trapping sediment; and shall leave the roads and all parts of the property and adjacent property affected by his operations in a neat and satisfactory condition.

2.04 RESTORATION OF DAMAGED PROPERTY:

- A. The Contractor shall restore or replace, when and as directed, any property damaged by his work, equipment or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. To this end the Contractor shall do as required all necessary highway or driveway, walk and landscaping work. Materials, equipment, and methods for such restoration shall be as approved by the Engineer.

2.05 FINAL CLEANUP:

- A. Before acceptance by the Owner, the Contractor shall perform a final cleanup to bring the construction site to its original or specified condition. This cleanup shall include removing all trash and debris off of the premises. Before acceptance, the Engineer shall approve the condition of the site.

END OF SECTION

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SECTION 01750

EQUIPMENT CHECKOUT AND TESTING

PART 1 - GENERAL

1.01 DESCRIPTION:

- A. The physical checkout and testing requirements in this Section are in addition to those requirements defined in the technical specifications.

1.02 RELATED WORK:

- A. Section 01752, STARTUP AND TESTING
- C. Division 11

1.03 DEFINITIONS:

- A. Shop Testing is defined as testing that is performed by the manufacturer either at the place of manufacture, or the place of assembly, for the purpose of proving that the equipment meets the requirements of the technical specification(s).
- B. Physical Checkout is defined as the process whereby the Contractor physically inspects products after they have been installed in the work, and certifies that the products have been properly and completely installed, and are ready for field testing.
- C. Field Testing is defined as testing that is performed on products by the Contractor with the assistance of the manufacturer's representative, after the performance of physical checkout, for the purpose of proving that the tested products meet the specifications. While field testing can be described as "shop testing in the field", it may be required whether or not shop testing was performed on the product.
- D. System Testing is defined as testing performed on a "system" normally comprised of two or more pieces of equipment, after physical checkout and field testing have been completed, for the purpose of proving that the system meets specifications. System testing is described in Section 01752, STARTUP AND TESTING.
- E. Manufacturer's representative, sometimes referred to as the Factory-Trained Service Technician, is defined as a person provided by the manufacturer, who is qualified by training and experience to provide technical and process related advice, and/or assistance, relating to the installation or utilization of the products provided by the manufacturer. Minimum training and experience shall include not less than three years participation in similar work, including no less than three similar projects during this three year period.

1.04 SHOP TESTING:

- A. When required by the specifications, shop testing shall be performed prior to delivery of the equipment or material. If shop testing is not required by the technical specifications, provide shop testing as detailed in Paragraph 1.06. Provide a minimum of fifteen days written notice, indicating the time and place of testing. Submit the following to the Engineer for approval not less than fifteen days prior to this notice.
1. Description of the test - Outline how the tests will conform to the requirements of the specifications.
 2. Testing devices that will be used in the tests - description must state how the devices will perform or what they will measure, and the device accuracy. Submit sample measurement results and catalog cuts.
 3. Schedule for testing - schedule shall include frequency of measurements, personnel present, and contingency plans for equipment and/or test failure.
 4. Test forms - submit samples of all forms used to record and report on shop test data. Forms shall include description of test, test date, equipment used, equipment tested, personnel present, equipment tag ID numbers, and measurements made. Forms shall have a place for signature by the chief testing person, and an officer of the manufacturer certifying that the tests results shown are true, accurate, have met the required criteria, and that the equipment will operate as indicated.
- B. Submit the following to the Engineer within one week after completion of the tests.
1. Completed test forms for each device tested.
 2. Completed certification.
 3. A written summary of testing, reporting results.
 4. A schedule for retesting, if necessary. Perform any retesting required to fulfill the specification test requirements at no additional cost to the Owner. Additional travel required by the Engineer and the Owner personnel to witness retesting shall be paid by the Contractor, at no additional cost to the Owner.
- C. Contractor shall include in the contract price the cost for Engineer and/or Owner personnel to witness shop testing of equipment or systems as listed below. Round trip air fare (coach or equivalent) for flights on working days without weekend stopovers, unless otherwise approved by the Engineer, lodging, meals and rental car(s) shall be provided for the number of people and the durations listed below.

WITNESSING SHOP TESTING OF EQUIPMENT						
Spec Section	Equipment	Number of People		Days of Lodging & Meals		Rental Cars
		Engineer	Owner	Engineer	Owner	

1.05 PHYSICAL CHECKOUT:

- A. Physical checkout shall include the following, where applicable:
 1. Verify electrical and control/instrumentation systems for conduit and tray installation, wire/cable material and size, circuit continuity and identification, voltage testing, ground continuity and testing, terminal installation and identification, jar switches and circuit breakers and transformers tested, substation operation tested, and tagging for project system.
 2. Each piece of equipment and system must be certified by the manufacturer's representative as described in subsection 1.07.

1.06 MINIMUM SHOP AND FIELD TESTING REQUIREMENTS:

If the technical specifications do not define shop and field testing requirements, the following requirements shall be acceptable.

- A. Measurement of shaft run out for all rotating equipment requiring assembly:
 1. Remove bearings from the shaft. Support shaft on pedestal rollers or in a lathe.
 2. Check each shoulder on the shaft.
 3. Take a minimum of two readings for each shoulder, 90 degrees apart.
 4. All measured clearances shall be within supplier's specifications for new installations. Replace and recheck shafts found to be out of round or out of specified tolerance.

D. Vibration Measurements

1. Provide vibrational signature testing and documentation for each piece of direct drive or close coupled rotating equipment with a motor HP of 50 or above and a rated operating speed in excess of 999 RPM.
2. Unless specified otherwise, the current edition of the Hydraulic Institute Standard, "Acceptable Field Vibration Limits" shall be the standard for vibrational testing.
3. Take all specified vibrational readings in three directions; vertical, horizontal, and axial.
4. Provide vibrational measurements in the following engineering units:
 - a. Displacement in thousandths of an inch (mils), peak to peak.
 - b. Velocity in inches per second (ips), peak to peak.
 - c. Acceleration in feet per second, zero to peak.
 - d. Spike energy in g-SE.
5. The vibrational reading shall be less than the allowable maximum for the device rotating frequency and within the operating band specified by the supplier.
6. Amplitude Allowable Maximums:

<u>RPM</u>	<u>Amplitude Inches Peak to Peak</u>
3,000 and above	0.001
1,500 - 2,999	0.002
1,000 - 1,499	0.0025
999 and below	0.003

7. Utilize a Bently Nevada Dual Path Monitor, or equal for all vibrational measurements.

E. Belt Drives

All belts shall be in accordance with supplier's recommendations.

F. Gear Drives and Reducers

1. Check gears for lash at no less than three points around the gear.
2. Rotate a full 360 degrees while checking alignment.

G. Coupling/Shaft Alignment

1. Perform all final alignments and checks with a dial indicator or a laser device. Feeler gauges and straight edges are not acceptable.
2. Eliminate soft foot conditions prior to aligning.
3. When checking for final soft foot any displacement readings in excess of 0.002-in. must be corrected.
4. When checking for pipe strain, any displacement in excess of 0.002-in. requires piping realignment.
5. Alignments will not be regarded as final until the grout is set and all piping has been attached. Demonstrate that alignment is not changed by attachment of piping.
6. Shim the driving element; never the driven element.
7. Take bracket sag corrections into account when using a dial indicator. Bracket sag shall be determined on rigid pipe.
8. Mount a dial indicator to the driven element so that it can be rotated. Rotate both elements while aligning.
9. When aligning three coupled elements, align gear reduction elements with the driven element first, then align the driver to the gear reduction elements.
10. Check all four alignments: i.e. angular alignment in the vertical and horizontal planes, and parallel alignment in vertical and horizontal planes.
11. The minimum acceptable alignment accuracy for flexible couplings is +/- 0.005-in., or the supplier's specifications, whichever is more stringent.
12. The dial indicator must be perpendicular to the alignment surface.
13. Number hold down nuts prior to tightening. Loosen in reverse order. Tighten in ascending order.
14. Use only clean, deburred shims. Clean the machine base and remove rust or burrs prior to alignment.

H. Measurement of Noise (dB)

1. Eliminate noise sources generated by adjacent construction activity prior to testing.

2. Establish a background noise level prior to testing.
3. Perform noise level testing on each installation device as required by the technical specifications.
4. The maximum acceptable noise level exposure is 85 dBA over eight hours continuous for office, shop, and other areas where the Owner's personnel will be performing their assigned duties.

I. Electrical Equipment

1. The testing standards for electrical components are those contained in Division 16 and in the pertinent technical specification(s).

1.07 SERVICES OF THE MANUFACTURER'S REPRESENTATIVE:

- A. Services of manufacturer's representatives shall be provided for equipment and systems specified in Divisions 11 through 16.
- B. Contractor shall coordinate services of the various representatives to avoid overlap, thereby ensuring all work may be observed by the Engineer, and the Owner's operating personnel may receive all required training.
- C. Contractor shall notify the Engineer in writing not less than ten working days prior to the visit of each manufacturer's representative.
- D. Manufacturer's representative shall provide services specified in Divisions 11 through 16. As a minimum, the services shall include the following:
 1. When each piece of equipment or system has been installed, including connection of permanent power and control, the equipment or system shall be started up and fully inspected, aligned and adjusted, including provision of lubrication and all pre-operative maintenance.
 2. Each piece of equipment or system shall be complete in all respects. Omission of any required items shall be corrected. Lack of discussion in the specifications of components which are necessary to equipment operation will not be accepted as the basis for an extra charge.
 3. At the time of the inspection the representative shall provide a minimum of two additional hours to train the Owner's operations personnel in the operation and maintenance of the equipment or system.
 4. Upon completion of this work the manufacturer's representative shall forward a copy of the report of his inspection to the Engineer via the Contractor. The report shall be on a form suitable to the Engineer and shall detail the work completed, deficiencies noted and/or corrected, any special instructions, and the names of

Owner's personnel who received training. It shall also certify that the installation of the equipment or system is complete, ready for permanent operation, and free from any defects that would void the warranty.

5. Satisfactory certification of all individual equipment and systems must be received by the Engineer prior to the authorization to proceed with the overall start-up operation.
6. The manufacturer's representative shall return at a later date to supervise field tests, assist in start-up and perform any additional training required. Reports of these visits, specifically detailing the results of all field tests, shall be forwarded to the Engineer within 7 days of completion of the services.

1.08 CORRECTIONS TO THE WORK:

Correct any items of work failing to meet the specifications at no additional cost to the Owner. Correct the nonconforming items by re-work, modification, or replacement, at the option of the Engineer. Provide all required labor, materials, and retesting as specified herein, to verify that the equipment or system conforms to the specifications.

1.09 SAFETY:

Conduct all test procedures in compliance with all applicable safety standards and regulations.

END OF SECTION

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SECTION 01752

STARTUP AND TESTING

PART 1 - GENERAL

1.01 WORK INCLUDED:

This Section includes the startup and testing services required for the standby generator during start-up.

1.02 SYSTEM DESCRIPTION:

- A. The Contractor shall perform standby generator startup to the satisfaction of the Engineer and Owner. Startup and testing shall not be initiated until all required certifications and other required documentation has been submitted, as described herein.
- B. The purpose of the startup test is to provide a final operational checkout of all equipment prior to beneficial use by the Owner.
- C. As most components of each pump station are interrelated, Substantial Completion of the project shall not be certified until successful completion of startup.

1.03 RELATED WORK:

- A. Section 01750, EQUIPMENT CHECKOUT AND TESTING
- B. Divisions 11 through 16

1.04 SEQUENCING:

Testing, operator training and other like services to be provided under the contract drawings are not to be performed during startup without written authorization from the Engineer.

1.05 SUBMITTALS: IN ACCORDANCE WITH REQUIREMENTS OF THE GENERAL SPECIFICATIONS, SUBMIT THE FOLLOWING:

- A. Three copies of the following shall be forwarded to the Engineer for review two (2) weeks prior to commencement of startup:
 - 1. Certification by a representative of the manufacturer that each piece of equipment has been installed properly and is ready for operation.

2. Certification by a representative of the equipment manufacturer that all equipment requiring calibration has been properly calibrated.
 3. A schedule of the testing, including staffing, and specific testing and operation of individual equipment items.
- B. At the conclusion of the test, all information recorded during the test shall be forwarded to the Engineer.
 - C. This test is not to be utilized as a general debugging of the system. All equipment shall be started, tested and calibrated prior to this test. This includes automatic and manual operation as well as instrumentation interfacing.

PART 2 - PRODUCTS - NOT APPLICABLE

PART 3 - EXECUTION

3.01 PREPARATION:

- A. Prior to commencement of testing, the Engineer shall be given three (3) days' written notice.
- B. The Contractor shall complete final debugging prior to startup.
- C. The test shall be performed.
- D. Part of the test shall be accomplished on standby power.

3.02 TEST PROCEDURES:

- A. It is the general responsibility of the Contractor to insure that all equipment is completely operational throughout the test; provide the Engineer with proper technical assistance as required to completely test all equipment and alarms; provide adequately trained personnel who can operate the pump station on an on/off basis so that the equipment is not damaged, whether the Engineer or Owner is present or not during that portion of the test.
- B. It is the general responsibility of the Engineer and Owner during the test period to supervise the testing of all equipment, associated alarms and devices; to vary the operation of the equipment as necessary, and to pump as required.

3.03 STOPPING OF TEST:

- A. The Engineer shall stop the testing for any of the following reasons:
 1. Failure of critical system, including:

- a. Pumps
- b. Telemetry Equipment
- c. Instrumentation
- d. Standby Generating System

2. Failure of any of the above systems to operate on standby power.

- B. If the test is stopped for any reason, the test shall be restarted from the beginning. The Contractor shall pay all costs associated with the Owner and Engineer supervising additional testing as required.

3.04 EXPENDABLES:

Unless otherwise indicated, the General Contractor shall be responsible for providing all fuel during construction and providing a full tank of fuel oil at no additional cost to the Owner, at beneficial occupancy.

END OF SECTION

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SECTION 01760

OPERATION AND MAINTENANCE MANUALS

PART 1 - GENERAL

1.01 SCOPE OF WORK:

- A. This section includes procedural requirements for compiling and submitting operation and maintenance data required to complete the project.

1.02 RELATED WORK:

- A. General Requirements in their entirety (Section 00700 through Section 01770)
- B. Individual Technical Specification Sections Specific for Operation and Maintenance Data.
- C. Section 01329, SUBMITTALS FOR OPERATION AND MAINTENANCE MANUALS
- D. Section 01330, SUBMITTALS

1.03 FORMAT:

- A. Prepare data in form of an instructional manual.
- B. Binders: Commercial quality, 8 1/2 x 11 inch three-ring binders with hardback, washable, plastic covers; two inch maximum ring size. When multiple binders are used, correlate data into related, consistent groupings. Provide a table of contents in each binder.
- C. Cover: Identify each binder cover and spine with typed or printed title OPERATION AND MAINTENANCE INSTRUCTION; list title of Project facility; identify subject matter of contents.
- D. Arrange contents by systems under section numbers and sequence of Table of Contents.
- E. Provide tabbed flyleaf for each separate product and system, with typed description of product and major component parts of equipment.
- F. Text: Manufacturer's printed data, or typewritten data - on 20-pound paper.
- G. Drawings: Provide with reinforced punched, binder tab. Bind in with text; fold larger drawings to size of text pages.
- H. Submit certification that the data and drawings provided pertain exactly to the model, size, and series product and equipment installed in the work.
- I. All documents will be electronically scannable.

- J. All products, systems, and drawings must be cross-referenced with tag ID numbers.
- K. The manual for each piece of equipment shall be a separate document with the following specific requirement:
1. Contents:
 - Table of Contents and Index
 - Brief description of each system and components
 - Starting and stopping procedures
 - Special operating instructions
 - Routine maintenance procedures
 - Manufacturer's printed operating and maintenance instructions, parts list, illustrations, and diagrams
 - One copy of each wiring diagram
 - One copy of each approved shop drawing and each Contractor's coordination and layout drawing
 - List of spare parts, manufacturer's price, and recommended quantity
 - Name, address and telephone number of local service representatives.
 2. Material
 - Loose leaf on 60 pound, punched paper
 - Holes reinforced with plastic cloth or metal
 - Page size, 8 ½ x 11 inches
 - Diagrams, illustrations and attached foldouts as required, of original quality, reproduced by dry copy method
 - Covers: oil, moisture and wear resistant 9 x 12 size

1.04 QUALITY ASSURANCE:

- A. Prepare instructions and data by personnel experienced in maintenance and operations of described products.

1.05 CONTENTS, EACH VOLUME (BINDER):

- A. Table of Contents: Provide title of Contract, schedule of products and systems, indexed to content of the volume. A listing of all relevant tag ID numbers for each volume shall be placed immediately after the Table of Contents.
- B. For each product or systems: List names, addresses, and telephone numbers of subcontractors and suppliers, including local source of suppliers and replacement parts.
- C. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- D. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- E. Text: As required to supplement product data, provide logical sequence of instructions for each procedure incorporating manufacturer's instructions.
- F. Warranties, Guarantees, and Bonds: Bind copy of each
- G. See O&M Manual Review Checklist at end of this specification section.

1.06 MANUAL FOR MATERIALS AND FINISHES:

- A. Building Products, Applied Materials, and Finishes: Include product data with catalog number, size composition, and color and texture designations. Provide information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional Requirements: As specified in individual product specification sections.

1.07 MANUAL FOR EQUIPMENT AND SYSTEMS:

- A. Each Item of Equipment and Each System: Include description of unit or system and component parts. Identify function, normal operating characteristics and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- B. Data submitted on all equipment shall include complete maintenance instructions (including preventive and corrective maintenance) and parts lists in sufficient detail to facilitate ordering replacements.
- C. All products, systems, equipment, electrical wiring, instrumentation wiring, personnel protection systems wiring, presented in this manual will have tag numbers corresponding to contract drawings and specifications. In the event, numbers do not exist; the Engineer will specify a series of numbers.
- D. Panelboard Circuit Directories: Provide electrical service characteristics, controls and communications.
- E. Include color-coded wiring diagrams as installed.
- F. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequence. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter and any special operating instructions.
- G. Provide servicing and lubrication schedule, and list of lubricants required. Cross-reference lubricants to products offered by at least three major lubricant suppliers.
- H. Include manufacturer's printed operation and maintenance instructions.
- I. Include sequence of operation by controls manufacturer.
- J. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- K. Provide control diagrams by controls manufacturer as installed.
- L. Provide Contractor's coordination drawings, with color-coded piping diagrams as installed.
- M. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- N. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- O. Include test and balancing reports, calibration data, alignment records, and other information.

- P. Additional Requirements: as specified in individual product specification sections.
- Q. Provide a listing in table of Contents for design data with tabbed flysheet and space for insertion of data.
- R. Incorporation of all Physical Checkout information obtained through the field-testing and correction phases of the Work. Input must be specific to the actions and information obtained during those phases.

1.08 SUBMITTALS:

- A. Submit draft and final copies of operation and maintenance manuals as described in Section 01329 SUBMITTAL OF OPERATION AND MAINTENANCE MANUALS.

Note to Specifier: Review the attached Checklist and add items that are required or delete items not relative to this project.

**OPERATION AND MAINTENANCE MANUAL
REVIEW CHECKLIST**

1. Name, address, telephone/fax number of the manufacturer
2. Name, address, contact name, telephone/fax of local representative
3. Name, address, telephone/fax number of the contractor
4. Exploded view/general arrangement of materials of construction
5. Description of operation/operating principal
6. Project specific Operating parameters
7. Wiring Diagrams (If Applicable)
8. Troubleshooting checklist
9. Recommended spare parts list with prices, and ordering instructions
10. Model number and the serial number of the model provided
11. Performance curves or tabulated data
12. Routine Maintenance instructions/service instructions with recommended Intervals
13. Assembly and disassembly instructions
14. Recommended lubricates and lubrication schedule.
15. Approved copies of Shop Drawings are to be included in the manual
16. Startup/break-in and adjustment instructions
17. Warranty information

Reviewed By: _____
Weston & Sampson Engineers

Date: _____

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END OF SECTION

SECTION 01770

PROJECT CLOSEOUT

PART 1 - GENERAL

1.01 WORK INCLUDED:

- A. This Section covers administrative and procedural requirements for closing out the project, including, but not limited to:
 - 1. Project as-built documents
 - 2. Checkout and Certification
 - 3. Startup and Testing
 - 4. Final Cleaning
 - 5. Substantial Completion
 - 6. Closeout Procedures
 - 7. Final Completion
 - 8. Correction/Warranty Period
- B. Closeout checklist to be completed by the Engineer.

1.02 RELATED WORK:

- A. General Requirements in their entirety.
- B. Section 01740, CLEANING UP
- C. Section 01750, EQUIPMENT CHECKOUT AND TESTING
- D. Section 01752, STARTUP AND TESTING
- E. Division 11.

1.03 AS-BUILT DOCUMENTS:

- A. Contractor shall maintain on site, separate from the documents used for construction, one set of the documents listed below, and as construction progresses, shall legibly record on these documents all changes made during construction.

1. Contract Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other Modifications to the Contract.
5. Reviewed shop drawings, product data, and samples.
6. Written interpretations and clarifications.
7. Field Orders.
8. Field test reports properly verified.

- B. The completed set of as-built documents shall be submitted to the Engineer with the final Application for Payment.

1.04 CHECKOUT AND CERTIFICATIONS:

- A. Prior to checkout and certifications the following tasks shall be completed:

1. Construction shall be complete. For this purpose, completion of construction is defined as follows:
 - a. The Contractor has completed construction and erection of the work in conformance with the Contract Drawings and Specifications.
 - b. The Contractor has installed and adjusted operating equipment, systems, or facilities, as applicable, as defined by the manufacturers' erection, installation, operation and maintenance instructions.
2. All shop drawings shall have final approval.
3. All shop tests shall be complete and approved test results submitted to the Engineer.

- B. Refer to Section 01750 for requirements regarding equipment checkout and certification.

1.05 START-UP AND TESTING:

- A. Prior to start-up the following tasks shall be complete:

1. All checkout and certifications shall be satisfactorily completed,

2. All operations and maintenance manuals shall be approved,
3. All preliminary training by the manufacturer's representative shall be completed,
4. An approved start-up procedure shall be in place.

B. Refer to Section 01752 for start-up and testing requirements.

1.06 FINAL CLEANING:

- A. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
1. Clean the site, including landscape development areas of rubbish, litter and other foreign substances. Sweep areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to smooth, even textured surfaces.
 2. Remove waste and surplus materials, rubbish, temporary utilities and construction facilities from the site, unless otherwise required by the Engineer.
 3. Comply with requirements of Section 01740 CLEANING UP.

1.07 SUBSTANTIAL COMPLETION:

- A. Substantial Completion is officially defined in the General and Supplementary Conditions. The date of substantial completion will be certified by the Engineer. This date will not be certified until the following requirements have been satisfied by the Contractor:
1. All Contract requirements are coordinated into a fully operational system. All individual units of equipment and treatment are fully operative and performing at specified efficiencies. Where efficiencies are not specified, performance shall meet acceptable standards for the particular unit.
 2. All field tests have been satisfactorily completed and reports forwarded to the Engineer.
 3. All final training has been completed by the manufacturers' representatives.
 4. All spare parts and lubricants have been satisfactorily delivered to the Owner. Spare parts are for the exclusive use of the Owner when the facility has been turned over. Contractor is responsible for all maintenance and repair materials required until the facility is accepted by the Owner.

1.08 CLOSEOUT PROCEDURES:

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and is complete in accordance with Contract Documents and ready for Engineer's and Owner's inspection.
- B. Accompany Engineer and Owner on inspection to verify conformance with the Contract Documents. Prepare a punch list of work items that have been determined by inspection to not conform to Contract Documents. Punch list items shall include work items that are missing, incomplete, damaged, incorrect items, or improperly installed or constructed. The Contractor shall correct the punch list deficiencies by re-work, modifications, or replacement, as appropriate, until the items conform to the Contract Documents. The initial punch list shall be produced by the Contractor, with copies to the Engineer and Owner. When the Contractor has reduced the number of deficient items to a reasonable level, the Engineer will develop a definitive punch list for the use of the Contractor.
- C. Provide submittals to Engineer that are required by governing or other authorities.
- D. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due. The Contractor shall submit the following documents with or prior to Final Application for Payment: Set of as-built documents, Contract Completion and Acceptance Certificate, Consent of Surety to Final Payment, Release and Waiver of Liens and Claims, Affidavit of Payment of Debts and Claims, and remaining releases, waivers, warranties/guarantees, and all other data required by the Contract Documents.

1.09 FINAL COMPLETION:

- A. Prior to final completion, the following tasks shall be completed:
 - 1. All items in the punch list shall be completed.
 - 2. All Contract closeout documentation shall be submitted to and accepted by the Engineer.

1.10 CORRECTION/WARRANTY PERIOD:

- A. During the correction period, the Contractor shall correct all deficiencies in equipment and materials.
- B. During the warranty period, the Contractor shall perform all corrective work on warranty deficiencies.
- C. Corrective work will be identified by the Engineer or Owner, as appropriate. The Contractor will be notified of the item(s) requiring corrective work.
- D. The Contractor shall begin work on all corrective work within ten days of being notified of the deficiency by the Engineer and shall then work continuously until the deficiency

is corrected. Upon completion of the corrective work, the Contractor shall submit a letter report to the Engineer describing the deficiency and the corrective action that was taken.

- E. The Contractor shall coordinate all corrective work with the Engineer and/or the Owner.

1.11 **COMPLETION CHECKLIST: NOTE SPECIFIER:**

- A. The Project Completion Checklist, which follows, and shall be completed as the project nears completion. When the project has been fully completed, Final Payment can be approved.

Document 1

PROJECT COMPLETION CHECKLIST

Owner _____ Job No.

Project _____

As part of the project closeout, all items listed below must be checked off as being complete or otherwise accounted for. The person verifying completion of the item shall list the completion date and his/her initials.

Project Closeout Checklist		
	Date Completion Verified	Verified by
AS-BUILT DOCUMENTS HANDED OVER		
1. Contract Drawings		
2. Specifications		
3. Addenda		
4. Change Orders/Contract Modifications		
5. Reviewed Shop Drawings, Product Data and Samples		
6. Written Interpretations/Clarifications		
7. Field Orders		
8. Field Test Reports		
EQUIPMENT CHECKOUT AND CERTIFICATIONS		
1. Construction Complete per Drawings/Specifications		
2. Equipment Installed and Adjusted		
3. All Shop Drawings have Final Approval		
4. All Shop Tests Complete and Results Submitted		

Project Closeout Checklist		
	Date Completion Verified	Verified By
START-UP AND TESTING		
1. All Checkout and Certifications Complete		
2. All O&M Manuals Approved		
3. All Preliminary Training by Manufacturers Rep. Completed		
FINAL CLEANING		
1. All Construction Facilities Removed		
2. All Construction Debris Removed		
3. All Areas Swept/Cleared		
SUBSTANTIAL COMPLETION		
1. All Items Coordinated Into a Fully Operational System		
2. All Equipment Units Operational at Specified Efficiencies		
3. All Field Tests Completed and Reports Submitted		
4. All Final Training by Manufacturer's Rep. Completed		
5. All Spare Parts and Lubricants Provided		
CLOSEOUT PROCEDURES		
1. Written Certification Submitted that Work is Ready for Owner & Engineer Inspector		
2. Inspection by Owner, Engineer, Contractor completed		
3. Punch List of Nonconforming Items Prepared		
4. Documents Required by Governing or Other Authorities Submitted (List Them)		
5. Final Application for Payment Received		
6. Contact Completion and Acceptance Certificate Submittal		
7. Consent of Surety to Final Payment Submittal		
8. Release and Waiver of Liens and Claims Submitted		
9. Affidavit of Payment of Debts and Claims Submitted		

Project Closeout Checklist

	Date Completion Verified	Verified By
10. Warranties/Guarantees Submitted		
11. Other Required Releases and Waivers Submitted (List Them)		
12. Permits Submitted (List Them)		
13. Weekly Payrolls Submitted as Required by Law		
FINAL COMPLETION		
1. All Items in Punch List Completed		
2. All Other Required Documentation Submitted (List It)		
CORRECTION/WARRANTY PERIOD		
1. Correction Period Start Date: _____ End Date: _____		
2. Specific Warranties Provided <u>Item</u> <u>Warranty Duration</u>		

Full name of persons signing their initials on this checklist:

END OF SECTION

Document1

SECTION 03302
FIELD CONCRETE

PART 1 - GENERAL

1.01 WORK INCLUDED:

- A. This Section covers concrete and all related items necessary to place and finish the concrete work.
- B. Concrete for service pads shall be installed in accordance with the details shown on the drawings and as specified in this section.

1.02 RELATED WORK:

- A. Section 02300, EARTHWORK

1.03 REFERENCES:

- A. The following standards form a part of this specification:

American Concrete Institute (ACI)

- ACI 304 Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.
- ACI 305 Recommended Practice for Hot Weather Concreting
- ACI 306 Recommended Practice for Cold Weather Concreting
- ACI SP-66 ACI Detailing Manual
- ACI 318 Building Code Requirements for Reinforced Concrete

American Society for Testing and Materials (ASTM)

- ASTM A615 Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
- ASTM C33 Concrete Aggregates
- ASTM C94 Ready-Mixed Concrete
- ASTM C143 Test for Slump of Portland Cement Concrete
- ASTM C150 Portland Cement

ASTM C260 Air Entraining Admixtures for Concrete

ASTM C494 Chemical Admixtures for Concrete

1.04 SUBMITTALS: IN ACCORDANCE WITH REQUIREMENTS OF GENERAL SPECIFICATIONS, SUBMIT THE FOLLOWING:

Six copies of the statement of materials constituting the design of mixes for each size aggregate as required by ASTM C94 shall be submitted to the Engineer within one week following award of the Contract.

PART 2 - PRODUCTS

2.01 CONCRETE:

- A. All concrete, reinforced or non-reinforced shall have a 28 day compressive strength of 3000 psi unless otherwise noted on the design drawings. A minimum of 5.5 sacks of cement per cubic yard and a maximum water cement ratio of 6.9 gallons per sack shall be used.
- B. Concrete shall conform to ASTM C94. The Contractor shall be responsible for the design of the concrete mixtures. Slump shall be a maximum of 4-inches and a minimum of 2-inches, determined in accordance with ASTM C143.
- C. Admixtures shall be as specified in subsection 2.05. No additional admixtures shall be used unless approved by the Engineer.
- D. No additional water, except for the amount indicated by the design mix shall be added to the concrete without the prior permission of the Engineer.

2.02 REINFORCING:

Reinforcing shall conform to ACI 318 and ASTM A615 and shall be detailed in accordance with ACI SP-66. All Steel reinforcing bars shall be grade 60.

2.03 CEMENT:

The cement shall be an approved brand of American manufactured Portland Cement, Type II conforming to the applicable requirements of ASTM C150.

2.04 AGGREGATES

- A. Except as otherwise noted, aggregate shall conform to the requirements of ASTM C33.
- B. Maximum size aggregate shall be 3/4-inch.

2.05 ADMIXTURES:

- A. All concrete (unless otherwise directed) shall contain an air entraining agent. Air entrained concrete shall have air content by volume of 4 to 8 percent for 3/4-inch aggregate.
- B. Air entraining agent shall be in accordance with ASTM C260 and shall be Darex AEA, as manufactured by W.R. Grace & Company; Placewel (air entraining Type), as manufactured by Johns Manville; Sika AER as manufactured by Sika Chemical Company; or an approved equal product.
- C. Water reducing agent shall be WRDA, as manufactured by W.R. Grace & Company; Placewel (non-air entraining Type), as manufactured by Johns Manville; Sika Plastiment as manufactured by Sika Chemical Company; or an approved equal product.
- D. Water reducing agent-retarder shall be "Daratard," as manufactured by W.R. Grace & Company; Sika Plastiment as manufactured by Sika Chemical Company; or an approved equal product.

2.06 WATER:

- A. Water for concrete shall be potable, free of deleterious amounts of oil, acid, alkali, organic matter and other deleterious substances.

2.07 CONCRETE FORMS:

- A. Forms for exterior and interior surfaces which will be exposed to view after the work is completed, whether such surfaces are painted or unpainted, shall be new plywood stock, steel, tempered masonite, or other materials which will provide smooth concrete surfaces without subsequent surface plastering. Plastic or plastic-faced forms shall not be used, except with the prior approval of the Engineer.
- B. Form ties shall be cone type or equal, with waterstop, which leaves no metal closer than 2-inches to finished face of concrete.
- C. Form release agent shall be a non-staining, non-yellowing, non-toxic liquid free from kerosene and resins of the type recommended by the manufacturer of the forming system being used such as EZ strip by L&M Construction Chemicals, Omaha, NB and "Magic Kote" by Symons Corp., Des Plaines, IL or approved equal.
- D. Where steel adjacent to vertical faces of forms cannot be otherwise secured, mortar doughnuts shall be used to prevent steel from lying too close to the finish vertical faces of the concrete

PART 3 - EXECUTION

3.01 PREPARATION:

- A. Before placing concrete, forms and the space to be occupied by the concrete shall be thoroughly cleaned, and reinforcing steel and embedded metal shall be free from dirt, oil, mill scale, loose rust, paint or the material which would tend to reduce the bond.
- B. Earth, concrete, masonry, or other water permeable material against which concrete is to be placed shall be thoroughly saturated with water immediately before concrete is placed.
- C. No concrete shall be placed until the consolidation of the ground and the arrangement and details of forms and reinforcing have been inspected and approved by the Engineer.

3.02 FILL CONCRETE:

- A. Fill concrete shall be placed in those locations as indicated on the design drawings. Fill concrete shall consist of materials as previously specified, with a minimum 28-day compressive strength of 3000 psi.
- B. Before fill concrete is placed, the following procedures shall be used to prepare surfaces; all dirt, scum and laitance shall be removed by chipping and washing. The clean, roughened base surface shall be saturated with water, but shall have no free water on the surface. A coat of 1:2 cement-sand grout, approximately 1/8-inch thick, shall be well scrubbed into the thoroughly dampened concrete base. The concrete fill shall be placed immediately, before grout has dried or set.
- C. Fill concrete shall be brought to lines and grades as shown on the design drawings.

3.03 CONCRETE PLACING DURING COLD WEATHER:

- A. Concrete shall not be placed on frozen ground, and no frozen material or material containing ice shall be used. Materials for concrete shall be heated when temperature is below 40°F, or is expected to fall to below 40°F, within 73 hours, and the concrete after placing shall be protected by covering, heat, or both.
- B. All details of Contractor's handling and protecting of concrete during freezing weather shall be subject to the approval of the Engineer. All procedures shall be in accordance with provisions of ACI 306.

3.04 CONCRETE PLACING DURING HOT WEATHER:

- A. Concrete just placed shall be protected from the direct rays of the sun and the forms and reinforcement just prior to placing, shall be sprinkled with cold water. The Contractor shall make every effort to minimize delays, which will result in excessive mixing of the concrete after arrival on the job.

- B. During periods of excessively hot weather (90°F or above), ingredients in the concrete shall be cooled insofar as possible and cold mixing water shall be used to maintain the temperature of the concrete at permissible levels all in accordance with the provisions of ACI 305. Any concrete with a temperature above 90°F, when ready for placement, will not be acceptable, and will be rejected.

3.05 FIELD QUALITY CONTROL:

- A. Concrete inspection and testing shall be performed by the Engineer or by an inspection laboratory, designated by the Engineer, engaged and paid for by the Owner. Testing equipment shall be supplied by the laboratory, and the preparation of samples and all testing shall be performed by the laboratory personnel. Full assistance and cooperation, concrete for samples, and such auxiliary personnel and equipment as needed shall be provided by the Contractor.
- B. At least 4 standard compression test cylinders shall be made and tested and 1 slump test from each day's placement of concrete. A minimum of four compression test cylinders shall be made and tested for each 100 cubic yards of each type and design strength of concrete placed. One cylinder shall be tested at 7 days, and two at 28 days. The fourth cylinder from each set shall be kept until the 28 day test report on the second and third cylinders in the same set has been received. If the average compressive strength of the two 28 day cylinders do not achieve the required level, the Engineer may elect to test the fourth cylinder immediately or test it after 56 days. If job experience indicates additional cylinder tests or other tests are required for proper control or determination of concrete quality, such tests shall be made.
- C. The Engineer shall have the right to reject concrete represented by low strength tests. Rejected concrete shall be promptly removed and replaced with concrete conforming to the specification. The decision of the Engineer as to whether substandard concrete is to be accepted or rejected shall be final.

END OF SECTION

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SECTION 16235

NATURAL GAS FUELED ENGINE GENERATOR

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Engine generator set.
 - 2. Exhaust silencer and fittings.
 - 3. Fuel fittings.
 - 4. Battery.
 - 5. Battery charger.

1.2 REFERENCES

- A. National Electrical Manufacturers Association:
 - 1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
 - 2. NEMA AB 1 - Molded Case Circuit Breakers and Molded Case Switches.
 - 3. NEMA MG 1 - Motors and Generators.
- B. International Electrical Testing Association:
 - 1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- C. National Fire Protection Association:
 - 1. NFPA 110 - Standard for Emergency and Standby Power Systems.
- D. Code of Massachusetts Regulations:
 - 1. 527 CMR 12.00 - Massachusetts Electrical Code.

1.3 SYSTEM DESCRIPTION

- A. Provide one (1) engine-generator set at the Second Avenue (Legion Road) pump station.
- B. Description: Engine generator assembly and accessories to provide source of power for applications in accordance with NFPA 110
- C. Capacity: 125 kW minimum site standby rating using specified engine cooling scheme.

1.4 SUBMITTALS

- A. Shop Drawings: Indicate electrical characteristics and connection requirements. Include plan and elevation views with overall and interconnection point dimensions, fuel consumption rate curves at various loads, ventilation and combustion air requirements, electrical diagrams including schematic and interconnection diagrams.

- B. Product Data: Submit data showing dimensions, weights, ratings, interconnection points, and internal wiring diagrams for engine, generator, control panel, battery, battery rack, battery charger, exhaust silencer and vibration isolators.
- C. Test Reports: Indicate results of performance testing.
- D. Manufacturer's Field Reports: Indicate inspections, findings, and recommendations.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit instructions and service manuals for normal operation, routine maintenance, oil sampling and analysis for engine wear, and emergency maintenance procedures.
- B. Full load test: Submit test data.

1.6 QUALITY ASSURANCE

- A. Products and Installation: 527 CMR 12.00.
- B. Products: UL labeled for products in category for which UL labeling is available.
- C. Products: New and unused.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience and with service facilities within 100 miles of project.
- B. Supplier: Authorized distributor of specified manufacturer with minimum three years experience.

1.8 WARRANTY

- A. Furnish five year manufacturer warranty.

1.9 MAINTENANCE SERVICE

- A. Furnish service and maintenance of engine generator for one year from Date of Substantial Completion.

1.10 MAINTENANCE MATERIALS

- A. Furnish one set of tools required for preventative maintenance of engine generator system. Package tools in adequately sized metal tool box.
- B. Furnish two of each fuel, oil and air filter element.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Kohler Co.
- B. Substitutions: Equal product.

2.2 SERVICE CONDITIONS

- A. Temperature: 85 degrees F
- B. Altitude: 1,000 feet.

2.3 ENGINE

- A. Product Description: Air-cooled (radiator and fan) in-line or V-type, electric ignition internal combustion engine.
- B. Rating: Sufficient to operate under 10 percent overload for one hour in ambient of 90 degrees F at elevation of 1,000 feet
- C. Fuel System: Natural gas.
- D. Engine speed: 1200 or 1800 rpm.
- E. Safety Devices: Engine shutdown on high water temperature, low oil pressure, overspeed, and engine overcrank. Limits as selected by manufacturer.
- F. Engine Starting: DC starting system with positive engagement, number and voltage of starter motors in accordance with manufacturer's instructions. Furnish remote starting control circuit, with MANUAL-OFF-REMOTE selector switch on engine-generator control panel.
- G. Engine Jacket Heater: Thermal circulation type water heater with integral thermostatic control, sized to maintain engine jacket water at 90 degrees F, and suitable for operation on 120 volts AC.
- H. Radiator: Radiator using glycol coolant, with blower type fan, sized to maintain safe engine temperature in ambient temperature of 110 degrees F.
- I. Engine Accessories: Fuel filter, lube oil filter, intake air filter, lube oil cooler, fuel pump as applicable, gear-driven water pump. Furnish water temperature gage, and lube oil pressure gage on engine/generator control panel.
- J. Mounting: Furnish unit with suitable spring-type vibration isolators and mount on structural steel base.

2.4 GENERATOR

- A. Product Description: NEMA MG1, three phase, reconnectable brushless synchronous generator with brushless exciter.
- B. Rating: 125 kW, at 0.8 power factor, 240 volts, 3 phase, 60 Hz.
- C. Insulation Class: F.
- D. Temperature Rise: 130 degrees C Standby.
- E. Enclosure: NEMA MG1, open drip proof.
- F. Voltage Regulation: Furnish generator mounted volts per hertz exciter-regulator to match engine and generator characteristics, with voltage regulation plus or minus 1 percent from no load to full load. Furnish manual controls to adjust voltage droop, voltage level (plus or minus 5 percent) and voltage gain.

2.5 GOVERNOR

- A. Product Description: Electronic governor to maintain engine speed within 0.5 percent, steady state, and 5 percent, no load to full load, with recovery to steady state within 2 seconds following sudden load changes.

2.6 ACCESSORIES

- A. Exhaust Silencer: Critical type silencer, with muffler companion flanges and flexible stainless steel exhaust fitting, sized in accordance with engine manufacturer's instructions.
- B. Batteries: Heavy duty, diesel starting type lead-acid storage batteries. Match battery voltage to starting system. Furnish cables and clamps.
- C. Battery Tray: Treated for electrolyte resistance, constructed to contain spillage.
- D. Battery Charger: Current limiting type designed to float at 2.17 volts for each cell and equalize at 2.33 volts for each cell. Furnish overload protection, full wave rectifier, DC voltmeter and ammeter, and 120 volts AC fused input. Furnish wall-mounted enclosure to meet NEMA 250, Type 1 requirements.
- E. Line Circuit Breaker: NEMA AB 1, molded case circuit breaker on generator output with integral thermal and instantaneous magnetic trip in each pole. Unit mount in enclosure to meet NEMA 250, Type 1 requirements.
- F. Engine-Generator Control Panel: NEMA 250, Type 1 generator-mounted control panel enclosure with engine and generator controls and indicators. Furnish provision for padlock and the following equipment and features:
 - 1. Frequency Meter: 45-65 Hz. range, 3.5 inch dial.

2. AC Output Voltmeter: 3.5 inch dial, 2 percent accuracy, with phase selector switch.
3. AC Output Ammeter: 3.5 inch dial, 2 percent accuracy, with phase selector switch.
4. Output voltage adjustment.
5. Push-to-test indicator lamps, one each for low oil pressure, high water temperature, overspeed, and overcrank.
6. Engine start/stop selector switch.
7. Engine running time meter.
8. Oil pressure gage.
9. Water temperature gage.
10. Auxiliary Relay: DPDT, operates when engine runs, with contact terminals prewired to terminal strip.
11. Additional visual indicators and alarms in accordance with by NFPA 110 for standby units.
12. Remote Alarm Contacts: Factory wire SPDT contacts to terminal strip for remote alarm functions.
13. Panel illumination lamps with ON-OFF switch.
14. Switch not in auto position (alarm).
15. Overcrank (alarm).
16. Emergency stop (alarm).
17. High water temperature (alarm).
18. Overspeed (alarm).
19. Low oil pressure (alarm).
20. Lamp test and horn silence switch.

2.7 SOURCE QUALITY CONTROL

- A. Provide shop inspection and testing of completed assembly.

PART 3 EXECUTION

3.1 FIELD QUALITY CONTROL

- A. Inspect and test in accordance with NETA ATS, except Section 4.
- B. Perform inspections and tests listed in NETA ATS, Section 7.22.

3.2 MANUFACTURER'S FIELD SERVICES

- A. Prepare and start up engine-generator assembly.
- B. Perform 4 hour full load test.

3.3 ADJUSTING

- A. Adjust generator output voltage and engine speed to meet specified ratings.

3.4 CLEANING

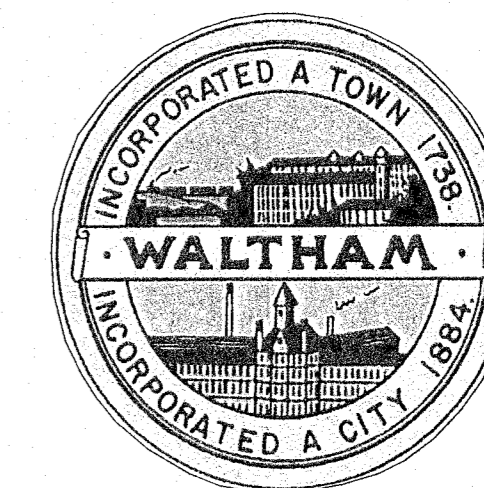
- A. Clean engine and generator surfaces. Replace oil and fuel filters with new.

3.5 DEMONSTRATION AND TRAINING

- A. Furnish 2 hours of instruction, to be conducted at project site with manufacturer's representative.
- B. Describe loads connected to standby system and restrictions for future load additions.
- C. Simulate power outage by interrupting normal source, and demonstrate system operates to provide standby power.

END OF SECTION

CITY OF WALTHAM, MASSACHUSETTS



JEANNETTE A. McCARTHY - MAYOR

CITY COUNCIL

PAUL J. BRASCO - PRESIDENT

SARAFINA "SALLY" COLLURA

DIANE P. LEBLANC

DAVID H. MARCOU, JR.

KATHLEEN B. McMENIMEN

THOMAS M. STANLEY

DANIEL ROMARD

EDMUND P. TARALLO

GEORGE A. DARCY III

THOMAS J. CURTIN

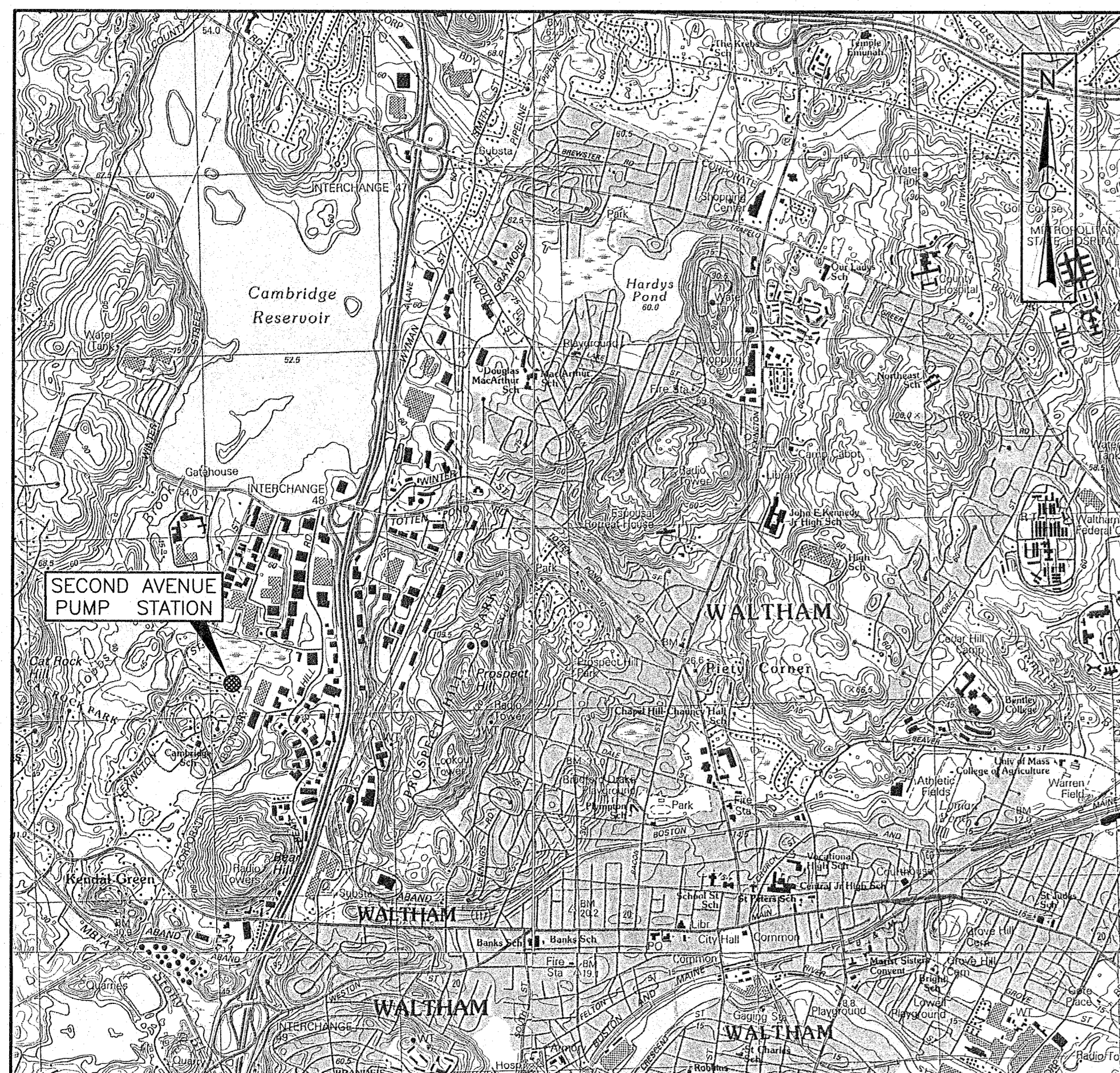
GARY J. MARCHESE

ROBERT J. WADDICK

JOSEPH GIORDANO, JR.

STEPHEN F. ROURKE

ROBERT G. LOGAN



LOCATION PLAN

SCALE: 1"=2,000'

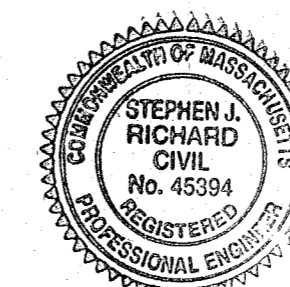
SEWERAGE SYSTEM IMPROVEMENTS

PUMP STATION NO. 2 (SECOND AVENUE)

STANDBY GENERATOR REPLACEMENT

INDEX

SHEET NO.	TITLE
E-1	HVAC / ELECTRICAL PLAN
S-1	STRUCTURAL PLANS AND DETAILS



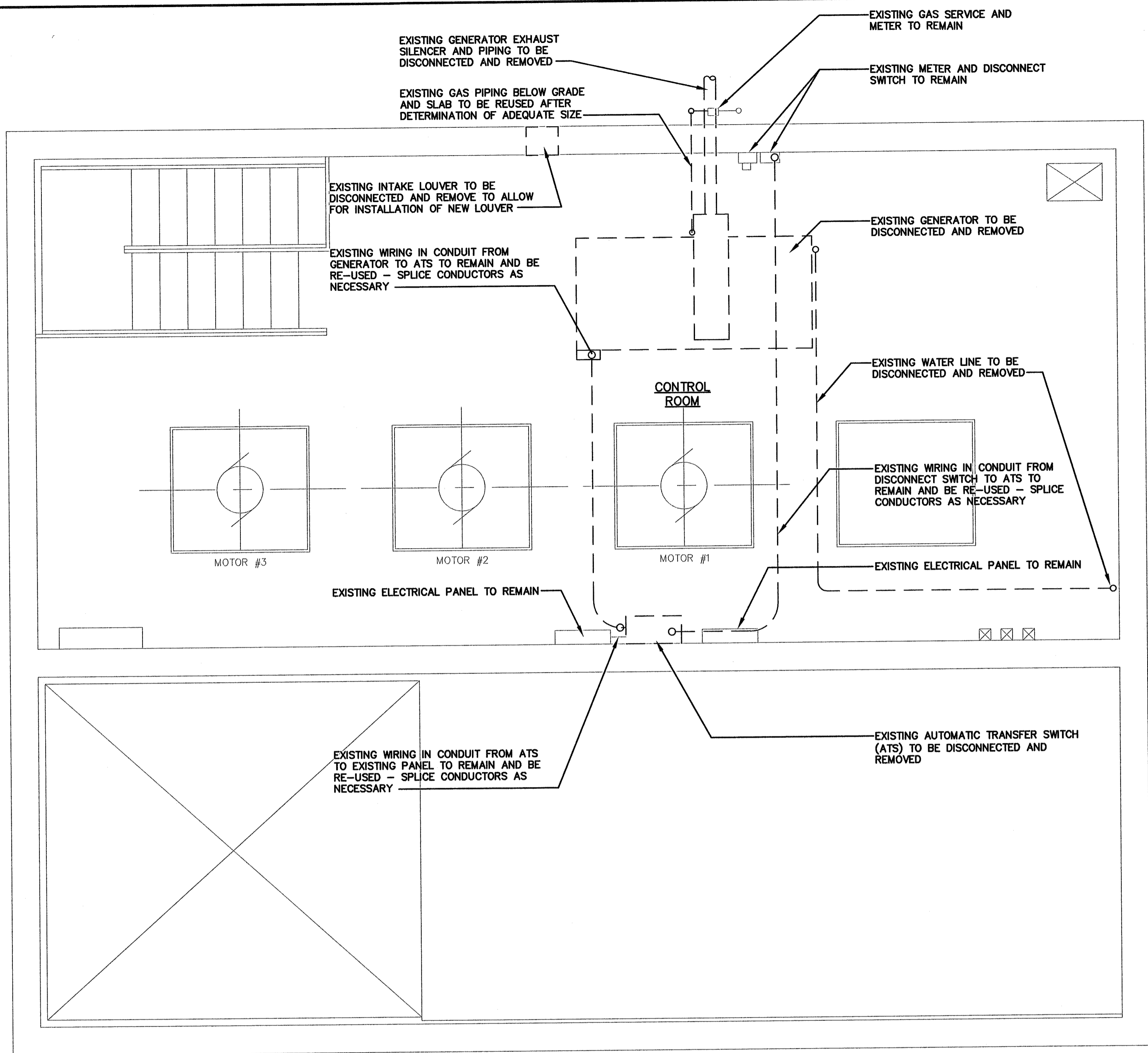
Stephen J. Richard

Weston & Sampson CMR, Inc

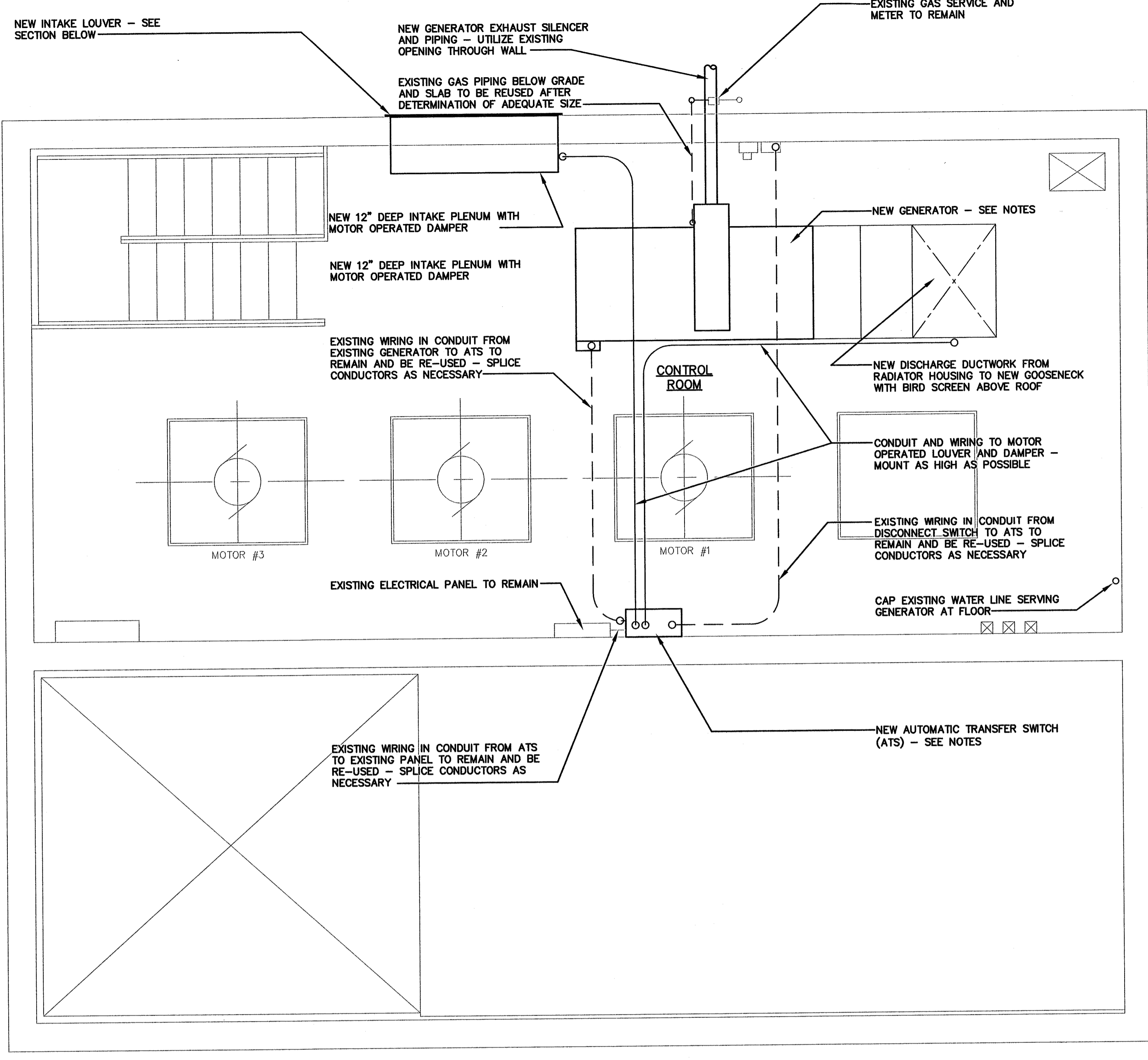
Weston & Sampson
CMR, INC.

CONSTRUCTION / MAINTENANCE / REPAIR

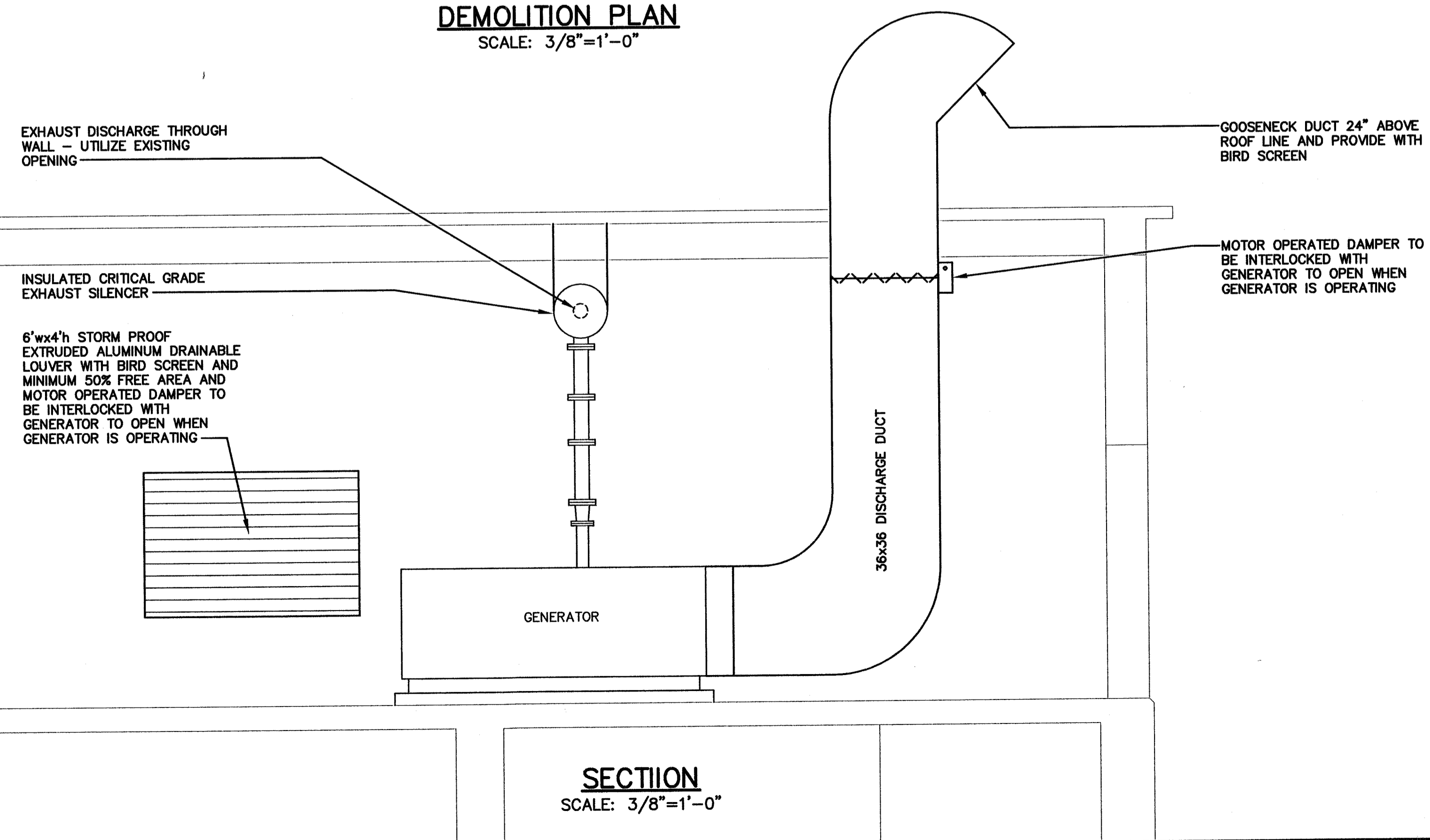
Five Centennial Drive, Peabody, MA 01960-7985



DEMOLITION PLAN
SCALE: 3/8"=1'-0"



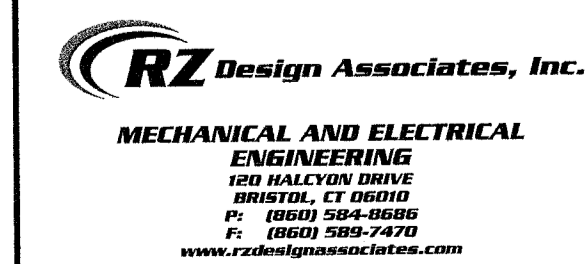
NEW WORK PLAN
SCALE: 3/8"=1'-0"



SECTION
SCALE: 3/8"=1'-0"

NOTES:

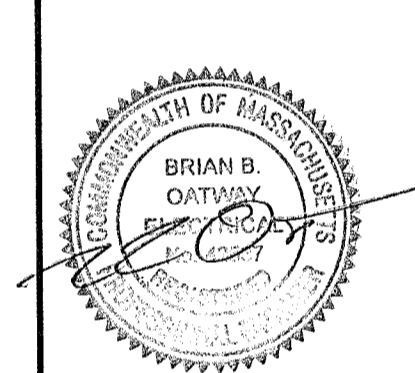
- DISCONNECT AND REMOVE EXISTING GENERATOR, EXHAUST SILENCER AND EXHAUST PIPE.
- DISCONNECT AND REMOVE EXISTING AUTOMATIC TRANSFER SWITCH (ATS).
- MAINTAIN EXISTING GAS SERVICE AND PIPING FOR RECONNECTION TO NEW GENERATOR. VERIFY EXACT SIZE AND ROUTING. VERIFY EXISTING PIPING IS ADEQUATE TO SERVE NEW GENERATOR. PROVIDE ALTERNATE COST TO REPLACE EXISTING LINE FROM METER TO GENERATOR IF DETERMINED TO BE INADEQUATE. MODIFY REGULATOR AS NECESSARY FOR NEW GENERATOR.
- DISCONNECT AND REMOVE EXISTING WATER SERVICE TO EXISTING GENERATOR. SEAL FLOOR PENETRATIONS. VALVE AND CAP EXISTING PIPING ABOVE FLOOR.
- NEW GENERATOR SHALL BE EQUAL TO A KOHLER POWER SYSTEMS MODEL No. 125REZGB COMPLETE WITH BATTERY CHARGER, BLOCK HEATER (120V, 1800W), CRITICAL GRADE EXHAUST SILENCE, FLEXIBLE EXHAUST CONNECTION, RADIATOR DUCT FLANGE, ALL NECESSARY ACCESSORIES AND 175A 3P OUTPUT CIRCUIT BREAKER. PROVIDE UNIT WITH 1 YEAR STANDBY WARRANTY.
- NEW AUTOMATIC TRANSFER SWITCH (ATS) SHALL BE EQUAL TO KOHLER MODEL No. KSS-DMTA-200S, 200A, 480V, 3 POLE, 4 WIRE, SN - PROVIDE COMPLETE WITH ALL STANDARD EQUIPMENT HOUSED IN A NEMA 1 ENCLOSURE.
- PROVIDE ALL NECESSARY CONNECTIONS FROM TRANSFER SWITCH TO GENERATOR, BATTERY CHARGER, BLOCK HEATER, DAMPER ACTUATORS AS REQUIRED FOR THE PROPER OPERATION ON THE GENERATOR.
- PROVIDE 120V CONNECTIONS FROM EXISTING SPARE C/B'S IN EXISTING 120V ELECTRICAL PANEL TO BATTERY CHARGER, BLOCK HEATER AND DAMPER ACTUATORS. IF SPARE BREAKERS DO NOT EXIST, PROVIDE NEW C/B'S TO MATCH EXISTING.
- DUCTWORK SHALL BE HOT-DIPPED GALVANIZED SHEET CONFORMING TO ASTM A653 WITH G60 COATING. FABRICATE, INSTALL AND SEAL IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
- PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACTS GENERAL CONDITIONS AND IN COORDINATION WITH ALL OTHER TRADES. ALL WORK SHALL BE DONE IN CONFORMANCE AND PROVISIONS OF ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND LAWS, CODES AND STANDARDS:
2009 INTERNATIONAL BUILDING CODE w/ MASSACHUSETTS 780 CMR AMENDMENTS
2009 INTERNATIONAL MECHANICAL CODE w/ MASSACHUSETTS 248 CMR REGULATIONS
2009 INTERNATIONAL PLUMBING CODE w/ MASSACHUSETTS 248 CMR REGULATIONS
2008 NATIONAL ELECTRIC CODE (NFPA 70) MASSACHUSETTS 527 CMR AMENDMENTS
2009 INTERNATIONAL FIRE CODE w/ MASSACHUSETTS 527 CMR REGULATIONS
2009 INTERNATIONAL ENERGY CONSERVATION CODE w/ MASSACHUSETTS 521 CMR REGULATIONS
IBC 2009 ICC/ANSI A117.1-2003 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
- WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIALS, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, FEES, LICENSES, PERMITS AND ADMINISTRATIVE TASKS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
- STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE.
- ALL CONDUIT SHALL BE EMT, MINIMUM 3/4". ALL WIRING TO BE COPPER WITH TYPE THHN INSULATION, MINIMUM #14 AWG



Weston & Sampson
C M R I N C
CONSTRUCTION / MAINTENANCE / REPAIR
Weston & Sampson CMR, Inc.
Five Centennial Drive, Watbury, MA 01660
(978) 632-1900 (800) 5AMPSON
www.westonandsampson.com

No.	Date	Dr. By	Ck. By	App. By	Description				
		A	P	P	R	O	V	E	D

REGISTERED PROFESSIONAL ENGINEER _____ DATE _____



CITY OF WALTHAM, MASSACHUSETTS
PUMP STATION NO. 2 (SECOND AVENUE) STANDBY GENERATOR REPLACEMENT

HVAC / ELECTRICAL PLANS

SCALE: NOTED

CONTRACT: _____

JOB NO: MZ090096

DR BY: WGS

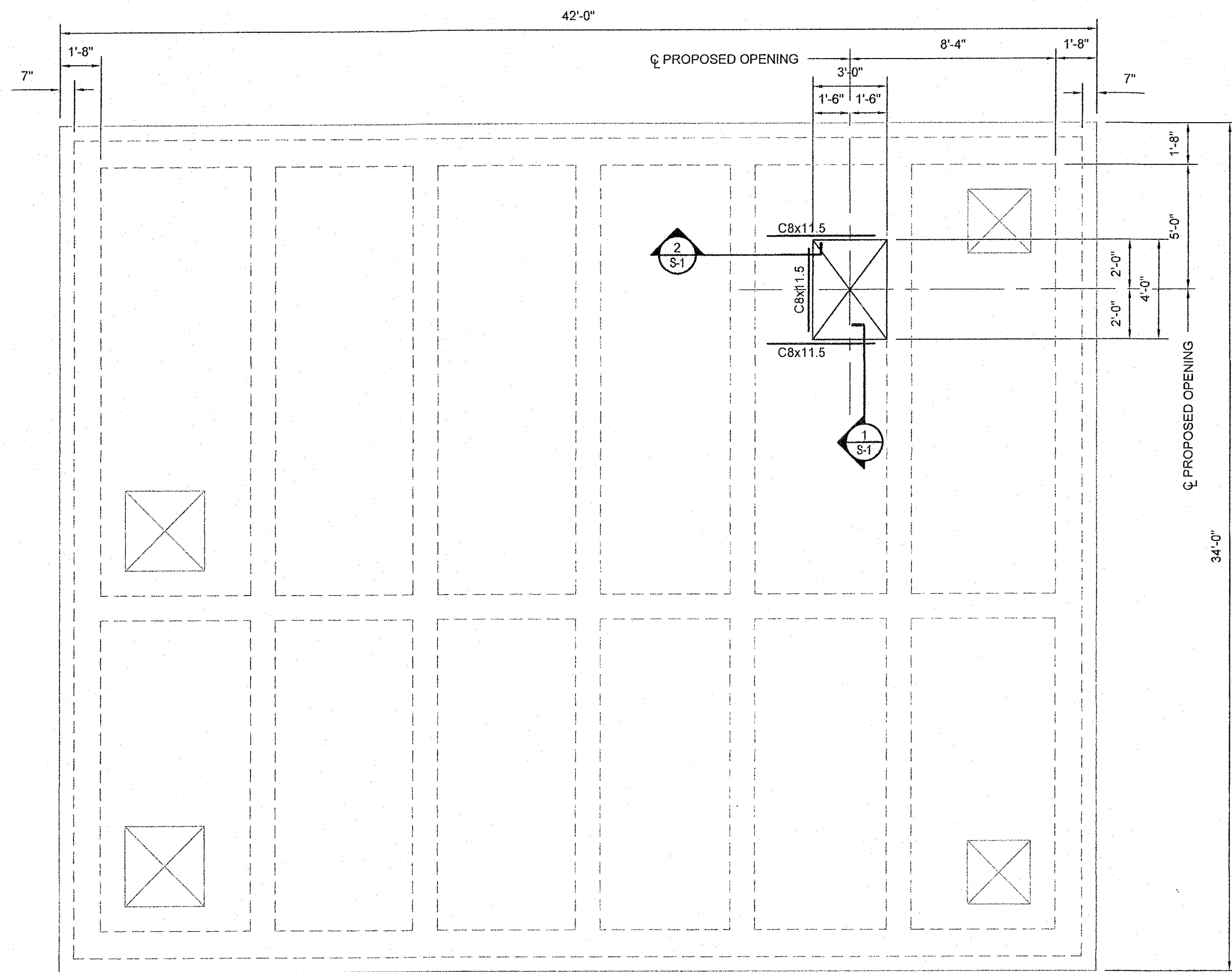
CK BY: BUZ

APP BY: BUZ

CADD NO: E-1

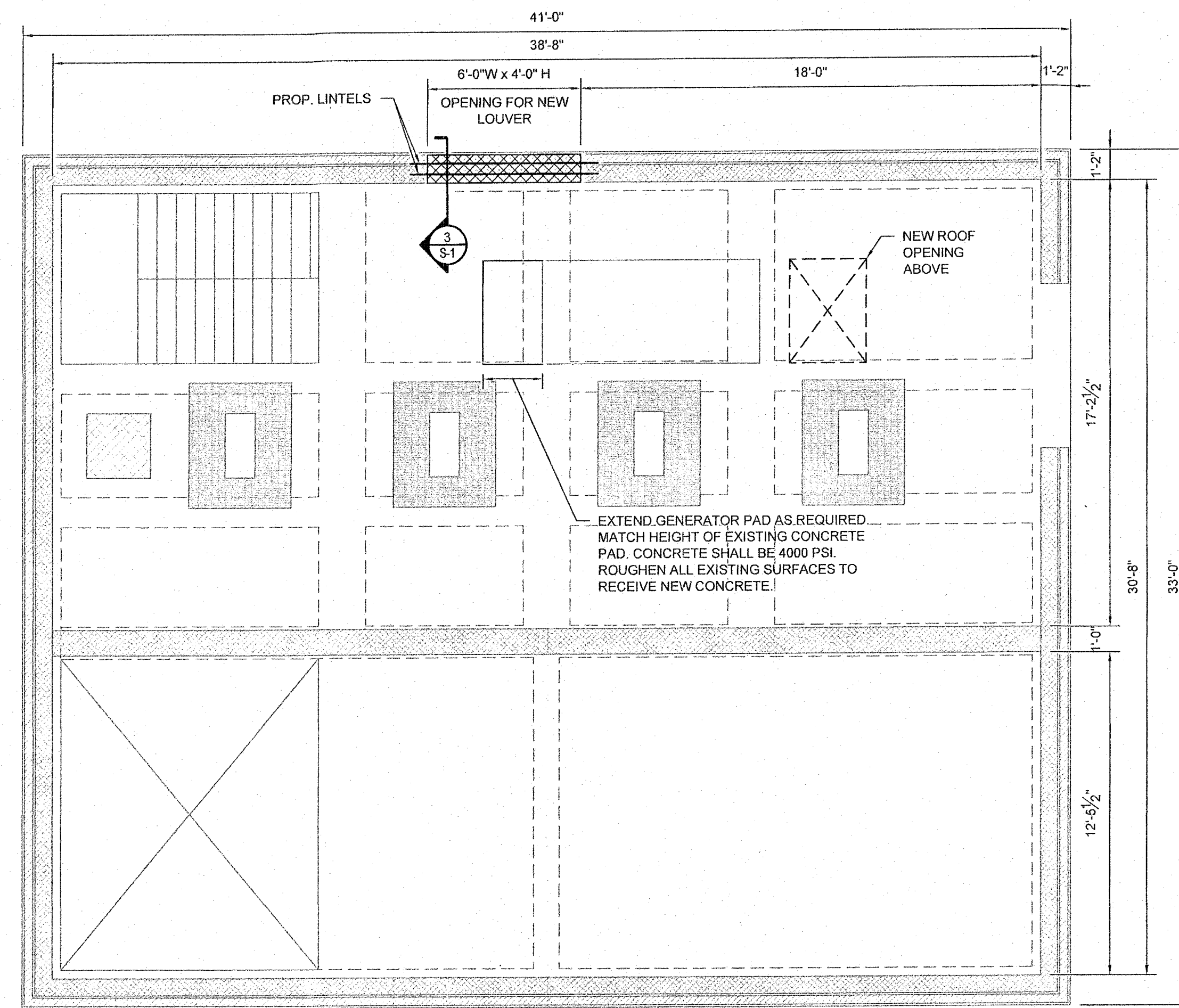
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SHEET 2 OF 3



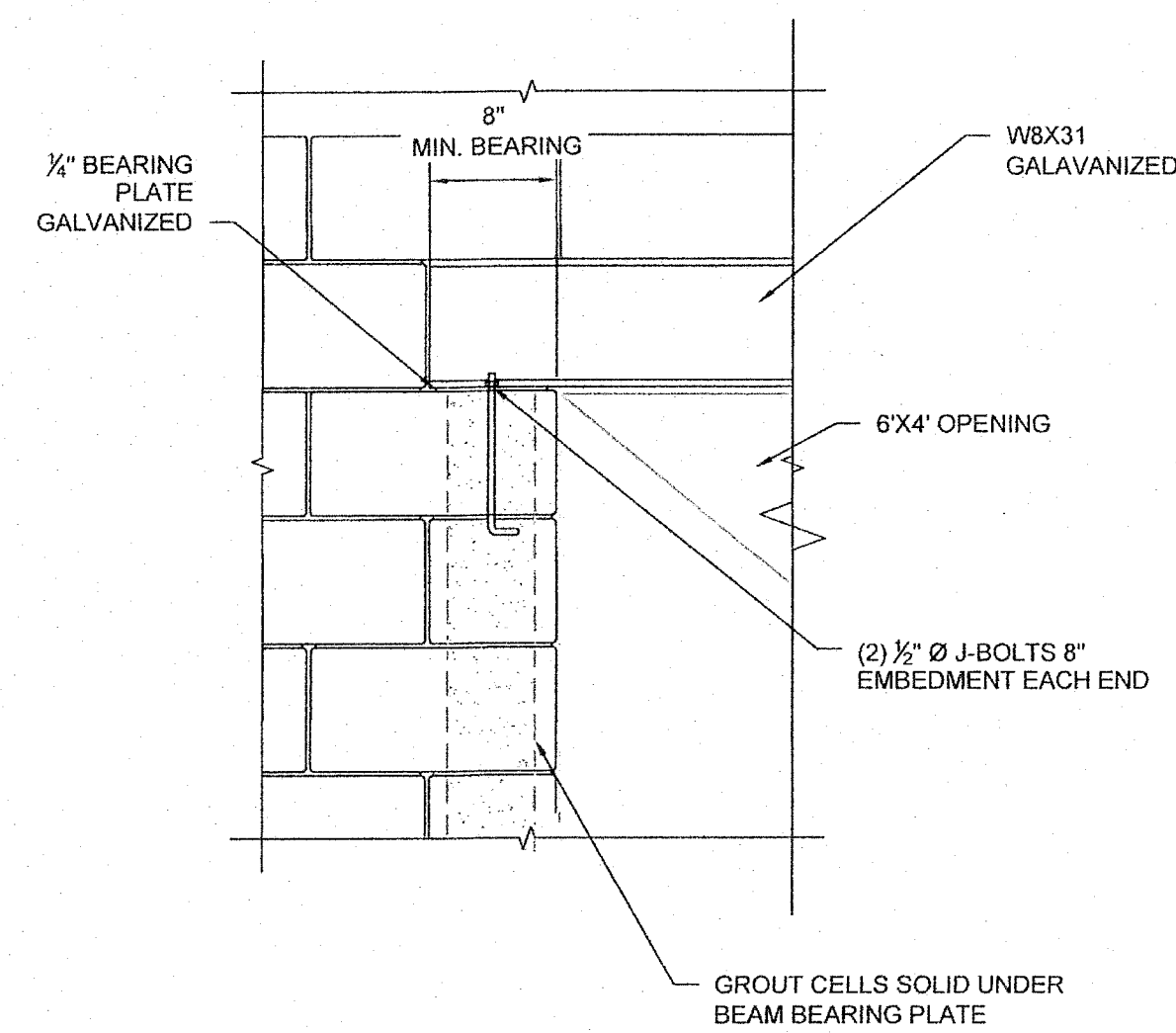
EXISTING ROOF PLAN

SCALE: 1/4" = 1'-0"



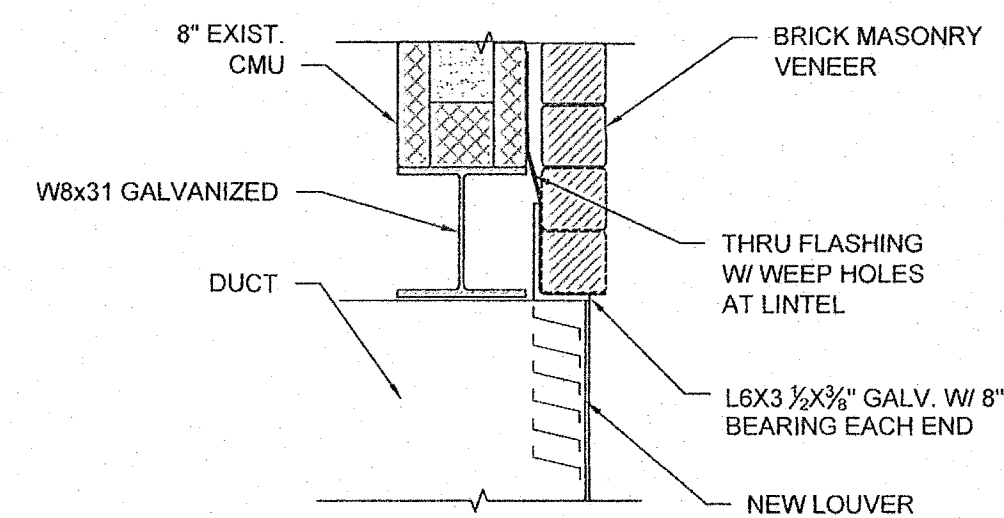
EXISTING FLOOR PLAN

SCALE: 1/4" = 1'-0"



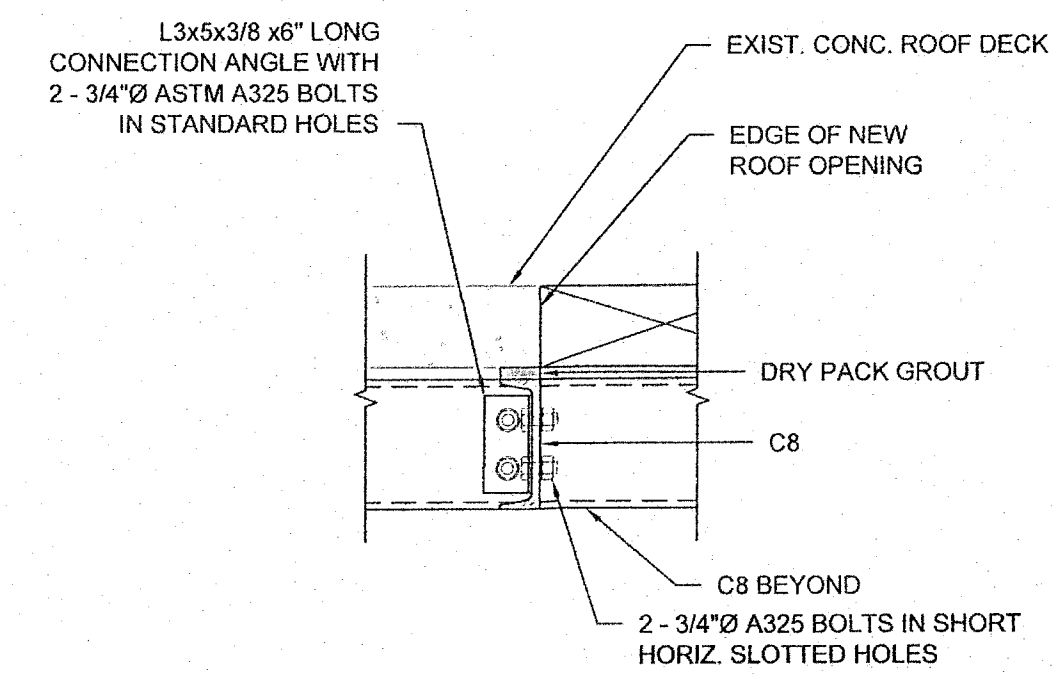
LINTEL BEARING DETAIL

SCALE: 1" = 1'-0"



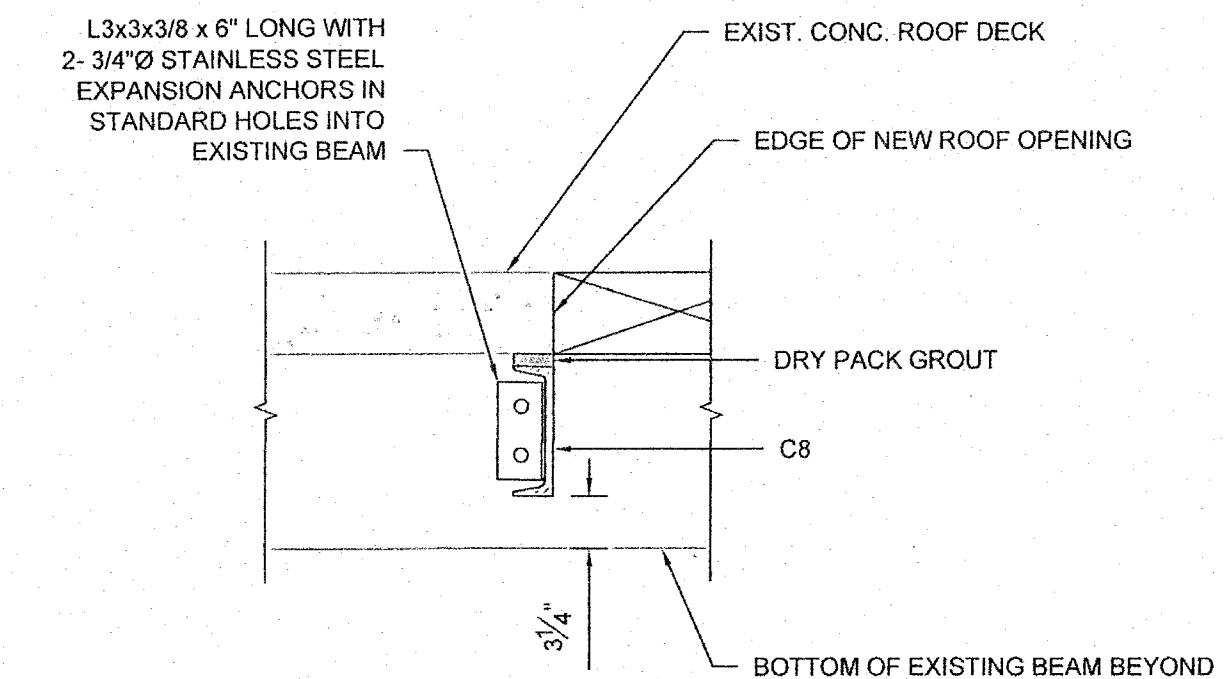
3 SECTION

SCALE: 1" = 1'-0"



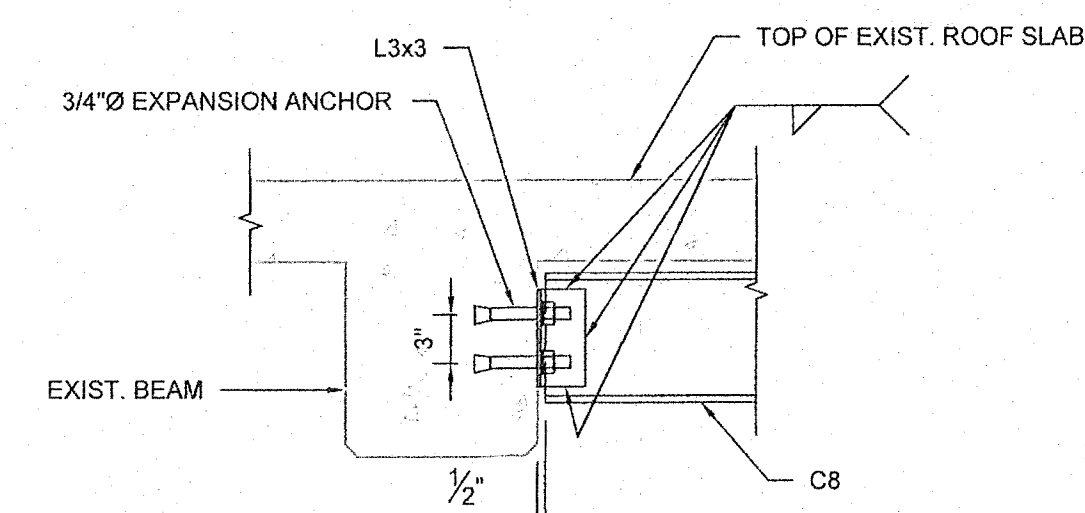
2 SECTION

SCALE: 1" = 1'-0"



1 SECTION

SCALE: 1" = 1'-0"



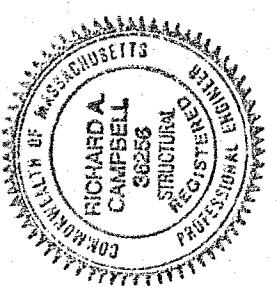
CONNECTION TO EXISTING BEAM DETAIL

SCALE: 1" = 1'-0"

NOTES:

1. STRUCTURAL STEEL CHANNELS AND ANGLES SHALL CONFORM TO ASTM A36, F_y = 36 KSI.
2. STRUCTURAL STEEL W-SHAPES SHALL CONFORM TO ASTM A992, F_y = 50 KSI.
3. ALL STRUCTURAL STEEL AND BOLTS CONNECTING STRUCTURAL STEEL SHALL BE HOT-DIPPED GALVANIZED.
4. ALL HIGH STRENGTH BOLTS SHALL CONFORM TO ASTM A325.
5. ALL WELDING SHALL BE DONE IN THE FABRICATORS SHOP PRIOR TO GALVANIZING.
6. ALL FILLET WELDS SHALL BE 3/16", UNLESS NOTED OTHERWISE.
7. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF ANY ITEM. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
8. EXPANSION ANCHORS SHALL BE STAINLESS STEEL.
9. ALL WORK SHALL CONFORM TO THE MASSACHUSETTS STATE BUILDING CODE, 8TH EDITION.
10. CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL SHOP DRAWINGS FOR ALL STRUCTURAL STEEL AND EXPANSION ANCHORS.

No.	Date	Dr. By	Ck. By	App. By	Description
1					A P P R O V E D
					REGISTERED PROFESSIONAL ENGINEER
					DATE: July 24, 2012



CITY OF WALTHAM, MASSACHUSETTS PUMP STATION NO. 2 (SECOND AVENUE) STANDBY GENERATOR REPLACEMENT	CONTRACT:	SCALE:	AS NOTED
JOB NO. - IM2080096	DR. BY:	SRB	SRB
FILE NO. 194-33	CHK. BY:	RAC	SRJ
STRUCTURAL PLANS AND DETAILS			

