H 2 M architects + engineers

CONTRACT AND SPECIFICATIONS

TOWN OF RIVERHEAD
CALVERTON SEWER DISTRICT
SUFFOLK COUNTY, NEW YORK

UPGRADE OF THE SEWAGE TREATMENT PLANT
ENTERPRISE PARK AT CALVERTON
MODULE NO. 1 (0.100 MGD)

CONTRACT G – GENERAL AND MECHANICAL CONSTRUCTION

CONTRACT E – ELECTRICAL CONSTRUCTION

CONTRACT P – PLUMBING CONSTRUCTION

CONTRACT S – FORCE MAIN/RECHARGE BED CONSTRUCTION

Project No: CASD 1602

SUPERVISOR
Hon. Laura Jens-Smith

TOWN BOARD
Catherine Kent
Jodi Giglio
Timothy Hubbard
James Wooten

ATTORNEY
Robert Kozakiewicz, Esq.

SUPERINTENDENT
Michael P. Reichel.

NOVEMBER 2018

Prepared by:

H2M architects + engineers
538 Broad Hollow Road, 4th Floor East
Melville, NY 11747
tel 631.756.8000 fax 631.694.4122

TOWN OF RIVERHEAD / CALVERTON SEWER DISTRICT
CONTRACT AND SPECIFICATIONS
FOR
UPGRADE OF THE SEWAGE TREATMENT PLANT – ENTERPRISE PARK AT CALVERTON
MODULE NO. 1 (0.100 MGD)
CONTRACT E – ELECTRICAL CONSTRUCTION
H2M PROJECT NO.: CASD 1602

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The Town Board of Riverhead will receive bids for the following contracts:

UPGRADE OF THE SEWAGE TREATMENT PLANT – ENTERPRISE PARK AT CALVERTON – MODULE NO. 1 (0.100 MGD)

CONTRACT G - GENERAL AND MECHANICAL CONSTRUCTION
CONTRACT P - PLUMBING CONSTRUCTION
CONTRACT E - ELECTRICAL CONSTRUCTION
CONTRACT S – FORCE MAIN/RECHARGE BED CONSTRUCTION

H2M PROJECT NO.: CASD 1602

for the Calverton Sewer District at the Town Clerk's office, Town Hall, 200 Howell Avenue, Riverhead, New York 11901, at 11:00 AM prevailing time, on Wednesday December 19, 2018, at which time and place the bids will be publicly opened and read.

Plans and specifications may be examined on, or after, **Thursday**, **November 15, 2018** by visiting the Town of Riverhead website: townofriverheadny.gov and click on “Bid Requests”.

All bid documents are to be obtained from the Town of Riverhead Website. Separate registration of bid documents holder under the “Notifications” section of the Town of Riverhead website is required in order to receive updates or notices regarding this project, which will only be distributed via the website.

Each proposal must be accompanied by a bid bond in the amount of five percent (5%) of the total bid, or a certified check made payable to the TOWN OF RIVERHEAD as assurance that the bid is made in good faith.

The right is reserved to reject any or all bids, to waive any informalities, and to accept the lowest responsible bid.

BY ORDER OF THE TOWN BOARD
TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK

ACTING AS THE GOVERNING BODY
OF THE CALVERTON SEWER DISTRICT

DIANE M. WILHELM, TOWN CLERK

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1. RECEIPT AND OPENING OF BIDS

Pursuant to Town Board Resolution, the Town of Riverhead invites bids on the forms herein provided for the UPGRADE OF THE SEWAGE TREATMENT PLANT – ENTERPRISE PARK AT CALVERTON – MODULE NO. 1 (0.100 MGD), CONTRACT G – GENERAL CONSTRUCTION, CONTRACT No. CASD 1602G, CONTRACT P – PLUMBING CONSTRUCTION, CONTRACT No. CASD 1602P, CONTRACT E – ELECTRICAL CONSTRUCTION, CONTRACT No. CASD 1602E, & CONTRACT S – FORCE MAIN AND RECHARGE BED CONSTRUCTION, CONTRACT No. CASD 1602S; 200 Howell Avenue, Riverhead, New York, time, date and place indicated in the Notice to Bidders.

2. PLAN DEPOSITS

Plan deposits are not required. No hard copies of the bid plans will be issued. All bid documents shall be obtained from the Town of Riverhead website in electronic PDF format.

3. PLANS AND SPECIFICATIONS

Complete sets of Plans and Specifications for the inspection of prospective bidders will be found on file with the Town Clerk, Town of Riverhead, Town Hall, 200 Howell Avenue, Riverhead, New York, and at the office of H2M architects + engineers, 538 Broad Hollow Road, 4th Floor East, Melville, New York.

All contractors must input their names, telephone numbers, fax numbers, and correct mailing addresses to access of the Plans and Specifications from the Town website.

4. VERBAL ANSWERS

The Town Board, its agents, servants or employees, or the Engineer, will not be responsible in any manner for verbal answers to any inquiries regarding the meaning of the Contract Drawings or Specifications given prior to the awarding of the contract.

5. EXAMINATION OF SITE

Bidders must satisfy themselves by personal examination of the location of the proposed work and of the actual conditions and requirements of the work and shall not, at any time after the submission of a proposal, dispute or complain of such estimate or assert that there was any misunderstanding in regard to the depth and character of excavation and extent of dewatering to be made or the nature of the work to be done.

6. FORM, PREPARATION AND PRESENTATION OF PROPOSAL

In submitting the bid, the bid sheets furnished are to be filled in but not detached from the Contract Form. In no case is the Contract Form to be filled in or signed by the bidder. All proposals and either the certified check or bid bond must be placed in a sealed opaque envelope bearing the Bidder's firm name and address and separately marked for each contract a bid is submitted for:

"UPGRADE OF THE SEWAGE TREATMENT PLANT – ENTERPRISE PARK AT CALVERTON – MODULE NO. 1 (0.100 MGD), CONTRACT G – GENERAL CONSTRUCTION, CONTRACT No. CASD 1602G"

" UPGRADE OF THE SEWAGE TREATMENT PLANT – ENTERPRISE PARK AT CALVERTON – MODULE NO. 1 (0.100 MGD), CONTRACT P – PLUMBING CONSTRUCTION, CONTRACT No. CASD 1602P"

" UPGRADE OF THE SEWAGE TREATMENT PLANT – ENTERPRISE PARK AT CALVERTON – MODULE NO. 1 (0.100 MGD), CONTRACT E – ELECTRICAL CONSTRUCTION, CONTRACT No. CASD 1602E"

" UPGRADE OF THE SEWAGE TREATMENT PLANT – ENTERPRISE PARK AT CALVERTON – MODULE NO. 1 (0.100 MGD), CONTRACT S – FORCE MAIN AND RECHARGE BED CONSTRUCTION, CONTRACT No. CASD 1602S"

but otherwise unmarked. All blank spaces for bid prices must be filled in, in ink, in both works and figures, with the total or gross sum for which the bid is made. Bids that contain any omission, erasure, alteration, addition or items not called for in the itemized bid form or that contract irregularities of any kind may be rejected. In case of discrepancy between the unit price and total amount bid for any item, the unit price, as expressed in words, shall govern.

The Proposal contained herein shall be used in making out bids. Any proposal not in accordance with these instructions or containing bids not asked for may be rejected. While separate prices are required for various items under this contract, it is understood that the contract will be awarded as a whole.

As the estimates of quantities of items stated in the Proposal are approximate only, bidders are required to submit their proposal upon and in the following express conditions, which shall apply and become part of every proposal received.

Bids will be compared by total amounts; said total amount being the sum of the products of the quantities multiplied by the unit prices bid for the various unit price items, with due consideration being given to the lump sum prices bid and stipulated amounts for any contingent or optional items. Unbalanced bids will not be accepted.

Each bidder shall fill out in ink, in both words and figures, in the spaces provided, its unit or lump sum bid, as the case may be, for each item in said Proposal for which it is submitting a bid. If there is any discrepancy between the prices in words and figures, the prices in words shall govern as unit and lump sum prices.

A bid may not be considered valid which does not include bids for all items in the Proposal.

Each bidder must state, in its proposal, its full name and business address, and the full name of every person, firm or corporation, interested in same, and the address of every person or firm, or president and secretary of every corporation, interested with it.

If the contract is not awarded by the Town Board within ninety (90) days after the receipt of bids, the obligation of the bidder under this Proposal may terminate at its option and it shall thereupon be entitled to a refund of its certified check or release of its bid bond furnished by it as security with its proposal.

7. BID SECURITY

(A) The bid must be accompanied by a certified check on the solvent bank or trust company with its principal place of business in New York State, or an acceptable bid bond, in an amount equal to not less than five percent (5%) of the total bid, made payable to the

Town of Riverhead (herein identified as the Town), as assurance that the bid is made in good faith. The certified checks or bid bonds will be returned after execution of the contract between the Town and the successful bidder; the certified check or bid bond of the successful bidder will be retained until filing and approval of the Performance Bond and until the completion of ten percent (10%) of the work under the contract.

(B) The successful bidder, upon his failure or refusal to execute and deliver the contract insurance and bonds required within fourteen (14) days after the date of notice of the acceptance of his bid, shall forfeit to the Town, as liquidated damages for such failure or refusal, the security deposited with his bid.

(C) Each proposal must also be accompanied by a Letter of Intent from a surety company acceptable to the Town, which letter shall assure the Town that the bidder, if awarded the Contract, will be able to secure from the surety the required bonds in the required amounts.

8. QUALIFICATIONS OF BIDDERS

(A) Forms or qualifications of bidders, giving evidence of sufficient facilities, equipment, experience and financial ability to insure completion of the work will be provided, and the three lowest bidders shall be prepared to file at the option of the Town said form, properly filled in and sworn to in the Office of the Town Clerk within seven (7) days after the opening of bids.

(B) Information contained in any statement of financial ability shall be not more than thirty (30) days old at the time of submission. If a financial statement is already on file with the Town Clerk, a new one need not be submitted provided the information contained therein is not more than thirty (30) days old at the time of the opening of bids and provided the contractor has not materially changed since submission of said statement.

9. REJECTION OF BIDS

(A) The Town Board reserves the right to waive any informalities in, or reject any bid if the evidence submitted in the qualifications statement or an investigation of such bidder fails to satisfy the Town Board that such bidder is reputable, reliable and responsible, and that they possess the necessary qualifications (financial, labor, equipment and otherwise properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. The Board reserves the right to reject any and all bids which do not conform to the Proposal. Conditional bids will not be accepted.

(B) The Town Board shall be the sole judge of the qualifications of the bidders and of the merits thereof and reserves the right to reject any bid if the record of the bidder in the performance of contracts, payment of bills and meeting of obligations to subcontractors, material men or employees is not satisfactory to the Town Board, or if the evidence submitted by, or the investigation of, such bidders fails to satisfy the Town Board that it is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein.

(C) The Town Board reserves the right to reject any and all bids, in whole or in part, to waive any information in any or all bids, and to accept the bid or part thereof which it deems most favorable to the Town after all bids have been examined and/or checked. No bid shall be withdrawn for a period of forty-five (45) days after being publicly opened and read.

(D) The Town Board reserves the right to reject any bids, in whole by a low bidder in which the owner of the low bidder has violated Prevailing Wage and Supplemental Payment Requirements of the Labor Law, and any other labor provisions, including but not limited to child labor violations, failure to pay wages, or unemployment insurance tax delinquencies within the past five (5) years. An owner is defined in this paragraph as an individual who owns more than 50% of a past or present company.

10. WITHDRAWAL OF BID

(A) Any bid may be withdrawn prior to the Bid Opening Date and Time specified above or authorized postponement.

(B) Bids may not be withdrawn before forty-five (45) days after the Bid Opening Date and Time, unless a clerical mistake or error is claimed by the Bidder.

(C) If a Bidder claims to have made a clerical mistake or error in his Bid, he shall notify the Owner within the time limitations set forth in General Municipal Law Section 103 (11) (a) together with all documentary evidence in support of the Bidder's claim of a bid mistake or error.

11. BIDDER'S RESPONSIBILITY

(A) The Bidder shall include the complete cost of furnishing all materials, labor and equipment necessary to complete the work in accordance with the plans and specifications, including all other expenses incidental thereto.

(B) Bidders must examine the plans and specifications and exercise their own judgment as to the nature and amount of the whole of the work to be done, and for the bid prices, must assume all risks of variance by whomever made in computation or statement of amounts or quantities necessary to fully complete the work in strict compliance with the contract documents.

(C) The contractor shall assume all risks and responsibility and shall complete the work in whatever material and under whatever conditions he may encounter or create, without extra cost to the Town.

(D) Attention is hereby particularly directed to the provisions of the contract whereby the Contractor will be responsible for any loss or damage that may happen to the work or any part thereof during its progress; and also whereby the Contractor shall make good any defects or faults that may occur during the progress of the work or within twelve (12) months after date of the Engineer's approval of the final payment request.

(E) No plea of ignorance or misunderstanding of conditions that exist or that may hereafter exist, or of conditions or difficulties that may be encountered in the execution of the work under this contract, as a result of failure to make the necessary examinations and investigations, will be to fulfill in every detail all of the requirements of the contract documents, or will be accepted as a basis for any claims whatsoever for extra compensation or for extension of time.

12. SIGNATURE OF CONTRACTOR

The bidder to whom a contract may be awarded shall appear at the office of the Town Board, with the surety documents offered by it, within seven (7) days, Saturdays and Sundays excepted, after date of notification of the acceptance of its proposal, and there sign the contract in quadripartite for the work and furnish approved security for its performance.

In case of failure to do so, the bidder shall be considered as having abandoned the same, and the check accompanying its proposal shall be forfeited to the Town Board, or the penalty of the bid bond shall be invoked.

13. CONSTRUCTION TERMS AND CONDITIONS

The successful bidder is warned that the work specified in the Conditions of Contract, together with the Information to Bidders, Form of Bid, Plans and Specifications and Instruction of the Town Engineer, or his duly authorized representative, will be strictly enforced.

14. SECURITY FOR FAITHFUL PERFORMANCE AND MAINTENANCE

The successful bidder shall be required to furnish at the execution of the contract an executed bond of a surety company authorized to do business in the State of New York and approved by the Town Board, in an amount equal to 100% of the total amount of the contract, guaranteeing to the Board the faithful performance of the contract and payment of all claims for materials, labor and wages in connection therewith. Prior to the release of the Performance Bond, the Contractor shall deliver to the Town a Maintenance Bond equal to 100% of the total contract price, including all extras which shall remain in effect for a period of one (1) year from the date of the Engineer's approval of the final payment request as a Guarantee Bond.

15. FOREIGN CONTRACTORS

Foreign contractors must comply with the provisions of Articles 9A and 16 of the Tax Law, as amended, prior to submission of a bid for the performance of this work. The certificate of the New York State Tax Commission to the effect that all taxes have been paid by the foreign contractor shall be conclusive proof of the payment of taxes. The term “foreign contractor” as used in this subdivision means in the case of an individual, a person who is a legal resident of another state or foreign country; and in the case of a foreign corporation, one organized under the laws of a state other than the State of New York.

16. LIEN LAW

Attention of all persons submitting bids is specifically called to the provisions of Section 25, Subdivision 5, Section 25A and 25B of the Lien Law, as amended, in relation to funds being received by a contractor for a public improvement declared to constitute trust funds in the hands of such contractor to be applied first to the payment of certain claims. Pursuant to Section 220-a of the Labor Law all contractors and subcontractors and subcontractors to subcontractors shall file an affidavit attesting to the payment to employees.

17. SUBCONTRACTORS AND SUPPLIERS

Within five days after receipt from the Town Engineer, or his representative, of notice to begin work, the contractor will furnish written notice of names of all subcontractors to be employed on the project and the general items of work to be dome by them. Simultaneously, the contractor shall furnish written notice of the names and suppliers of materials to be used on the project. The

town may disapprove, for good cause, any subcontractor or material supplier selected by the contractor by giving written notice of its disapproval within five (5) days after receiving the names of subcontractors and material suppliers, to the contractor who shall thereupon promptly notify the town of the names of the subcontractor or material supplier selected in replacement which shall again be subject to approval by the town.

18. PENAL LAW

Attention is called to Section 1918 of the Penal Law as follows:

Construction or blasting near pipe conveying combustible gas

No person shall discharge explosives in the ground, nor shall any person other than a state or county employee regularly engaged in the maintenance and repair thereof excavate in any then existing street, highway, or public place, unless notice thereof in writing shall have been given at least seventy-two (72) hours in advance to the person, corporation or municipality engaged in the distribution of gas in such territory. The person having direction or control of such work shall give such notice, and further he shall ascertain whether there is within one hundred (100) feet in such street, highway or public place, or in the case of a proposed discharge of explosives within a radius of two hundred (200) feet of such discharge, any pipe of any other person, corporation or municipality conveying combustible gas, and if thereby any such pipe, he shall also five such notice to any other such person, corporation or municipality. Provided, however, that in any emergency involving danger to life, health, or property it shall be lawful to excavate without using explosives if the notices prescribed herein are given as soon as reasonably possible, and to discharge explosives to protect a person or persons from an immediate and substantial danger of death or serious personal injury is such notices are given before any such discharge is undertaken. Any such work shall be performed in such manner as to avoid danger to any pipe conveying combustible gas. Any violation of the provisions of this section shall be a misdemeanor.

19. REFUSAL TO WAIVE IMMUNITY

Pursuant to the provisions of Section 103-A of the General Municipal Law, in the event that the bidder or any members, partner, director or officer of the bidder, should refuse when called before a grand jury to testify concerning any transaction or contract had with the State, any political subdivision thereof, a public authority or with any public department, agency or official of the State, of any political subdivision thereof or of an authority, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant questions concerning such transaction or contract, such person, and any firm, partnership or corporation of which he is a member, partner, firm director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with any municipal corporation or any public department, agency, or official thereof, for goods, work or services, for a period of five (5) years after such refusal, and any and all contracts made with any municipal corporation or any public department, agency or official thereof on or after the first day of July, 1959, by, such person and any firm, partnership or corporation of which he is a member, partner, director or officer may be canceled or terminated by the municipal corporation without incurring any penalty or damages on account of such cancellation of termination, but any monies owing by the municipal corporation for goods delivered or work done prior to the cancellation or termination shall be paid.

20. ADDENDA AND INTERPRETATIONS

Every request for information or interpretation of the Contract Documents or Drawings must be addressed in writing to Christopher A. Weiss, P.E., Discipline Director of Wastewater Engineering, H2M architects + engineers, 538 Broad Hollow Road, 4th Floor East, Melville, New York, 11747 and to be given any consideration, must be received at least five (5) days prior to the date fixed for the opening of bids. Request for information or interpretation of the Contract Documents or Drawings will only be evaluated and considered if made by registered plan holders as recorded on the Town's website. Any such interpretations or supplemental instructions will be in the form of written addenda, and will be posted on the Town's website for access by all prospective bidders/registered plan holders. The failure of any bidder to receive any such addenda will not relieve the bidders of any obligations under his bid as submitted. Any addenda so issued shall become part of the Contract Documents.

21. LIQUIDATED DAMAGES

Liquidated damages in the amount of One Thousand Dollars and 00 Cents ($1,000.00) will be assessed for each consecutive calendar day of delay not excusable as provided in the Contract Documents.

22. EXEMPTION FROM SALES AND USE TAXES

In accordance with Chapter 513 of the laws of 1974 adopted by the New York State Legislature, amending Section 1115(a) of the tax law, specifically paragraphs 15 and 16, political subdivisions, as described in subdivision (a) paragraph (L) of Section 1116 of the tax laws, of the State of New York are exempt from the payment of sales and use taxes imposed on tangible personal property within the limitations specified in tax law 115 (a) (15) and (16).

(15) Tangible personal property sold to a contractor, subcontractor or repairman for use in erecting structure or building of an organization described in subdivision (a) of Section 116, or adding to, altering or improving real property, property or land of such an organization, as the terms real property, property and land are defined in the real property tax law; provided, however, no exemption shall exist under this paragraph unless such tangible personal property is to become an integral component part of such structure, building or real property.

(16) Tangible personal property sold to a contractor or repairman for use in maintaining, servicing or repairing real property, or land of an organization described in subdivision (a) of Section 116, as the terms real property, property or land are defined in the real property tax law; provided, however, no exemption shall exist under this paragraph unless such tangible personal property is to become an integral component part of such structure, building or real property.

Contractors entering into contract with the Town of Riverhead shall be exempt from payment of sales and use tax described above. Procedures and forms are available to the contractor direct from the Instructions and Interpretations Unit, State of New York, Department of Taxation and Finance, State Campus, Albany, New York 12227.

23. METHOD OF AWARD

All bids will be compared based on the lowest bid price(s) submitted for the work to be done in addition to the qualifications of the bidder. Bidder may be requested to submit additional information such as references.

24. TIME FOR COMMENCEMENT OF WORK

The bidder, when submitting his bid, must be prepared to commence work not later than Twenty Eight (28) days after receiving a Notice to Proceed.

Work shall commence as stipulated in the construction schedule provided by the Town of Riverhead or alternate schedule provided by the Contractor which alternate schedule is acceptable to the Town and shall meet the stipulations of this contract. The entire work must be satisfactorily completed and the project improvements available for use within the completion time stipulated. For additional information see Conditions of Contract, Section 5, Time of Completion.

25. PAYMENT

Upon completion of the work under this contract, the contractor shall notify the Town Engineer of his completion. The Town Engineer will then make a final inspection and submit to the contractor a "punch list" if required. Upon final acceptance of the work by the Town Engineer, the contractor shall be paid one lump sum payment equal to the amount bid herein minus previous payments and plus or minus other contract approved charge orders. Contractor shall submit a Receipt on company letterhead in the amount billed, a signed Town of Riverhead Voucher, Certified Payroll Records, Wage Disclaimer and the No Lien Affidavit attesting to the payment of employees. Payment shall not be processed until all necessary paperwork is received.

26. NYS LABOR LAW

The contractor and each and every subcontractor performing work at the site of the project to which this contract relates shall comply with the applicable provisions of the Labor Law, as amended, of the State of New York.

27. NYS WAGE RATES

The rates of wages determined by the New York State Industrial Commissioner pursuant to the Labor Law, which are to be paid on this project, are set forth herein immediately following:

PREVAILING WAGE RATES

CURRENT PREVAILING WAGE RATES SCHEDULE
PRESENTED ON THE PAGES DIRECTLY FOLLOWING THIS
INSTRUCTION TO BIDDERS SECTION

28. FEDERAL LABOR LAW

If this project is being assisted by funding from the Federal Government of the United States of America under one or more current federal funding programs, and as such, the performance of all work contemplated under the terms and conditions of this set of plans, specifications and related documents must conform to certain basic and specific standards and requirements of both Federal and New York State governments.

29. FEDERAL WAGE RATES

The rates of wages determined by the Federal Government of the United State of America pursuant to the Labor Law, which are to be paid on this project, are set forth herein immediately following:

30. INSURANCE REQUIRED BY THE TOWN OF RIVERHEAD

The Contractor shall not commence any work until it has obtained and had approved by the Town all of the insurance specified and required by the Contract.

The successful bidder will be required to procure and pay for the following types of insurance, in accordance with the provisions of the Conditions of Contract:

(A) Workers' Compensation Insurance.
(B) Public Liability and Property Damage.
(C) Contractor's Liability and Contractor's Property Damage.
(D) Owner's Protective Public Liability and Property Damage.

Insurance documents meeting the requirements of Conditions of Contract, Section 38, Contractor's Insurance, shall be submitted within 14 calendar days from the date of award. Failure to provide acceptable insurance certificate(s) within this time frame shall result in the termination of Primary Contractor status.

The Contractor shall not permit any subcontractor to commence any operation on the site until satisfactory proof of carriage of the above required insurance has been posted with, and approved by, the Town Board.

31. TERM OF CONTRACT

The term of this contract shall be until the completion date set by the Notice to Proceed and the length of contract time (calendar days) as stipulated in the Proposal Form. The Town of Riverhead shall have the option of extending this contract upon good cause shown by the Contractor.

32. CERTIFIED PAYROLL RECORDS

State of New York Department of Labor

On September 10, 1997, Governor Pataki signed into law Assembly Bill 6394-B amending Article 8, Section 220, of the NYS labor Law to include the following language:

Every contractor and sub-contractor shall submit to the department of jurisdiction within thirty (30) days after issuance of its first payroll, and every thirty (30) days thereafter, a transcript of the original payroll record, as provided by this article, subscribed and affirmed as true under penalties of perjury. The DEPARTMENT OF JURISDICTION shall be required to receive and maintain such payroll records.

The original payrolls or transcripts shall be preserved for three years from the completion of the work on the awarded project.

This law took effect on November 9, 1997.

Form WH-347 Inst. is included in this package for contractor's convenience and must be completed, for the current payment request period, including all payroll information for all employees and subcontractor employees including but not limited to laborers, mechanics, foremen, supervisors, etc.

FORM WH347 PRESENTED WITHIN THE ENVIRONMENTAL FACILITIES CORP. PROGRAM REQUIREMENTS AND BID PACKET ON THE PAGES FOLLOWING THE FORM OF CONTRACT

PERSONAL PERFORMANCE FORM
STATEMENT TO BE SUBMITTED
WHEN WORK IS PERFORMED PERSONALLY
(SECTION 10001, TITLE 18, US CODE)

I, _____, hereby certify that I am the

_____ of _____
Title **Name of Firm Submitting Statement**

_____ for _____
Prime Contractor or Subcontractor **Nature of Work**

at _____, located in _____
Name of Building work being done **City and State**

under contract number _____
Government Contract No. (See No. 3 Below)

that _____
State All Work or List the Specific Classes of Work

was done personally by _____
Names of Person(s) Performing Work & Their Connection w/ Firm

_____

that no wages were received for the labor performed; that no mechanics or laborers were employed in the prosecution thereof; and that the work was done during the following periods: __

_____ to _____
Beginning Date **Ending Date**

Last date on which work was performed at the site was _____, _____

_____
Signature

_____
Title

Section 100001 of Title 18 of the United State Code (Criminal Code and Criminal Procedures) shall apply to such statements – 72 Stat 887, 18 U.S.C., among other things, provides that whoever knowingly and willfully makes or uses a document or writing containing any false, fictitious or fraudulent statement or entry, in any matter within the jurisdiction of any department or agency of the United State, shall be fined not more than $10,000 or imprisoned not more than five years, or both).

Instructions for Submission of Statements of Work Performed Personally

1. Prime contractors or subcontractors who perform the work are required to submit in lieu of weekly statements of compliance and payrolls with respect to the payment of wages pursuant to the Copeland Anti-kickbacks regulations, a certified statement clearly showing (1) their contractual relationship,; (2) the scope and dates of work performed (3) that they received no wages; and (4) that no mechanics or laborers were employed in the prosecution of the work. The aforementioned sample form sets forth the wording described for such certified statements.

2. Prime contractors are responsible for the submission of the certified statements of subcontractors. Subcontractors' statement should be forwarded to the prime contractor for transmission to the Government contracting officer or his designated representative.

Statements of prime contractors and subcontractors should be submitted as soon as possible after the last date on which work was performed at the site.

3. To facilitate identification of the project involved, prime contractors should provide their subcontractors with the Government contract number (if exists) or project name as called for on statement form.

4. Prime contractors should furnish their subcontractors with copies of the sample statement form so as to facilitate submission of the necessary information.

33. NO LIEN AFFIDAVIT & WAGE DISCLAIMER

State of New York Department of Labor

Pursuant to Section 220-a of the New York State Labor Law all contractors, subcontractors and subcontractors to subcontractors must file an affidavit pertaining to the payment of all laborers and mechanics, exclusive of supervisory employees.

Affidavit Form 220 and Town of Riverhead Wage Disclaimer Form is included in this package for contractor's convenience. Unless given at later date, leave project number blank.

NOTE: Bidders are advised that this is not a contract authorizing any work. It is the option of the Town to authorize work at any time of the year. Any Town department or agency can use this contract.

MUNICIPAL CORPORATION

TOWN OF RIVERHEAD
200 HOWELL AVENUE
RIVERHEAD, NY 11901

CONTRACT NAME: _____ PROJECT No.: _____

AFFIDAVIT

Pursuant to Section 220-a of the Labor Law and Town of Riverhead Requirements

Note: All contractors, subcontractors, and subcontractors of subcontractors must file this statement for each payment period requested.

I, _____, _____
Name Title

of _____ Contractor
Name of Firm _____ Subcontractor
Project No.: _____ With: _____
Contractor Name

for _____
Indicate Nature of Work

at _____ hereby certify that all laborers have been paid in full for period ended _____, 20 _____. and that there is now due and owning from it/me to any and all laborers (laborers include all laborers, mechanics, foremen and supervisory employees) for daily or weekly wages or supplements on account of labor performed upon the work under said contract, the following amounts to the persons whose names are set forth below opposite such amounts. (If none, so state.)

$ _____ due and owing to _____
$ _____ due and owing to _____
$ _____ due and owing to _____
$ _____ due and owing to _____
Use additional sheet if necessary.

I further certify that I have contracted with the firms listed below as subcontractors, for labor to be performed upon the work under said contract for the current pay period requested. (If none, so state.)

Names and Address of Subcontractors	Type of Work

Use additional sheet if necessary

_____
Signature

STATE OF NEW YORK
SS:
COUNTY OF: _____

On this _____ day of _____ 20____, personally appeared before me _____
to me known and known to me who being by me duly sworn said that he is _____
(Officer)
of _____ the _____
(Contractor or Subcontractor) (Corporation or Partnership)
for which he executed the foregoing statement, for and in behalf of the said _____
contractor; that he has read the said statement so signed by him and known to be the seal thereof and that the same is true and to his own knowledge.

_____ Dated: _____
Notary Public

Section 220-c Labor Law. Any Contractor or subcontractor who shall upon his oath verify any statement required to be filed under this act which is known by him to be false, shall be guilty of perjury and punishable as provided by Section One Thousand Six Hundred and Thirty Three of the Penal Law.

TOWN OF RIVERHEAD
WAGE DISCLAIMER

Note: All contractors, subcontractors, and subcontractor of subcontractors must file this statement for each payment period request.

DATE: _____

TO: TOWN OF RIVERHEAD

FROM: _____
(Contractor)

PROJECT: _____

To our knowledge, the laborers listed on the attached certified payrolls have been paid the prevailing wage rates as established by the Department of Labor.

_____
Signature

_____
Title

_____
Date

Andrew M. Cuomo, Governor

Roberta Reardon, Commissioner

Town of Riverhead

Timothy Nordberg, Project Engineer
538 Broadhollow Road
4th Floor East
Melville NY 11747

Schedule Year	2018 through 2019
Date Requested	11/05/2018
PRC#	2018013228

Location	Calverton, NY
Project ID#	CASD 1602
Project Type	Upgrade of Sewage Treatment Plant - Enterprise Park at Calverton - Module No. 1 (0.100 MGD)

PREVAILING WAGE SCHEDULE FOR ARTICLE 8 PUBLIC WORK PROJECT

Attached is the current schedule(s) of the prevailing wage rates and prevailing hourly supplements for the project referenced above. A unique Prevailing Wage Case Number (PRC#) has been assigned to the schedule(s) for your project.

The schedule is effective from July 2018 through June 2019. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department's website www.labor.state.ny.us. Updated PDF copies of your schedule can be accessed by entering your assigned PRC# at the proper location on the website.

It is the responsibility of the contracting agency or its agent to annex and make part, the attached schedule, to the specifications for this project, when it is advertised for bids and /or to forward said schedules to the successful bidder(s), immediately upon receipt, in order to insure the proper payment of wages.

Please refer to the "General Provisions of Laws Covering Workers on Public Work Contracts" provided with this schedule, for the specific details relating to other responsibilities of the Department of Jurisdiction.

Upon completion or cancellation of this project, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

NOTICE OF COMPLETION / CANCELLATION OF PROJECT

Date Completed: _____ Date Cancelled: _____

Name & Title of Representative: _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

General Provisions of Laws Covering Workers on Article 8 Public Work Contracts

Introduction

The Labor Law requires public work contractors and subcontractors to pay laborers, workers, or mechanics employed in the performance of a public work contract not less than the prevailing rate of wage and supplements (fringe benefits) in the locality where the work is performed.

Responsibilities of the Department of Jurisdiction

A Department of Jurisdiction (Contracting Agency) includes a state department, agency, board or commission: a county, city, town or village; a school district, board of education or board of cooperative educational services; a sewer, water, fire, improvement and other district corporation; a public benefit corporation; and a public authority awarding a public work contract.

The Department of Jurisdiction (Contracting Agency) awarding a public work contract MUST obtain a Prevailing Rate Schedule listing the hourly rates of wages and supplements due the workers to be employed on a public work project. This schedule may be obtained by completing and forwarding a "Request for wage and Supplement Information" form (PW 39) to the Bureau of Public Work. The Prevailing Rate Schedule MUST be included in the specifications for the contract to be awarded and is deemed part of the public work contract.

Upon the awarding of the contract, the law requires that the Department of Jurisdiction (Contracting Agency) furnish the following information to the Bureau: the name and address of the contractor, the date the contract was let and the approximate dollar value of the contract. To facilitate compliance with this provision of the Labor Law, a copy of the Department's "Notice of Contract Award" form (PW 16) is provided with the original Prevailing Rate Schedule.

The Department of Jurisdiction (Contracting Agency) is required to notify the Bureau of the completion or cancellation of any public work project. The Department's PW 200 form is provided for that purpose.

Both the PW 16 and PW 200 forms are available for completion online.

Hours

No laborer, worker, or mechanic in the employ of a contractor or subcontractor engaged in the performance of any public work project shall be permitted to work more than eight hours in any day or more than five days in any week, except in cases of extraordinary emergency. The contractor and the Department of Jurisdiction (Contracting Agency) may apply to the Bureau of Public Work for a dispensation permitting workers to work additional hours or days per week on a particular public work project. There are very few exceptions to this rule. Complete information regarding these exceptions is available on the "4 Day / 10 Hour Work Schedule" form (PW 30.1).

Wages and Supplements

The wages and supplements to be paid and/or provided to laborers, workers, and mechanics employed on a public work project shall be not less than those listed in the current Prevailing Rate Schedule for the locality where the work is performed. If a prime contractor on a public work project has not been provided with a Prevailing Rate Schedule, the contractor must notify the Department of Jurisdiction (Contracting Agency) who in turn must request an original Prevailing Rate Schedule form the Bureau of Public Work. Requests may be submitted by: mail to NYSDOL, Bureau of Public Work, State Office Bldg. Campus, Bldg. 12, Rm. 130, Albany, NY 12240; Fax to Bureau of Public Work (518) 485-1870; or electronically at the NYSDOL website www.labor.ny.gov.

Upon receiving the original schedule, the Department of Jurisdiction (Contracting Agency) is REQUIRED to provide complete copies to all prime contractors who in turn MUST, by law, provide copies of all applicable county schedules to each subcontractor and obtain from each subcontractor, an affidavit certifying such schedules were received. If the original schedule expired, the contractor may obtain a copy of the new annual determination from the NYSDOL website www.labor.ny.gov.

The Commissioner of Labor makes an annual determination of the prevailing rates. This determination is in effect from July 1st through June 30th of the following year. The annual determination is available on the NYSDOL website www.labor.ny.gov.

Payrolls and Payroll Records

Contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemporaneous, true, and accurate payroll records. Payrolls must show the following information for each person employed on a public work project: Name, Address, Last 4 Digits of Social Security Number, Classification(s) in which the worker was employed, Hourly wage rate(s) paid, Supplements paid or provided, and Daily and weekly number of hours worked in each classification.

The filing of payrolls to the Department of Jurisdiction is a condition of payment. Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury. The original payrolls or transcripts must be maintained for a period of at least (5) years, by the Department of Jurisdiction (Contracting Agency), from the project's date of completion. The Department of Jurisdiction (Contracting Agency) shall collect, review for facial validity, and maintain such payrolls.

In addition, the Commissioner of Labor may require contractors to furnish, with ten (10) days of a request, payroll records sworn to as their validity and accuracy for public work and private work. Payroll records include, by are not limited to time cards, work description sheets, proof that supplements were provided, cancelled payroll checks and payrolls. Failure to provide the requested information within the allotted ten (10) days will result in the withholding of up to 25% of the contract, not to exceed $100,000.00. If the contractor or subcontractor does not maintain a place of business in New York State and the amount of the contract exceeds $25,000.00, payroll records and certifications must be kept on the project worksite.

The prime contractor is responsible for any underpayments of prevailing wages or supplements by any subcontractor.

All contractors or their subcontractors shall provide to their subcontractors a copy of the Prevailing Rate Schedule specified in the public work contract as well as any subsequently issued schedules. A failure to provide these schedules by a contractor or subcontractor is a violation of Article 8, Section 220-a of the Labor Law.

All subcontractors engaged by a public work project contractor or its subcontractor, upon receipt of the original schedule and any subsequently issued schedules, shall provide to such contractor a verified statement attesting that the subcontractor has received the Prevailing Rate Schedule and will pay or provide the applicable rates of wages and supplements specified therein. (See NYS Labor Laws, Article 8 . Section 220-a).

Determination of Prevailing Wage and Supplement Rate Updates Applicable to All Counties

The wages and supplements contained in the annual determination become effective July 1st whether or not the new determination has been received by a given contractor. Care should be taken to review the rates for obvious errors. Any corrections should be brought to the Department's attention immediately. It is the responsibility of the public work contractor to use the proper rates. If there is a question on the proper classification to be used, please call the district office located nearest the project. Any errors in the annual determination will be corrected and posted to the NYSDOL website on the first business day of each month. Contractors are responsible for paying these updated rates as well, retroactive to July 1st.

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. To the extent possible, the Department posts rates in its possession that cover periods of time beyond the July 1st to June 30th time frame covered by a particular annual determination. Rates that extend beyond that instant time period are informational ONLY and may be updated in future annual determinations that actually cover the then appropriate July 1st to June 30th time period.

Withholding of Payments

When a complaint is filed with the Commissioner of Labor alleging the failure of a contractor or subcontractor to pay or provide the prevailing wages or supplements, or when the Commissioner of Labor believes that unpaid wages or supplements may be due, payments on the public work contract shall be withheld from the prime contractor in a sufficient amount to satisfy the alleged unpaid wages and supplements, including interest and civil penalty, pending a final determination.

When the Bureau of Public Work finds that a contractor or subcontractor on a public work project failed to pay or provide the requisite prevailing wages or supplements, the Bureau is authorized by Sections 220-b and 235.2 of the Labor Law to so notify the financial officer of the Department of Jurisdiction (Contracting Agency) that awarded the public work contract. Such officer MUST then withhold or cause to be withheld from any payment due the prime contractor on account of such contract the amount indicated by the Bureau as sufficient to satisfy the unpaid wages and supplements, including interest and any civil penalty that may be assessed by the Commissioner of Labor. The withholding continues until there is a final determination of the underpayment by the Commissioner of Labor or by the court in the event a legal proceeding is instituted for review of the determination of the Commissioner of Labor.

The Department of Jurisdiction (Contracting Agency) shall comply with this order of the Commissioner of Labor or of the court with respect to the release of the funds so withheld.

Summary of Notice Posting Requirements

The current Prevailing Rate Schedule must be posted in a prominent and accessible place on the site of the public work project. The prevailing wage schedule must be encased in, or constructed of, materials capable of withstanding adverse weather conditions and be titled "PREVAILING RATE OF WAGES" in letters no smaller than two (2) inches by two (2) inches.

The "Public Work Project" notice must be posted at the beginning of the performance of every public work contract, on each job site.

Every employer providing workers. compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers. Compensation Board in a conspicuous place on the jobsite.

Every employer subject to the NYS Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers, notices furnished by the State Division of Human Rights.

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the NYS Department of Labor.

Apprentices

Employees cannot be paid apprentice rates unless they are individually registered in a program registered with the NYS Commissioner of Labor. The allowable ratio of apprentices to journeyworkers in any craft classification can be no greater than the statewide building trade ratios promulgated by the Department of Labor and included with the Prevailing Rate Schedule. An employee listed on a payroll as an apprentice who is not registered as above, must be paid the prevailing journeyworker's wage rate for the classification of work the employee is actually performing.

NYSDOL Labor Law, Article 8, Section 220-3, require that only apprentices individually registered with the NYS Department of Labor may be paid apprenticeship rates on a public work project. No other Federal or State Agency of office registers apprentices in New York State.

Persons wishing to verify the apprentice registration of any person must do so in writing by mail, to the NYSDOL Office of Employability Development / Apprenticeship Training, State Office Bldg. Campus, Bldg. 12, Albany, NY 12240 or by Fax to NYSDOL Apprenticeship Training (518) 457-7154. All requests for verification must include the name and social security number of the person for whom the information is requested.

The only conclusive proof of individual apprentice registration is written verification from the NYSDOL Apprenticeship Training Albany Central office. Neither Federal nor State Apprenticeship Training offices outside of Albany can provide conclusive registration information.

It should be noted that the existence of a registered apprenticeship program is not conclusive proof that any person is registered in that program. Furthermore, the existence or possession of wallet cards, identification cards, or copies of state forms is not conclusive proof of the registration of any person as an apprentice.

Interest and Penalties

In the event that an underpayment of wages and/or supplements is found:

- Interest shall be assessed at the rate then in effect as prescribed by the Superintendent of Banks pursuant to section 14-a of the Banking Law, per annum from the date of underpayment to the date restitution is made.
- A Civil Penalty may also be assessed, not to exceed 25% of the total of wages, supplements, and interest due.

Debarment

Any contractor or subcontractor and/or its successor shall be ineligible to submit a bid on or be awarded any public work contract or subcontract with any state, municipal corporation or public body for a period of five (5) years when:

- Two (2) willful determinations have been rendered against that contractor or subcontractor and/or its successor within any consecutive six (6) year period.
- There is any willful determination that involves the falsification of payroll records or the kickback of wages or supplements.

Criminal Sanctions

Willful violations of the Prevailing Wage Law (Article 8 of the Labor Law) may be a felony punishable by fine or imprisonment of up to 15 years, or both.

Discrimination

No employee or applicant for employment may be discriminated against on account of age, race, creed, color, national origin, sex, disability or marital status.

No contractor, subcontractor nor any person acting on its behalf, shall by reason of race, creed, color, disability, sex or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates (NYS Labor Law, Article 8, Section 220-e(a)).

No contractor, subcontractor, nor any person acting on its behalf, shall in any manner, discriminate against or intimidate any employee on account of race, creed, color, disability, sex, or national origin (NYS Labor Law, Article 8, Section 220-e(b)).

The Human Rights Law also prohibits discrimination in employment because of age, marital status, or religion.

There may be deducted from the amount payable to the contractor under the contract a penalty of $50.00 for each calendar day during which such person was discriminated against or intimidated in violation of the provision of the contract (NYS Labor Law, Article 8, Section 220-e(c)).

The contract may be cancelled or terminated by the State or municipality. All monies due or to become due thereunder may be forfeited for a second or any subsequent violation of the terms or conditions of the anti-discrimination sections of the contract (NYS Labor Law, Article 8, Section 220-e(d)).

Every employer subject to the New York State Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers notices furnished by the State Division of Human Rights.

Workers' Compensation

In accordance with Section 142 of the State Finance Law, the contractor shall maintain coverage during the life of the contract for the benefit of such employees as required by the provisions of the New York State Workers' Compensation Law.

A contractor who is awarded a public work contract must provide proof of workers' compensation coverage prior to being allowed to begin work.

The insurance policy must be issued by a company authorized to provide workers' compensation coverage in New York State. Proof of coverage must be on form C-105.2 (Certificate of Workers' Compensation Insurance) and must name this agency as a certificate holder.

If New York State coverage is added to an existing out-of-state policy, it can only be added to a policy from a company authorized to write workers' compensation coverage in this state. The coverage must be listed under item 3A of the information page.

The contractor must maintain proof that subcontractors doing work covered under this contract secured and maintained a workers' compensation policy for all employees working in New York State.

Every employer providing worker's compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers' Compensation Board in a conspicuous place on the jobsite.

Unemployment Insurance

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the New York State Department of Labor.

Town of Riverhead

Timothy Nordberg, Project Engineer
538 Broadhollow Road
4th Floor East
Melville NY 11747

Schedule Year 2018 through 2019
Date Requested 11/05/2018
PRC# 2018013228

Location Calverton, NY
Project ID# CASD 1602
Project Type Upgrade of Sewage Treatment Plant - Enterprise Park at Calverton - Module No. 1 (0.100 MGD)

Notice of Contract Award

New York State Labor Law, Article 8, Section 220.3a requires that certain information regarding the awarding of public work contracts, be furnished to the Commissioner of Labor. One "Notice of Contract Award" (PW 16, which may be photocopied), **MUST** be completed for **EACH** prime contractor on the above referenced project.

Upon notifying the successful bidder(s) of this contract, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

Contractor Information
All information must be supplied

Federal Employer Identification Number: _____

Name: _____

Address: _____

_____

City: _____ State: _____ Zip: _____

Amount of Contract: $_____

Approximate Starting Date: ____/____/____

Approximate Completion Date: ____/____/____

Contract Type:
[ ] (01) General Construction
[ ] (02) Heating/Ventilation
[ ] (03) Electrical
[ ] (04) Plumbing
[ ] (05) Other : _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

IMPORTANT NOTICE

FOR

CONTRACTORS & CONTRACTING AGENCIES

Social Security Numbers on Certified Payrolls

The Department of Labor is cognizant of the concerns of the potential for misuse or inadvertent disclosure of social security numbers. Identity theft is a growing problem and we are sympathetic to contractors' concerns with regard to inclusion of this information on payrolls if another identifier will suffice.

For these reasons, ***the substitution of the use of the last four digits of the social security number on certified payrolls submitted to contracting agencies on public work projects is now acceptable to the Department of Labor.***

NOTE: This change does not affect the Department's ability to request and receive the entire social security number from employers during the course of its public work / prevailing wage investigations.

To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

Budget Policy & Reporting Manual

B-610

Public Work Enforcement Fund

effective date December 7, 2005

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1. Purpose and Scope:

This Item describes the Public Work Enforcement Fund (the Fund, PWEF) and its relevance to State agencies and public benefit corporations engaged in construction or reconstruction contracts, maintenance and repair, and announces the recently-enacted increase to the percentage of the dollar value of such contracts that must be deposited into the Fund. This item also describes the roles of the following entities with respect to the Fund:

- New York State Department of Labor (DOL),
- The Office of the State of Comptroller (OSC), and
- State agencies and public benefit corporations.

2. Background and Statutory References:

DOL uses the Fund to enforce the State's Labor Law as it relates to contracts for construction or reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law. State agencies and public benefit corporations participating in such contracts are required to make payments to the Fund.

Chapter 511 of the Laws of 1995 (as amended by Chapter 513 of the Laws of 1997, Chapter 655 of the Laws of 1999, Chapter 376 of the Laws of 2003 and Chapter 407 of the Laws of 2005) established the Fund.

3. Procedures and Agency Responsibilities:

The Fund is supported by transfers and deposits based on the value of contracts for construction and reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law, into which all State agencies and public benefit corporations enter.

Chapter 407 of the Laws of 2005 increased the amount required to be provided to this fund to .10 of one-percent of the total cost of each such contract, to be calculated at the time agencies or public benefit corporations enter into a new contract or if a contract is amended. The provisions of this bill became effective August 2, 2005.

To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

OSC will report to DOL on all construction-related ("D") contracts approved during the month, including contract amendments, and then DOL will bill agencies the appropriate assessment monthly. An agency may then make a determination if any of the billed contracts are exempt and so note on the bill submitted back to DOL. For any instance where an agency is unsure if a contract is or is not exempt, they can call the Bureau of Public Work at the number noted below for a determination. Payment by check or journal voucher is due to DOL within thirty days from the date of the billing. DOL will verify the amounts and forward them to OSC for processing.

For those contracts which are not approved or administered by the Comptroller, monthly reports and payments for deposit into the Public Work Enforcement Fund must be provided to the Administrative Finance Bureau at the DOL within 30 days of the end of each month or on a payment schedule mutually agreed upon with DOL.

Reports should contain the following information:

- Name and billing address of State agency or public benefit corporation;
- State agency or public benefit corporation contact and phone number;
- Name and address of contractor receiving the award;
- Contract number and effective dates;
- Contract amount and PWEF assessment charge (if contract amount has been amended, reflect increase or decrease to original contract and the adjustment in the PWEF charge); and
- Brief description of the work to be performed under each contract.

Checks and Journal Vouchers, payable to the "New York State Department of Labor" should be sent to:

Department of Labor
Administrative Finance Bureau-PWEF Unit
Building 12, Room 464
State Office Campus
Albany, NY 12240

Any questions regarding billing should be directed to NYSDOL's Administrative Finance Bureau-PWEF Unit at (518) 457-3624 and any questions regarding Public Work Contracts should be directed to the Bureau of Public Work at (518) 457-5589.

Construction Industry
Fair Play Act

Required Posting For Labor Law
Article 25-B § 861-d

Construction industry employers must post the "Construction Industry Fair Play Act" notice in a prominent and accessible place on the job site.

Failure to post the notice can result in penalties of up to $1,500 for a first offense and up to $5,000 for a second offense.

The posting is included as part of this wage schedule. Additional copies may be obtained from the NYS DOL website, www.labor.ny.gov.

If you have any questions concerning the Fair Play Act, please call the State Labor Department toll-free at 1-866-435-1499 or email us at: dol.misclassified@labor.state.ny.us .

New York State Department of Labor
Required Notice under Article 25-B of the Labor Law

ATTENTION ALL EMPLOYEES, CONTRACTORS AND SUBCONTRACTORS:
YOU ARE COVERED BY THE
CONSTRUCTION INDUSTRY FAIR PLAY ACT

The law says that you are an employee unless:

- You are free from direction and control in performing your job AND
- You perform work that is not part of the usual work done by the business that hired you AND
- You have an independently established business

Your employer cannot consider you to be an independent contractor unless all three of these facts apply to your work.

IT IS AGAINST THE LAW FOR AN EMPLOYER TO MISCLASSIFY EMPLOYEES AS INDEPENDENT CONTRACTORS OR PAY EMPLOYEES OFF-THE-BOOKS.

Employee rights. If you are an employee:

- You are entitled to state and federal worker protections such as
  - unemployment benefits, if unemployed through no fault of your own, able to work, and otherwise qualified
  - workers' compensation benefits for on-the-job injuries
  - payment for wages earned, minimum wage, and overtime (under certain conditions)
  - prevailing wages on public work projects
  - the provisions of the National Labor Relations Act and
  - a safe work environment
- It is a violation of this law for employers to retaliate against anyone who asserts their rights under the law. Retaliation subjects an employer to civil penalties, a private lawsuit or both.

Independent Contractors: If you are an independent contractor*:*

- You must pay all taxes required by New York State and Federal Law.

Penalties for paying off-the-books or improperly treating employees as independent contractors:

- **Civil Penalty** — First Offense: up to $2,500 per employee. Subsequent Offense(s): up to $5,000 per employee.
- **Criminal Penalty** — First Offense: Misdemeanor - up to 30 days in jail, up to a $25,000 fine and debarment from performing Public Work for up to one year. Subsequent Offense(s): Misdemeanor - up to 60 days in jail, up to a $50,000 fine and debarment from performing Public Work for up to 5 years.

If you have questions about your employment status or believe that your employer may have violated your rights and you want to file a complaint, call the Department of Labor at 1(866)435-1499 or send an email to dol.misclassified@labor.state.ny.us. All complaints of fraud and violations are taken seriously and you can remain anonymous.

Employer Name:

IA 999 (09/10)

WORKER NOTIFICATION

(Labor Law §220, paragraph a of subdivision 3-a)

Effective February 24, 2008

This provision is an addition to the existing prevailing wage rate law, Labor Law §220, paragraph a of subdivision 3-a. It requires contractors and subcontractors to provide written notice to all laborers, workers or mechanics of the *prevailing wage rate* for their particular job classification *on each pay stub**. It also requires contractors and subcontractors to *post a notice* at the beginning of the performance of every public work contract *on each job site* that includes the telephone number and address for the Department of Labor and a statement informing laborers, workers or mechanics of their right to contact the Department of Labor if he/she is not receiving the proper prevailing rate of wages and/or supplements for his/her particular job classification. The required notification will be provided with each wage schedule, may be downloaded from our website *www.labor.state.ny.us* or made available upon request by contacting the Bureau of Public Work at 518-457-5589.

* In the event that the required information will not fit on the pay stub, an accompanying sheet or attachment of the information will suffice.

(11.11)

New York State Department of Labor
Bureau of Public Work

Attention Employees

THIS IS A:

PUBLIC WORK PROJECT

If you are employed on this project as a **worker, laborer, or mechanic** you are entitled to receive the **prevailing wage and supplements rate** for the classification at which you are working.

Chapter 629 of the Labor Laws of 2007:

These wages are set by law and must be posted at the work site. They can also be found at: www.labor.ny.gov

If you feel that you have not received proper wages or benefits, please call our nearest office.*

Albany	(518) 457-2744	Patchogue	(631) 687-4882
Binghamton	(607) 721-8005	Rochester	(585) 258-4505
Buffalo	(716) 847-7159	Syracuse	(315) 428-4056
Garden City	(516) 228-3915	Utica	(315) 793-2314
New York City	(212) 932-2419	White Plains	(914) 997-9507
Newburgh	(845) 568-5156		

* For New York City government agency construction projects, please contact the Office of the NYC Comptroller at (212) 669-4443, or www.comptroller.nyc.gov – click on Bureau of Labor Law.

Contractor Name: _____

Project Location: _____

OSHA 10-hour Construction

Safety and Health Course – S1537-A

Effective July 18, 2008

This provision is an addition to the existing prevailing wage rate law, Labor Law §220, section 220-h. It requires that on all public work projects of at least $250,000.00, all laborers, workers and mechanics working on the site, be certified as having successfully completed the OSHA 10-hour construction safety and health course. It further requires that the advertised bids and contracts for every public work contract of at least $250,000.00, contain a provision of this requirement.

NOTE: ***The OSHA 10 Legislation only applies to workers on a public work project that are required, under Article 8, to receive the prevailing wage.***

Where to find OSHA 10-hour Construction Course

1. NYS Department of Labor website for scheduled outreach training at:

   www.labor.state.ny.us/workerprotection/safetyhealth/DOSH_ONSITE_CONSULTATION.shtm

2. OSHA Training Institute Education Centers:

   Rochester Institute of Technology OSHA Education Center
   Rochester, NY
   Donna Winter
   Fax (585) 475-6292
   e-mail: dlwtpo@rit.edu
   (866) 385-7470 Ext. 2919
   www.rit.edu/~outreach/course.php3?CourseID=54

   Atlantic OSHA Training Center
   UMDNJ – School of Public Health
   Piscataway, NJ
   Janet Crooks
   Fax (732) 235-9460
   e-mail: crooksje@umdnj.edu
   (732) 235-9455
   https://ophp.umdnj.edu/wconnect/ShowSchedule.awp?~~GROUP~AOTCON~10~

   Atlantic OSHA Training Center
   University at Buffalo
   Buffalo, New York
   Joe Syracuse
   Fax (716) 829-2806
   e-mail:mailto:japs@buffalo.edu
   (716) 829-2125
   http://www.smbs.buffalo.edu/CENTERS/trc/schedule_OSHA.php

   Keene State College
   Manchester, NH
   Leslie Singleton
   e-mail: lsingletin@keene.edu
   (800) 449-6742
   www.keene.edu/courses/print/courses_osha.cfm

3. List of trainers and training schedules for OSHA outreach training at:

   www.OutreachTrainers.org

Requirements for OSHA 10 Compliance

Chapter 282 of the Laws of 2007, codified as Labor Law 220-h took effect on July 18, 2008. The statute provides as follows:

The advertised specifications for every contract for public work of $250,000.00 or more must contain a provision requiring that every worker employed in the performance of a public work contract shall be certified as having completed an OSHA 10 safety training course. The clear intent of this provision is to require that all employees of public work contractors, required to be paid prevailing rates, receive such training "prior to the performing any work on the project."

The Bureau will enforce the statute as follows:

All contractors and sub contractors must attach a copy of proof of completion of the OSHA 10 course to the first certified payroll submitted to the contracting agency and on each succeeding payroll where any new or additional employee is first listed.

Proof of completion may include but is not limited to:

- Copies of bona fide course completion card (*Note: Completion cards do not have an expiration date*.)
- Training roster, attendance record of other documentation from the certified trainer pending the issuance of the card.
- Other valid proof

**A certification by the employer attesting that all employees have completed such a course is not sufficient proof that the course has been completed.

Any questions regarding this statute may be directed to the New York State Department of Labor, Bureau of Public Work at 518-485-5696.

WICKS Reform 2008

(For all contracts advertised or solicited for bid on or after 7/1/08)

- Raises the threshold for public work projects subject to the Wicks Law requiring separate specifications and bidding for the plumbing, heating and electrical work. The total project's threshold would increase from $50,000 to: $3 million in Bronx, Kings, New York, Queens and Richmond counties; $1.5 million in Nassau, Suffolk and Westchester counties; and $500,000 in all other counties.

- For projects below the monetary threshold, bidders must submit a sealed list naming each subcontractor for the plumbing, HVAC and electrical work and the amount to be paid to each. The list may not be changed unless the public owner finds a legitimate construction need, including a change in specifications or costs or use of a Project Labor Agreement (PLA), and must be open to public inspection.

- Allows the state and local agencies and authorities to waive the Wicks Law and use a PLA if it will provide the best work at the lowest possible price. If a PLA is used, all contractors shall participate in apprentice training programs in the trades of work it employs that have been approved by the Department of Labor (DOL) for not less than three years. They shall also have at least one graduate in the last three years and use affirmative efforts to retain minority apprentices. PLA's would be exempt from Wicks, but deemed to be public work subject to prevailing wage enforcement.

- The Commissioner of Labor shall have the power to enforce separate specification requirements on projects, and may issue stop-bid orders against public owners for non-compliance.

- Other new monetary thresholds, and similar sealed bidding for non-Wicks projects, would apply to certain public authorities including municipal housing authorities, NYC Construction Fund, Yonkers Educational Construction Fund, NYC Municipal Water Finance Authority, Buffalo Municipal Water Finance Authority, Westchester County Health Care Association, Nassau County Health Care Corp., Clifton-Fine Health Care Corp., Erie County Medical Center Corp., NYC Solid Waste Management Facilities, and the Dormitory Authority.

- Reduces from 15 to 7 days the period in which contractors must pay subcontractors.

IMPORTANT INFORMATION

Regarding Use of Form PW30.1
(Previously 30R)

"Employer Registration for Use of 4 Day / 10 Hour Work Schedule"

To use the '4 Day / 10 Hour Work Schedule':

There MUST be a *Dispensation of Hours (PW30)* in place on the project

AND

You MUST register your intent to work 4 / 10 hour days, by completing the PW30.1 Form.

REMEMBER…

The '4 Day / 10 Hour Work Schedule' applies ONLY to Job Classifications and Counties listed on the PW30.1 Form.

Do not write in any additional Classifications or Counties.

(**Please note** : For each Job Classification check the individual wage schedule for specific details regarding their 4/10 hour day posting.)

Instructions for Completing Form PW30.1

(Previously 30R)

"Employer Registration for Use of 4 Day / 10 Hour Work Schedule"

Before completing Form PW30.1 check to be sure …

- There is a *Dispensation of Hours* in place on the project.
- The 4 Day / 10 Hour Work Schedule applies to the Job Classifications you will be using.
- The 4 Day / 10 Hour Work Schedule applies to the County / Counties where the work will take place.

Instructions (Type or Print legibly):

Contractor Information:

- Enter the Legal Name of the business, FEIN, Street Address, City, State, Zip Code; the Company's Phone and Fax numbers; and the Company's email address (if applicable)
- Enter the Name of a Contact Person for the Company along with their Phone and Fax numbers, and the personal email address (if applicable)

Project Information:

- Enter the Prevailing Rate Case number (PRC#) assigned to this project
- Enter the Project Name / Type (i.e. Smithtown CSD – Replacement of HS Roof)
- Enter the Exact Location of Project (i.e. Smithtown HS, 143 County Route #2, Smithtown,NY; Bldgs. 1 & 2)
- If you are a Subcontractor, enter the name of the Prime Contractor for which you work
- On the Checklist of Job Classifications -
  - Go to pages 2 and 3 of the form
  - Place a checkmark in the box to the right of the Job Classification you are choosing
  - Mark all Job Classifications that apply

    ****Do not write in any additional Classifications or Counties.****

Requestor Information:

- Enter the name of the person submitting the registration, their title with the company , and the date the registration is filled out

Return Completed Form:

- **Mail** the completed PW30.1 form to: NYSDOL Bureau of Public Work, SOBC – Bldg.12 – Rm.130, Albany, NY 12240 -***OR -***
- **Fax** the completed PW30.1 form to: NYSDOL Bureau of Public Work at (518)485-1870

Bureau of Public Work Harriman
State Office Campus
Building 12, Room 130
Albany, New York 12240
Phone: (518) 457-5589 | Fax: (518) 485-1870
www.labor.ny.gov

Employer Registration for Use of 4 Day / 10 Hour Work Schedule

Before completing this form, make sure that:

- There is a **Dispensation of Hours** in place on the project.
- The 4 Day / 10 Hour Work Schedule applies to the Job Classifications you will be using.
- The 4 Day / 10 Hour Work Schedule applies to the County / Counties where the work will take place.

Please **type or print** the requested information and then **mail or fax** to the address above.

Contractor Information

Company Name:_____ FEIN: _____

Address: _____

City:_____State: _____ Zip Code: _____

Phone No:_____ Fax No:_____ Email: _____

Contact Person: _____

Phone No:_____Fax No:_____ Email: _____

Project Information

Project PRC#: _____ Project Name/Type: _____

Exact Location
of Project: _____ County: _____

(If you are Subcontractor)
Prime Contractor Name: _____

Job Classification(s) to Work 4/10 Schedule: *(Choose all that apply on Job Classification Checklist - Pages 3-8)*
**** Do not write in any additional Classifications or Counties****

Requestor Information

Name: _____

Title: _____ Date: _____

Please use the list below with the number assigned to each county as a reference to the corresponding numbers listed in the following pages under **Entire Counties** & **Partial Counties**.

1. Albany County
2. Allegany County
3. Bronx County
4. Broome County
5. Cattaraugus County
6. Cayuga County
7. Chautauqua County
8. Chemung County
9. Chenango County
10. Clinton County
11. Columbia County
12. Cortland County
13. Delaware County
14. Dutchess County
15. Erie County
16. Essex County
17. Franklin County
18. Fulton County
19. Genesee County
20. Greene County
21. Hamilton County
22. Herkimer County
23. Jefferson County
24. Kings County (Brooklyn)
25. Lewis County
26. Livingston County
27. Madison County
28. Monroe County
29. Montgomery County
30. Nassau County
31. New York County (Manhattan)
32. Niagara County
33. Oneida County
34. Onondaga County
35. Ontario County
36. Orange County
37. Orleans County
38. Oswego County
39. Otsego County
40. Putnam County
41. Queens County
42. Rensselaer County
43. Richmond County (Staten Island)
44. Rockland County
45. Saint Lawrence County
46. Saratoga County
47. Schenectady County
48. Schoharie County
49. Schuyler County
50. Seneca County
51. Steuben County
52. Suffolk County
53. Sullivan County
54. Tioga County
55. Tompkins County
56. Ulster County
57. Warren County
58. Washington County
59. Wayne County
60. Westchester County
61. Wyoming County
62. Yates County

Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

**** Do not write in any additional Classifications or Counties****

Job Classification	Tag #	Entire Counties	Partial Counties	Check Box
Carpenter – Building	276B-All	7	2 ,5	
Carpenter – Building	276B-Cat	15	5	
Carpenter – Building	276-B-LIV	26, 28, 35, 59	61	
Carpenter – Building	276B-Gen	19, 32, 37	61	
Carpenter – Heavy & Highway	276HH-All	2, 5, 7		
Carpenter – Heavy & Highway	276HH-Erie	15		
Carpenter – Heavy & Highway	276HH- Gen	19, 32, 37, 61		
Carpenter – Heavy & Highway	276HH-Liv	26, 28, 35, 59		
Carpenter – Residential	276R-All	7	2, 5	
Carpenter – Building	277B-Bro	4, 54		
Carpenter – Building	277B-CAY	6, 50, 62		
Carpenter – Building	277B-CS	8, 12, 49, 51, 55	2	
Carpenter – Building	277 JLS	23, 25, 45		
Carpenter – Building	277 omh	22, 27, 33		
Carpenter – Building	277 On	34		
Carpenter – Building	277 Os	38		
Carpenter – Building	277CDO Bldg	9, 13, 39		
Carpenter – Heavy & Highway	277CDO HH	9, 13, 39		
Carpenter – Heavy & Highway	277HH-BRO	4, 6, 8, 12, ,22, 23, 25, 27, 33, 34, 38, 45, 49, 50, 51, 54, 55, 62		
Carpenter – Building	291B-Alb	1, 18, 20, 29, 42, 47, 48		
Carpenter – Building	291B-Cli	10, 16, 17		
Carpenter – Building	291B-Ham	21, 57, 58		
Carpenter – Building	291B-Sar	46		
Carpenter – Heavy & Highway	291HH-Alb	1, 10, 16, 17,18, 20, 21, 29, 42, 46, 47, 48, 57, 58		
Electrician	25m	30, 52		
Electrician – Teledata Cable Splicer	43	12, 22, 27, 33, 38	6, 9, 34, 39, 55, 59	

Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

**** Do not write in any additional Classifications or Counties****

Job Classification	Tag #	Entire Counties	Partial Counties	Check Box
Electrician	86	26, 28	19, 35, 37, 59, 61	
Electrician	840 Teledata and 840 Z1	62	6, 34, 35, 50, 59	
Electrician	910	10, 16, 17, 23, 25, 45		
Electrical Lineman	1049Line/Gas	30, 41, 52		
Electrical Lineman	1249a	1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 32, 33, 34, 35, 36, 37, 38, 39, 40, 42, 44, 46, 47, 48, 49, 50, 45, 51, 53, 54, 55, 56, 57, 58, 59, 61, 62		
Electrical Lineman	1249a West	60		
Electrical Lineman	1249a-LT	1, 2, 4, 5, 6, 7, 8, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 32, 33, 34, 35, 37, 38, 39, 42, 46, 47, 48, 49, 50, 45, 51, 53, 54, 55, 57, 58, 59, 61, 62		
Electrical Lineman	1249aREG8LT	11, 14, 36, 40, 44, 56		
Electrical Lineman	1249aWestLT	60		
Elevator Constructor	138	11, 14, 20, 36, 40, 53, 56	13, 44, 60	
Elevator Constructor	14	2, 5, 7, 15, 19, 32, 37, 61		
Elevator Constructor	27	8, 26, 28, 35, 49, 50, 51, 59, 62		
Elevator Constructor	35	1, 10, 16, 18, 21, 22, 29, 39, 42, 46, 47, 48, 57, 58		
Elevator Constructor	62.1	4, 6, 9, 12, 23, 25, 27, 33, 34, 38, 45, 54, 55	13	
Glazier	201	1, 10, 11, 16, 17, 18, 20, 21, 29, 42, 46, 47, 48, 57, 58		
Glazier	660r	2, 5, 7, 15, 19, 32, 37, 61		
Glazier	660	2, 5, 7, 15, 19, 32, 37, 61		
Glazier	677.1	23, 25, 26, 28, 35, 45, 50, 59, 62		
Glazier	677Z-2	6, 12, 22, 27, 33, 34, 38		
Glazier	677z3	4, 8, 9, 13, 39, 49, 51, 54, 55		
Glazier	677r.2	6, 12, 22, 27, 33, 34, 38		
Insulator – Heat & Frost	30-Syracuse	4, 6, 8, 9, 12, 22, 23, 25, 27, 33, 34, 38, 39, 49, 50, 45, 54, 55		
Laborer – Building	621b	2, 7	5	
Laborer – Building	633 bON	34		

Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

**** Do not write in any additional Classifications or Counties****

Job Classification	Tag #	Entire Counties	Partial Counties	Check Box
Laborer – Building	633b Cay	6		
Laborer – Building	633bOS	38		
Laborer – Building	785(7)	4	9, 13, 54	
Laborer – Building	785B-CS	8, 51	49	
Laborer – Building	7-785b	12, 55	49, 54	
Laborers – Heavy & Highway	157h/h	47	18, 29, 46	
Laborers – Heavy & Highway	190 h/h	1, 42, 58	11, 20, 46	
Laborers – Heavy & Highway	35/2h	21, 22, 27, 33	18, 29	
Laborer – Residential	621r	2, 7	5	
Laborers – Tunnel	157	47	18, 29, 46	
Laborers – Tunnel	35T	21, 22, 27, 33	18, 29	
Laborers – Tunnel	190	1, 42, 58	11, 20, 46	
Mason – Building	2TS.1	1, 10,11, 16, 17, 18, 20, 21, 29, 42, 46, 47, 48, 57, 58		
Mason – Building	2TS.2	22, 23, 25, 33, 45	27	
Mason – Building	2TS.3	6, 34, 38	27	
Mason – Building	2b-on	34		
Mason – Building	2b.1	1, 11, 18, 20, 21, 29, 42, 46, 47, 48, 58	57	
Mason – Building	2b.2	22, 33	25	
Mason – Building	2b.3	6, 34	27	
Mason – Building	2b.4	38		
Mason – Building	2b.5	23	25	
Mason – Building	2b.6	45		
Mason – Building	2b.8	10, 16, 17	57	
Mason – Building	3b-Co-Z2	8, 49, 51	2	
Mason – Building	3B-Z1	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Building – Residential	3B-Z1R	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Building	3B-Bing-Z2	4, 9, 13, 39, 54		
Mason – Building	3B-Ith-Z2	12, 55		

Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

**** Do not write in any additional Classifications or Counties****

Job Classification	Tag #	Entire Counties	Partial Counties	Check Box
Mason – Building	3B-Jam-Z2	7	2, 5	
Mason – Building – Residential	3B-Jam-Z2R	2, 4, 8, 7, 9, 12, 39, 13, 49, 51, 54, 55	5	
Mason – Building	3B-Z3	15, 32	5	
Mason – Building	3B-Z3.Orleans	37		
Mason – Residential	3B-Z3R	15, 32	5	
Mason – Residential	3B-z3R.Orleans	37		
Mason - Heavy & Highway	3h	2, 4, 8, 7, 9, 12, 13, 19, 26, 28, 35, 37, 39, 49, 50, 51, 54, 55, 59, 61, 62	5, 15, 32	
Mason – Tile Finisher	3TF-Z1	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Tile Finisher	3TF-Z2	2, 4, 8, 7, 9, 12, 13, 39, 49, 51, 54, 55	5	
Mason – Tile Finisher	3TF-Z3	15, 32, 37	5	
Mason – Tile Finisher	3TF-Z1R	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Tile Finisher	3TF-Z2R	2, 4, 7, 9, 12, 13, 39, 49, 51, 54, 55	5	
Mason – Tile Finisher	3TF-Z3R	15, 32, 37	5	
Mason – Tile Setter	3TS-Z1	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Tile Setter Residential	3TS-Z1R	19, 26, 28, 35, 50, 59, 61, 62		
Mason – Tile Setter	3TS-Z2	2, 4, 7, 8, 9, 12, 13, 39, 49, 51, 54, 55	5	
Mason – Tile Setter Residential	3TS-Z2R	2, 4, 7, 8, 9, 12, 13, 39, 49, 51, 54, 55	5	
Mason – Tile Setter	3TS-Z3	15, 32, 37	5	
Mason – Tile Setter Residential	3TS-Z3R	15, 32, 37	5	
Mason – Building/Heavy & Highway	780	3, 24, 30, 31, 41, 43, 52		
Operating Engineer - Heavy & Highway	137H/H	40, 60	14	
Operating Engineer – Heavy & Highway	158-832H	2, 8, 26, 28, 35, 49, 51, 59, 62	19	
Operating Engineer – Heavy & Highway	158-H/H	1, 4, 9, 10, 11, 14, 16, 17, 18, 20, 21, 22, 29, 39, 42, 46, 47, 48, 54, 57, 58		
Operating Engineer – Heavy & Highway	158-545h	6, 12, 23, 25, 27, 33, 38, 45, 50, 55		
Painter	1456-LS	1, 3, 10, 11, 14, 16, 17, 18, 20, 21, 24, 29, 30, 31, 36, 40, 41, 42, 43, 44, 46, 47, 48, 52, 53, 56, 57, 58, 60		
Painter	150	28, 59, 62	26, 35	

Job Classification Checklist

(Place a checkmark by all classifications that will be using the 4/10 schedule)

**** Do not write in any additional Classifications or Counties****

Job Classification	Tag #	Entire Counties	Partial Counties	Check Box
Painter	178 B	4, 9, 54		
Painter	178 E	8, 49	51	
Painter	178 I	12, 55		
Painter	178 O	13, 39		
Painter	31	6, 22, 27, 33, 34, 50	25, 35, 38	
Painter	38.O		38	
Painter	38.W	23, 45	25	
Painter	4-Buf,Nia,Olean	2, 15, 19, 32, 37, 61	5, 7, 26, 51	
Painter	4-Jamestown		5, 7	
Sheetmetal Worker	46	26, 28, 35, 50, 59, 62		
Sheetmetal Worker	46r	26, 28, 35, 50, 59, 62		
Teamsters – Heavy & Highway	294h/h	1, 11, 18, 20, 29, 42, 46, 47, 48, 58	57	
Teamsters – Heavy & Highway	317bhh	6, 12, 50, 51, 55, 62	2	
Teamsters - Building/Heavy & Highway	456	40, 60		

Introduction to the Prevailing Rate Schedule

Information About Prevailing Rate Schedule

This information is provided to assist you in the interpretation of particular requirements for each classification of worker contained in the attached Schedule of Prevailing Rates.

Classification

It is the duty of the Commissioner of Labor to make the proper classification of workers taking into account whether the work is heavy and highway, building, sewer and water, tunnel work, or residential, and to make a determination of wages and supplements to be paid or provided. It is the responsibility of the public work contractor to use the proper rate. If there is a question on the proper classification to be used, please call the district office located nearest the project. District office locations and phone numbers are listed below.

Prevailing Wage Schedules are issued separately for "General Construction Projects" and "Residential Construction Projects" on a county-by-county basis.

General Construction Rates apply to projects such as: Buildings, Heavy & Highway, and Tunnel and Water & Sewer rates.

Residential Construction Rates generally apply to construction, reconstruction, repair, alteration, or demolition of one family, two family, row housing, or rental type units intended for residential use.

Some rates listed in the Residential Construction Rate Schedule have a very limited applicability listed along with the rate. Rates for occupations or locations not shown on the residential schedule must be obtained from the General Construction Rate Schedule. Please contact the local Bureau of Public Work office before using Residential Rate Schedules, to ensure that the project meets the required criteria.

Payrolls and Payroll Records

Contractors and subcontractors are required to establish, maintain, and preserve for not less that six (6) years, contemporaneous, true, and accurate payroll records.

Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury.

Paid Holidays

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

Overtime

At a minimum, all work performed on a public work project in excess of eight hours in any one day or more than five days in any workweek is overtime. However, the specific overtime requirements for each trade or occupation on a public work project may differ. Specific overtime requirements for each trade or occupation are contained in the prevailing rate schedules.

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays.

The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Supplemental Benefits

Particular attention should be given to the supplemental benefit requirements. Although in most cases the payment or provision of supplements is straight time for all hours worked, some classifications require the payment or provision of supplements, or a portion of the supplements, to be paid or provided at a premium rate for premium hours worked. Supplements may also be required to be paid or provided on paid holidays, regardless of whether the day is worked. The Overtime Codes and Notes listed on the particular wage classification will indicate these conditions as required.

Effective Dates

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. The rate listed is valid until the next effective rate change or until the new annual determination which takes effect on July 1 of each year. All contractors and subcontractors are required to pay the current prevailing rates of wages and supplements. If you have any questions please contact the Bureau of Public Work or visit the New York State Department of Labor website (www.labor.state.ny.us) for current wage rate information.

Apprentice Training Ratios

The following are the allowable ratios of registered Apprentices to Journey-workers.

For example, the ratio 1:1,1:3 indicates the allowable initial ratio is one Apprentice to one Journeyworker. The Journeyworker must be in place on the project before an Apprentice is allowed. Then three additional Journeyworkers are needed before a second Apprentice is allowed. The last ratio repeats indefinitely. Therefore, three more Journeyworkers must be present before a third Apprentice can be hired, and so on.

Please call Apprentice Training Central Office at (518) 457-6820 if you have any questions.

Title (Trade)	Ratio
Boilermaker (Construction)	1:1,1:4
Boilermaker (Shop)	1:1,1:3
Carpenter (Bldg.,H&H, Pile Driver/Dockbuilder)	1:1,1:4
Carpenter (Residential)	1:1,1:3
Electrical (Outside) Lineman	1:1,1:2
Electrician (Inside)	1:1,1:3
Elevator/Escalator Construction & Modernizer	1:1,1:2
Glazier	1:1,1:3
Insulation & Asbestos Worker	1:1,1:3
Iron Worker	1:1,1:4
Laborer	1:1,1:3
Mason	1:1,1:4
Millwright	1:1,1:4
Op Engineer	1:1,1:5
Painter	1:1,1:3
Plumber & Steamfitter	1:1,1:3
Roofer	1:1,1:2
Sheet Metal Worker	1:1,1:3
Sprinkler Fitter	1:1,1:2

If you have any questions concerning the attached schedule or would like additional information, please contact the nearest BUREAU of PUBLIC WORK District Office or write to:

New York State Department of Labor
Bureau of Public Work
State Office Campus, Bldg. 12
Albany, NY 12240

District Office Locations:	Telephone #	FAX #
Bureau of Public Work - Albany	518-457-2744	518-485-0240
Bureau of Public Work - Binghamton	607-721-8005	607-721-8004
Bureau of Public Work - Buffalo	716-847-7159	716-847-7650
Bureau of Public Work - Garden City	516-228-3915	516-794-3518
Bureau of Public Work - Newburgh	845-568-5287	845-568-5332
Bureau of Public Work - New York City	212-932-2419	212-775-3579
Bureau of Public Work - Patchogue	631-687-4882	631-687-4902
Bureau of Public Work - Rochester	585-258-4505	585-258-4708
Bureau of Public Work - Syracuse	315-428-4056	315-428-4671
Bureau of Public Work - Utica	315-793-2314	315-793-2514
Bureau of Public Work - White Plains	914-997-9507	914-997-9523
Bureau of Public Work - Central Office	518-457-5589	518-485-1870

Suffolk County General Construction

Asbestos Worker — 11/01/2018

JOB DESCRIPTION Asbestos Worker **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES

Per Hour:	07/01/2018
Abestos Worker Removal & Abatement Only*	$ 44.00

NOTE: *On Mechanical Systems that are NOT to be SCRAPPED.

SUPPLEMENTAL BENEFITS

Per Hour:	
Abestos Worker Removal & Abatement Only	$ 8.70

OVERTIME PAY
See (B, B2, *E, J) on OVERTIME PAGE
Hours worked on Saturdays are paid at time and one half only if forty hours have been worked during the week.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8) on HOLIDAY PAGE

REGISTERED APPRENTICES
Apprentice Removal & Abatement Only:
1000 hour terms at the following percentage of Journeyman's rates.

1st	2nd	3rd	4th
78%	80%	83%	89%

SUPPLEMENTAL BENEFIT

Per Hour:	
Apprentice Removal & Abatement	$ 8.70

4-12a - Removal Only

Boilermaker — 11/01/2018

JOB DESCRIPTION Boilermaker **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES

Per Hour:	07/01/2018	01/01/2019
Boilermaker	$ 57.17	$ 59.17
Repairs & Renovations	$ 57.17	$ 59.17

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2018	01/01/2019
Boilermaker Repair $ Renovations	32% of hourly Wage Paid + $ 25.32	32% of hourly Wage Paid + $ 25.35

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay.

Repairs & Renovation Includes replacement of parts and repairs & renovation of existing unit.

OVERTIME PAY
See (D, O) on OVERTIME PAGE
Repairs & Renovation see (B,E,Q)

HOLIDAY

Paid: See (8, 16, 23, 24) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 12, 15, 16, 22, 23, 24, 25) on HOLIDAY PAGE
NOTE: *Employee must work in pay week to receive Holiday Pay.
**Employee gets 4 times the hourly wage rate for working Labor Day.

REGISTERED APPRENTICES
Wage per hour:
(1/2) Year Terms at the following pecentage of Boilermaker's Wage

1st	2nd	3rd	4th	5th	6th	7th
65%	70%	75%	80%	85%	90%	95%

Supplemental Benefits Per Hour:

Apprentice(s)	07/01/2018 32% of Hourly Wage Paid Plus Amount Below	01/01/2019 32% of Hourly Wage Paid Plus Amount Below
1st Term	$ 19.37	$ 19.38
2nd Term	20.22	20.24
3rd Term	21.06	21.08
4th Term	21.92	21.94
5th Term	22.77	22.79
6th Term	23.62	23.65
7th Term	24.46	24.49

NOTE: "Hourly Wage Paid" shall include any and all premium(s)

4-5

Carpenter **11/01/2018**

JOB DESCRIPTION Carpenter **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES
Per hour: 07/01/2018

Piledriver	$ 53.63
Dockbuilder	$ 53.63

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 50.62

OVERTIME PAY
See (B, E2, O) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE.

Paid: for 1st & 2nd yr.
Apprentices See (5,6,11,13,25)

Overtime: See (5,6,11,13,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES
Wages per hour
(1)year terms:

1st	2nd	3rd	4th
$21.45	$26.82	$34.86	$42.90

Supplemental benefits per hour:

All Terms: $ 33.49

8-1556 Db

Carpenter **11/01/2018**

JOB DESCRIPTION Carpenter **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES
Per hour: 07/01/2018

Carpet/Resilient
Floor Coverer $ 50.50

INCLUDES HANDLING & INSTALLATION OF ARTIFICIAL TURF AND SIMILAR TURF INDOORS/OUTDOORS.

SUPPLEMENTAL BENEFITS
Per hour:
$ 45.85

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (18, 19) on HOLIDAY PAGE.

Paid for 1st & 2nd yr.
Apprentices See (5,6,11,13,16,18,19,25)
Overtime: See (5,6,11,13,16,18,19,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES
Wage per hour - (1) year terms:

1st	2nd	3rd	4th
$20.20	$25.25	$32.83	$40.40

Supplemental benefits per hour - all apprentice terms:

$ 31.11

8-2287

Carpenter **11/01/2018**

JOB DESCRIPTION Carpenter **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES
Per Hour: 07/01/2018

Marine Construction:

Marine Diver $ 67.94
Marine Tender 48.24

SUPPLEMENTAL BENEFITS
Per Hour:

Journeyman $ 50.62

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (18, 19) on HOLIDAY PAGE
Overtime: See (5, 6, 10, 11, 13, 16, 18, 19) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:
One (1) year terms.

1st year $ 21.45
2nd year 26.82
3rd year 34.86
4th year 42.90

Supplemental Benefits
Per Hour:

All terms $ 33.49

8-1456MC

Carpenter **11/01/2018**

JOB DESCRIPTION Carpenter **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES
Per hour: 07/01/2018

Building
Millwright $ 52.70

SUPPLEMENTAL BENEFITS
Per hour:

Millwright $ 53.16

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (18,19) on HOLIDAY PAGE.

Overtime See (5,6,8,11,13,18,19,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES
Wages per hour:

One (1) year terms:

1st.	2nd.	3rd.	4th.
$28.33	$33.48	$38.63	$48.93

Supplemental benefits per hour:

One (1) year terms:

1st.	2nd.	3rd.	4th.
$34.23	$37.83	$42.08	$48.64

8-740.1

Carpenter **11/01/2018**

JOB DESCRIPTION Carpenter **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES
Per Hour:
07/01/2018

Timberman $ 49.10

SUPPLEMENTAL BENEFITS
Per Hour:
07/01/2018

$ 49.92

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE.

Paid: for 1st & 2nd yr.
Apprentices See (5,6,11,13,25)

Overtime: See (5,6,11,13,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES
Wages per hour:
One (1) year terms:

1st	2nd	3rd	4th
$19.64	$24.55	$31.92	$39.28

Supplemental benefits per hour:
All terms $ 33.14

8-1556 Tm

Carpenter 11/01/2018

JOB DESCRIPTION Carpenter **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Westchester

PARTIAL COUNTIES
Orange: South of but including the following, Waterloo Mills, Slate Hill, New Hampton, Goshen, Blooming Grove, Mountainville, east to the Hudson River.
Putnam: South of but including the following, Cold Spring, TompkinsCorner, Mahopac, Croton Falls, east to Connecticut border.
Suffolk: West of Port Jefferson and Patchogue Road to Route 112 to the Atlantic Ocean.

WAGES
Per hour: 07/01/2018

Core Drilling:
Driller $ 39.69

Driller Helper 31.62

Note: Hazardous Waste Pay Differential:
For Level C, an additional 10% above wage rate per hour
For Level B, an additional 10% above wage rate per hour
For Level A, an additional 10% above wage rate per hour
Note: When required to work on water: an additional $ 0.50 per hour.

SUPPLEMENTAL BENEFITS
Per hour: 07/01/2018

Driller and Helper $ 25.45

OVERTIME PAY
OVERTIME: See (B,E,K*,P,R**) on OVERTIME PAGE.

HOLIDAY
Paid: See (5,6) on HOLIDAY PAGE.
Overtime: * See (5,6) on HOLIDAY PAGE.
** See (8,10,11,13) on HOLIDAY PAGE.

8-1536-CoreDriller

Carpenter - Building / Heavy&Highway 11/01/2018

JOB DESCRIPTION Carpenter - Building / Heavy&Highway **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES
Per Hour: 07/01/2018
Carpenter
(Building) $ 49.38
Carpenter
(Heavy Highway) $ 49.38

"NOTE" ADD 15% to straight time hourly wage for NEW YORK STATE D.O.T. and other GOVERMENTAL MANDATED Off-Shift Work.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday, with one-half (1/2) hour allowed for a lunch period.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per Hour:

Both Carpenter Categories	$ 32.11

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
One(1) Year Terms at the following:
Per Hour:

1st	2nd	3rd	4th
$ 23.73	$ 27.86	$ 29.93	$ 34.06

Supplemental Benefits
Per Hour:

All Terms: $ 18.10

4-Reg.Council Nass/Suff

Electrician — 11/01/2018

JOB DESCRIPTION Electrician **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES

Per Hour:	07/01/2018	04/27/2019
Telephone and Intergrated Tele-Data System Electrician	$ 37.48	$ 37.83

This rate classification applies to ALL Voice, Data & Video work.: Excluding Fire Alarm Systems and Energy Managment Systems (HVAC Controls), in those cases the regular Electrician rate applies. To ensure proper use of this rate please call Nassau Offices at (516)228-3912 or Suffolk Offices at (631)687-4882.

SUPPLEMENTAL BENEFITS
Per Hour:

Tele-Data Electrican	16% of Hourly Wage Paid + $18.49	16% of Hourly Wage Paid + $19.01

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16, 25) on HOLIDAY PAGE

4-25tela

Electrician — 11/01/2018

JOB DESCRIPTION Electrician **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES

Per Hour:	07/01/2018	03/30/2019
Electrician Electrical Maintenance	$ 43.20	$ 43.70
Traffic Signal	$ 44.10	$ 44.60

"PLEASE NOTE"
Applicable to "EXISTING ELECTRICAL SYSTEMS" including, but not limited to TRAFFIC SIGNALS & STREET LIGHTING. Not used for addons.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday, with one-half (1/2) hour allowed for a lunch period.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per Hour:

Electrician	12% of Hourly Wage Paid + $17.61	12% of Hourly Wage Paid + $18.37

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay

OVERTIME PAY
See (B, E2, K, P) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
One(1) Year Term(s) at the following Percentage of Journeyman(s) Wage:

1st	2nd	3rd	4th	5th	6th
40%	50%	60%	70%	80%	90%

Supplemental Benefits:

	07/01/2018	03/30/2019
1st	3% + $3.50	3% + $3.50
2nd	8% + $4.04	8% + $4.04
3rd	9% + $5.05	9% + $5.05
4th	10% + $ 6.81	10% + $ 6.81
5th	11% + $10.76	11% + $10.76
6th	12% + $13.86	12% + $13.86

NOTE: Percentages are on "Hourly Wage Paid"
NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay

4-25m

Electrician **11/01/2018**

JOB DESCRIPTION Electrician **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES

Per Hour:	07/01/2018
Electrician Pump & Tank	$ 41.65

SUPPLEMENTAL BENEFITS
Per Hour:

Electrician Pump & Tank	65.25%

of *Wage
Paid

*Wage Paid includes any and all Premiums

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
1 Year Terms at the Following:

Per Hour:

1st Term	$ 12.50
2nd Term	$ 14.58
3rd Term	$ 16.66
4th Term	$ 18.74
5th Term	$ 24.99
6th Term	$ 29.16

SUPPLEMENTAL BENEFITS

Per Hour:

All Terms	65.25% of *Wage Paid

*Wage Paid includes any and all Premiums

4-25 Pump & Tank

Electrician — 11/01/2018

JOB DESCRIPTION Electrician **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES

Per Hour:	07/01/2018	10/27/2018
Electrician/Wireman	$ 51.75	$ 52.00
HVAC Controls	51.75	52.00
Fire Alarms	51.75	52.00

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2018	10/27/2018
Electrcian/Wireman (all catagories)	16% of Hourly Wage Paid + $25.26	16% of Hourly Wage Paid + $25.83

NOTE: "Hourly Wage Paid" shall include any and all premium[s]

OVERTIME PAY
See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
One(1) Year Terms at the following Percetage of Journeyman(s) Wage:

1st	2nd	3rd	4th	5th	6th
35%	35%	40%	45%	60%	75%

Supplemental Benefits Per Hour:

07/01/2018	10/27/2018

1st	3% + $2.71	3% + $2.71
2nd	8% + $4.68	8% + $4.68
3rd	9% + $5.85	9% + $5.85
4th	10% + $7.99	10% + $7.99
5th	13% + $10.82	13% + $10.82
6th	14% + $17.08	14% + $17.08

NOTE: Percentages are on "Hourly Wage Paid"
NOTE: "Hourly Wage Paid" shall include any and all premium(s).

4-25

Electrician — 11/01/2018

JOB DESCRIPTION Electrician **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES

Per Hour:	07/01/2018
Tree Trimmer/Remover Line Clearance Specialist	$ 32.72
Groundman*	$19.63

These rates apply to all tree trimming/removal contracts including but not limited to "Electrical Line Clearance"/"Long Island Railroad Right of Ways".

All tree removal for heavy highway or building construction contracts MUST use Heavy Highway Laborer and Operating Engineer classifications.

* Note: Groundman is not to exceed 20% of the total company workforce

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2018
Tree Trimmer/Remover Line Clearance Specialist and Groundman	19.75% of Hourly Wage Paid + $9.82

NOTE: "Hourly Wage Paid" shall include any and all premium(s) paid

OVERTIME PAY
See (B, E, P, S) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 8, 16, 23, 24, 25, 26) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 16, 23, 24, 25, 26) on HOLIDAY PAGE

4-1049/Tree

Electrician Lineman — 11/01/2018

JOB DESCRIPTION Electrician Lineman **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Queens, Suffolk

WAGES
For Utility Distribution & Transmission Line Construction:

Per Hour:	07/01/2018	04/01/2019
Lineman/Splicer	$ 55.60	$ 57.41
Material Man	48.37	49.95
Heavy Equip. Operator	44.48	45.93
Groundman	33.36	34.45
Flagman	25.02	25.83

For Natural Gasline Construction:

Per Hour:	07/01/2018	06/01/2019
Journeyman U.G.Mech.	$ 46.99	$48.52

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday.

NOTE - In order to use the '4 Day/10 Hour Work schedule', as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS
Per Hour:
Utility Distribution & Transmission Line Construction:

	07/01/2018	04/01/2019
All Classifications	32% of Hourly Wage Paid + $ 12.43	32% of Hourly Wage Paid + $ 13.09

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay

Natural Gasline Construction:

Per Hour:	07/01/2018	06/01/2019
Journeyman U.G.Mech.	26.0% of Hourly Wage Paid + $12.62	27% of Hourly Wage Paid + $13.28

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE
OVERTIME for Natural Gas Mechanic:(B,G,P)

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 16, 23, 25, 26) on HOLIDAY PAGE
Same as Above for Natural Gas Mechanic.

REGISTERED APPRENTICES
1000 hour Terms at the following Percentage of Journeyman's Wage.
(Lineman Only)

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFIT:	07/01/2018	04/01/2019
All Terms	31% of Hourly Wage Paid + $12.43	31% of Hourly Wage Paid + $13.09

4-1049 Line/Gas

Elevator Constructor — 11/01/2018

JOB DESCRIPTION Elevator Constructor **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

PARTIAL COUNTIES
Rockland: Entire County except for the Township of Stony Point
Westchester: Entire County except for the Townships of Bedford, Lewisboro, Cortland, Mt. Kisco, North Salem, Pound Ridge, Somers and Yorktown.

WAGES
Per hour:

	07/01/2018
Elevator Constructor	$ 64.48
Modernization & Service/Repair	50.49

SUPPLEMENTAL BENEFITS
Per Hour:

Elevator Constructor	$ 39.922
Modernization & Service/Repair	38.966

OVERTIME PAY
Constructor. See (D, M, T) on OVERTIME PAGE.

Modern./Service See (B, F, S) on OVERTIME PAGE.

HOLIDAY
Paid: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
WAGES PER HOUR:
*Note:1st Term is based on Average wage of Constructor & Modernization.
Terms 2 thru 4 Based on Journeyman's wage of classification Working in.

1 YEAR TERMS:

1st Term*	2nd Term	3rd Term	4th Term
50%	55%	65%	75%

SUPPLEMENTAL BENEFITS

Elevator Constructor	
1st Term	$ 32.04
2nd Term	32.80
3rd Term	34.038
4th Term	35.277
Modernization & Service/Repair	
1st Term	$ 31.965
2nd Term	32.406
3rd Term	33.578
4th Term	34.745

Glazier — 11/01/2018

JOB DESCRIPTION Glazier **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES

Per hour:	07/01/2018	11/01/2018
Glazier	$ 54.75	+ additional
*Scaffolding	55.75	$ 1.25
Glass Tinting & Window Film	28.16	
**Repair & Maintenance	28.16	

*Scaffolding includes swing scaffold, mechanical equipment, scissor jacks, man lifts, booms & buckets 24' or more, but not pipe scaffolding.

**Repair & Maintenance- All repair & maintenance work on a particular building,whenever performed, where the total cumulative contract value is under $100,000. All Glass tinting, window film, regardless of material or intended use, and all affixing of decals to windows or glass.

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 32.39
Glass tinting & Window Film	18.64
Repair & Maintenance	18.64

OVERTIME PAY
See (C*,D* E2, O) on OVERTIME PAGE. (Premium is applied to the respective base wage only.)

* If an optional 8th hour is required to complete the entire project, the same shall be paid at the regular rate of pay. If a 9th hour is worked, then both hours or more (8th & 9th or more) will be paid at double time rate of pay.

For 'Repair & Maintenance' see (B, B2, F, P) on overtime page.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (4, 6, 16, 25) on HOLIDAY PAGE
For 'Repair & Maintenance' see (5, 6, 16, 25)

REGISTERED APPRENTICES
Wage per hour:
(1) year terms at the following wage rates:

	07/01/2018	11/01/2018 TBD
1st term	$ 18.54	
2nd term	26.84	
3rd term	32.45	
4th term	43.57	

Supplemental Benefits:
(Per hour)

1st term	$ 15.76
2nd term	21.61
3rd term	23.81
4th term	27.96

8-1281 (DC9 NYC)

Insulator - Heat & Frost — 11/01/2018

JOB DESCRIPTION Insulator - Heat & Frost **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES
Per Hour:

	07/01/2018	01/01/2019
Insulators Heat & Frost	$ 67.11	Additional $1.25 to be allocated

SUPPLEMENTAL BENEFITS
Per Hour:

Insulators Heat & Frost	$ 33.56

OVERTIME PAY
See (*C, **O, V) on OVERTIME PAGE
* 8th Hour paid at time and one half
** Triple time for Labor Day (If worked)

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages:
1 year terms Per Hour:
Hired prior to 08/21/2017

1st	2nd	3rd	4th
$26.84	$33.55	$40.27	$50.33

Hired after 8/21/2017

$23.49	$30.20	$36.91	$43.62

Supplemental Benefits:
Hired prior to 08/21/2017

$13.42	$16.78	$20.14	$25.17

Hired after 08/21/2017

	$11.75	$15.10	$18.45	$21.81

4-12

Ironworker — 11/01/2018

JOB DESCRIPTION Ironworker **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

PARTIAL COUNTIES
Rockland: Southern section - south of Convent Road and east of Blue Hills Road.

WAGES

Per hour:	07/01/2018	07/01/2019
Reinforcing & Metal Lathing	$ 56.28	$ 2.00/Hr. to be Allocated
"Basic" Wage	$ 54.65**	

**Overtime to be calculated on "Basic" wage

SUPPLEMENTAL BENEFITS
Per hour:

Reinforcing & Metal Lathing	$ 35.30

OVERTIME PAY
See (B, E, Q, *X) on OVERTIME PAGE
*Only $22.00 per Hour for non worked hours

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 13, 18, 19, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1) year terms at the following wage rates:
Wages Per Hour:

1st term	2nd term	3rd term	4th Term
$ 26.38	$ 30.38	$ 35.38	$ 37.38

SUPPLEMENTAL BENIFITS
Per Hour:

1st term	2nd term	3rd term	4th Term
$ 15.37	$ 17.37	$ 19.33	$ 20.33

4-46Reinf

Ironworker — 11/01/2018

JOB DESCRIPTION Ironworker **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per Hour:	07/01/2018
Ironworker Rigger	$ 62.84
Ironworker Stone Derrickman	$ 62.84

SUPPLEMENTAL BENEFITS
Per hour: $ 39.79

OVERTIME PAY
See (B, D1, *E, Q, **V) on OVERTIME PAGE
*Time and one-half shall be paid for all work on Saturday up to eight (8) hours and double time shall be paid for all work thereafter.
** Benefits same premium as wages on Holidays only

HOLIDAY
Paid: See (18) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 25) on HOLIDAY PAGE

*Work stops at schedule lunch break with full day's pay.

REGISTERED APPRENTICES
Wage per hour:

1/2 year terms at the following hourly wage rate:

	1st	2nd	3rd	4th	5th	6th
07/01/2018	$31.42	$31.42	$44.54	$43.07	$54.41	$54.41

Supplemental benefits:

Per hour:	$19.97	$19.97	$30.02	$30.02	$30.02	$30.02

9-197D/R

Ironworker **11/01/2018**

JOB DESCRIPTION Ironworker **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per Hour:	07/01/2018	01/01/2019
Ornamental	$44.65	$1.25/hr.
Chain Link Fence	44.65	to be Allocated
Guide Rail	44.65	

SUPPLEMENTAL BENEFITS
Per hour:
Journeyworker: $ 54.05

OVERTIME PAY
See (B, B1, E2, Q, V) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
1st term represents first 1-10 months, thereafter (1/2) year terms at the following percentage of Journeyman's wage.

1st	2nd	3rd	4th	5th
50%	55%	60%	70%	80%

Supplemental Benefits per hour:

1st Term	$ 41.37
2nd Term	42.67
3rd Term	43.91
4th Term	46.44
5th Term	48.98

4-580-Or

Ironworker **11/01/2018**

JOB DESCRIPTION Ironworker **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES
PER HOUR:

	07/01/2018	01/01/2019	07/01/2019
Ironworker:		Additional	Additional
Structural	$ 50.70	$1.82/Hr.	$1.93/Hr.
Bridges		to be allocated	to be allocated
Machinery			

SUPPLEMENTAL BENEFITS
PER HOUR:

Journeyman $ 73.93

OVERTIME PAY
See (B, B1, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 18, 19) on HOLIDAY PAGE

REGISTERED APPRENTICES
WAGES PER HOUR:

6 month terms at the following rate:

1st	$ 26.44
2nd	27.04
3rd - 6th	27.65

Supplemental Benefits
PER HOUR:
All Terms 52.68

4-40/361-Str

Laborer - Building — 11/01/2018

JOB DESCRIPTION Laborer - Building **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES
WAGES
Per Hour: 07/01/2018

Building Laborer	$ 39.40
Asbestos Abatement Workers (Re-Roofing Removal see Roofer)	36.00

SUPPLEMENTAL BENEFITS
Per Hour:

Building Laborer	$ 29.56
Asbestoes Abatment Worker	16.45

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE
See also(H)for Fire Watch on OVERTIME PAGE
Asbestos Worker See (B, H)

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 25) on HOLIDAY PAGE
Asbestos Worker see (5,6,8 & 28)

REGISTERED APPRENTICES
Regular Hours Work Terms

Term #1	1 hr to 1000hrs
Term #2	1001hrs to 2000hrs
Term #3	2001hrs to 3000hrs
Term #4	3001hrs to 4000hrs

Wages per hour:

1st Term	$ 17.46
2nd Term	20.55
3rd Term	25.43
4th Term	30.41

Benifits per hour

1st Term	$ 19.65
2nd Term	22.44
3rd Term	22.44
4th Term	22.44

4-66

Laborer - Heavy&Highway — 11/01/2018

JOB DESCRIPTION Laborer - Heavy&Highway **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES
Laborer (Heavy/Highway):
GROUP # 1: Asphalt Rakers, Concrete Curb Formsetters.
GROUP # 2: Asphalt Shovelers, Roller Boys and Tampers.
GROUP # 3: Basic Laborer, Power Tool(Jackhammer), Landscape Construction, Traffic Control Personnel(flaggers)

WAGES PER HOUR:

	07/01/2018	06/01/2019
GROUP # 1		
Total Wage Paid	$ 51.43	Additional
"Base Wage"	44.68	$ 2.45
GROUP # 2		
Total Wage Paid	$ 50.11	Additional
"Base Wage"	43.36	$ 2.45
GROUP # 3		
Total Wage Paid	$ 46.10	Additional
"Base Wage"	39.35	$ 2.29

NOTE: "Base Wage" for Premium/Overtime calculation Only. $6.75 is differance between "Base" and "Total"

SUPPLEMENTAL BENEFITS
Per Hour:
ALL GROUPS $ 29.87

After Forty (40)paid hours in a work week
OVERTIME PAY $ 18.74

OVERTIME PAY
OVERTIME PAY
See (B, E2, F) on OVERTIME PAGE
NOTES: Premium/Overtime Pay to be calculated on "Base Wage" ONLY
Example Group# 3: $39.35 X Time and One Half = $59.02 + $6.75 = $65.77
Premium Pay of 30% of base wage for all Straight time hours on all New York State, D.O.T. and other Goverment Mandated Off-Shift Work.
Hazardous Material Work add an Additional 10% of base wage

HOLIDAY
HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (1) on HOLIDAY PAGE

REGISTERED APPRENTICES
1000 hour(s) Terms at the following Pecentage of the "Base Wage" except
4th Term calculate at Total Wage Paid.

1st 0-1000/Hrs.	60%
2nd 1001-2000/Hrs.	70%
3rd 2001-3000/Hrs.	80%
4th 3001-4000/Hrs.	90%

Supplemental Benefits per hour:

All APPRENTICES	$ 29.87
After Forty(40) paid hours in a work Week	$ 18.74

4-1298

Mason — 11/01/2018

JOB DESCRIPTION Mason **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES
Per Hour: 07/01/2018

Brick/Blocklayer $ 61.12

SUPPLEMENTAL BENEFITS
Per Hour:

Brick/Block Layer $ 27.30

OVERTIME PAY
See (A, E, E2, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
(800 hour) Terms at the following Percentage of Journeyworkers Wage:

1st	2nd	3rd	4th	5th
50%	60%	70%	80%	90%

Supplemental Benefits per hour:

All Apprentices $ 16.90

4-1Brk

Mason - Building — 11/01/2018

JOB DESCRIPTION Mason - Building **DISTRICT** 9

ENTIRE COUNTIES
Nassau, Rockland, Suffolk, Westchester

WAGES
Per hour: 07/01/2018

Tile Finisher $ 43.36

SUPPLEMENTAL BENEFITS
Per Hour:
$ 28.99

OVERTIME PAY
See (B, E, Q, *V) on OVERTIME PAGE
Work beyond 10 hours on a Saturday shall be paid at double the hourly wage rate.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 15, 16, 25) on HOLIDAY PAGE

9-7/88A-tf

Mason - Building — 11/01/2018

JOB DESCRIPTION Mason - Building **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES
Building:
07/01/2018
Wages per hour:

Mosaic & Terrazzo Mechanic $ 52.46
Mosaic & Terrazzo Finisher $ 50.86

SUPPLEMENTAL BENEFITS
Per hour:

Mosaic & Terrazzo Mechanic $ 34.06
Mosaic & Terrazzo Finisher $ 34.04

OVERTIME PAY
See (A, *E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE
Easter Sunday is an observed holiday.Holidays falling on a Saturday will be observed on that Saturday. Holidays falling on a Sunday will be celebrated on the Monday.

REGISTERED APPRENTICES
Wages per hour:
(750 Hour) terms at the following wage rate.

	1st	2nd	3rd	4th	5th	6th	7th	8th
07/01/2018	$ 26.23	$ 28.85	$ 31.48	$ 34.10	$ 36.72	$ 39.35	$ 44.59	$ 49.84

Supplemental benefits per hour:

07/01/2018	$ 17.05	$ 18.74	$ 20.43	$ 22.15	$ 23.85	$ 25.55	$ 28.96	$ 32.37

9-7/3

Mason - Building — 11/01/2018

JOB DESCRIPTION Mason - Building **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES
Per hour: 07/01/2018

Building-Marble Restoration:

Marble, Stone & Terrazzo Polisher, etc $ 40.99

SUPPLEMENTAL BENEFITS
Per Hour:
Journeyworker:

Building-Marble Restoration:
Marble, Stone & Polisher $ 26.59

OVERTIME PAY
See (B, *E, Q, V) on OVERTIME PAGE
*ON SATURDAYS, 8TH HOUR AND SUCCESSIVE HOURS PAID AT DOUBLE HOURLY RATE.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 25) on HOLIDAY PAGE
1ST TERM APPRENTICE GETS PAID FOR ALL OBSERVED HOLIDAYS.

REGISTERED APPRENTICES
WAGES per hour:

2701 hour term at the following wage:

	1st 1-900	2nd 901-1800	3rd 1801-2700	4th 2701
07/01/2018	$28.63	$32.75	$36.87	$40.99

Supplemental Benefits Per Hour:

07/01/2018	$ 24.24	$ 25.02	$ 25.81	$ 26.59

9-7/24-MP

Mason - Building — 11/01/2018

JOB DESCRIPTION Mason - Building **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES
Wages: 07/01/2018

Marble Cutters & Setters $ 58.63

SUPPLEMENTAL BENEFITS
Per Hour:

Journeyworker $ 36.12

OVERTIME PAY
See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wage Per Hour:

7500 hour terms at the following wage.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
1-750	751-1500	1501-2250	2251-3000	3001-3750	3751-4500	4501-5250	5251-6000	6001-6751	6751-7500
07/01/2018									
$23.34	$26.29	$29.22	$32.16	$35.11	$38.05	$40.98	$43.93	$49.82	$55.68

Supplemental Benefits per hour:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
$25.69	$26.55	$27.44	$28.30	$29.16	$30.03	$30.91	$31.77	$33.50	$35.26

9-7/4

Mason - Building — 11/01/2018

JOB DESCRIPTION Mason - Building **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES
Per hour: 07/01/2018

Marble, Stone,etc.
Maintenance Finishers: $ 22.77

Note 1: An additional $2.00 per hour for time spent grinding floor using "60 grit" and below.
Note 2: Flaming equipment operator shall be paid an additional $25.00 per day.

SUPPLEMENTAL BENEFITS
Per Hour:

Marble, Stone, etc
Maintenance Finishers: $ 13.24

OVERTIME PAY
See (B, *E, Q, V) on OVERTIME PAGE
*Double hourly rate after 8 hours on Saturday

HOLIDAY
Paid: See (5, 6, 8, 11, 15, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 25) on HOLIDAY PAGE
1st term apprentice gets paid for all observed holidays.

REGISTERED APPRENTICES
WAGES per hour:
(750 hour)terms at the following percentage of journeyman''s wage 07/01/2018

rate:

1st term	$15.90
2nd term	$16.82
3rd term	$17.73
4th term	$18.65
5th term	$20.02
6th term	$21.85
7th term	$22.77

Supplemental Benefits:
Per hour:

1st term	$ 13.14
2nd term	$ 13.15
3rd term	$ 13.17
4th term	$ 13.18
5th term	$ 13.20
6th term	$ 13.20
7th term	$ 13.24

9-7/24M-MF

Mason - Building — 11/01/2018

JOB DESCRIPTION Mason - Building **DISTRICT** 9

ENTIRE COUNTIES
Nassau, Rockland, Suffolk, Westchester

WAGES
Per hour: 07/01/2018

Tile Setters $ 56.13

SUPPLEMENTAL BENEFITS
Per Hour:

$ 33.29

OVERTIME PAY
See (B, E, Q, V) on OVERTIME PAGE
* This portion of benefits subject to same premium rate as shown for overtime wages.
Work beyond 10 hours on Saturday shall be paid at double the hourly wage rate.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wage per hour:

Tile Setters:
(750 hour) term at the following wage rate:

Term: 1st 1-750	2nd 751-1500	3rd 1501-2250	4th 2251-3000	5th 3001-3750	6th 3751-4500	7th 4501-5250	8th 5251 6000
$29.13	$33.57	$36.69	$40.13	$43.77	$47.22	$50.15	$53.93

Supplemental Benefits per hour:

1st	2nd	3rd	4th	5th	6th	7th	8th
$ 15.70	$ 15.75	$ 17.70	$ 18.15	$ 18.98	$ 20.03	$ 21.57	$ 26.76

9-7/52A

Mason - Building / Heavy&Highway — 11/01/2018

JOB DESCRIPTION Mason - Building / Heavy&Highway **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES

NOTE: Shall include but not limited to Precast concrete slabs (London Walks)Marble and Granite pavers 2'x 2' or larger.
Per Hour:

	07/01/2018
Stone Setter	$ 64.42
Stone Tender	$ 44.89

SUPPLEMENTAL BENEFITS
Per Hour:

Stone Setter	$ 33.30
Stone Tender	$ 19.40

OVERTIME PAY
See (*C, **E, Q) on OVERTIME PAGE
* On weekdays the eighth (8th) and ninth (9th) hours are time and one-half all work thereafter is paid at double the hourly rate.
** The first nine (9) hours on Saturday is paid at time and one-half all work thereafter is paid at double the hourly rate.

HOLIDAY
Paid: See (*18) on HOLIDAY PAGE
Overtime: See (5, 6, 10) on HOLIDAY PAGE
Paid: *Must work first 1/2.

REGISTERED APPRENTICES
Per Hour:

Stone Setter(800 hour) terms at the following Percentage of Stone Setters wage rate per hour:

1st	2nd	3rd	4th	5th	6th
50%	60%	70%	80%	90%	100%

Supplemental Benefits:
All Apprentices $ 20.44

4-1Stn

Mason - Building / Heavy&Highway **11/01/2018**

JOB DESCRIPTION Mason - Building / Heavy&Highway **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES
Per hour:

	07/01/2018
Marble-Finisher	$ 46.76

SUPPLEMENTAL BENEFITS
Journeyworker:
per hour

Marble- Finisher	$ 33.93

OVERTIME PAY
See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY
Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE
* Work beyond 8 hours on a Saturday shall be paid at double the rate.
** When an observed holiday falls on a Sunday, it will be observed the next day.

9-7/20-MF

Mason - Building / Heavy&Highway **11/01/2018**

JOB DESCRIPTION Mason - Building / Heavy&Highway **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES

Per Hour:	07/01/2018
Cement Mason	$ 51.97

SUPPLEMENTAL BENEFITS
Per Hour:

Cement Mason	$ 33.71
Overtime Rate*	$ 54.42

OVERTIME PAY
See (*B1, Q, V) on OVERTIME PAGE
* Applies to 9th and 10th hours and up to the 10th hour on Saturday

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 13, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1) year terms at the following Percentage of Journeyworkers Wage.

1st Term	50%
2nd Term	60%
3rd Term	70%

Supplement Benefits per hour paid:

1st Term	$ 16.86 OT Rate $ 27.22
2nd Term	$ 20.23 OT Rate $ 32.66
3rd Term	$ 23.60 OT Rate $ 38.10

4-780

Mason - Heavy&Highway — 11/01/2018

JOB DESCRIPTION Mason - Heavy&Highway **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES
Per Hour: 07/01/2018

Pointer, Caulkers & Cleaners	$ 53.67

SUPPLEMENTAL BENEFITS
Per Hour:

Pointer, Cleaners & Caulkers	$ 27.14

OVERTIME PAY
See (B, E2, H) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:

One (1) year terms at the following wage rates.

1st	2nd	3rd	4th
$ 26.36	$ 29.42	$ 34.80	$ 41.93

Apprentices Supplemental Benefits:
(per hour paid)

$ 14.30	$ 18.24	$ 20.99	$ 21.99

4-1PCC

Operating Engineer - Building — 11/01/2018

JOB DESCRIPTION Operating Engineer - Building **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES
BUILDING CATEGORIES:

CLASS " AA "CRANES:
ABI Machine (150,000lbs and over or 149,999lbs and under when driving steel sheet piles),Crane, Truck Crane, Derrick, Dragline, Dredge, Crawler Crane, Tower Crane & Pile Driver, Vertical Drill Rig (115,000lbs and over and 114,999lbs and under).

CLASS "A":
ABI Machine (149,999 and under used for augering and drilling), Asphalt Spreader, Backhoe Crawler(360 swing), Barrier Machine, CAP (ice machine), Cherrypicker CAP (over 70 tons), CMI or Maxim Spreader, Concrete Pump, Directional Boring, GradAll, Grader, Hydraulic Cherrypicker/Crane (2seats), Hoist (3drum or multi platform), Laser Screed, Loading Machine (Bucket/CAP 10yrds or more), Milling Machine (Large), Pipeline Welder, Plant Engineer, Power Winch (stone setting/structural steel), Powerhouse, Scoop Carry-All Scraper (in tandem), Sideboom Tractor (includes tank work), Track Alignment Machine, Stone Spreader (self propelled), Striping Machine (long line/truck mounted), Tree Grapple, Zamboni.

CLASS "B":
Backhoe (other than 360), Belt Screte, Boom Truck, Bulldozer, Boring Machine/Auger, Cherry Picker(under 70 Tons), Conveyor-Multi, Curb Machine (asphalt or concrete), Dinky Locomotive, Drill Rig (dowels)Fork Lift, Hoist (2 Drum), Loading Machine & Front End Loader, Mechanical Compactors (machine drawn), Mulch Machine(Machine Fed), Post Hole/Auger, Power Wincher (Not Included in Class "A"), Asphalt Roller, Hydraulic Pump with Boring Machine, Scoop, Carryall/Scaper, Skid Loader/Skid Steer/Bobcat, Trenching Machine, Vermeer Cutter, Work Boat, Inspection/Safety Boat.

CLASS "C":
Concrete Finish/Saw/Spreader, Dirt Roller, Hoist (1 drum), Interior Hoist, Milling Machine (small), Oiler Truck Crane (pile work), Power Broom, Vactor Truck, VacAll.

CLASS "D":
Boiler (thermoplastic), Concrete Breaker, Conveyer, Curing Machine, Fork Lift or Walk Behind (power operated), Generator, Hydra Hammer, Compactors (mechanical or hand operated), Maintenance Engineer (small equipment/well point/welding & burning), Mechanic (field man), Micro-Trap with Compressor, Oiler (Truck Crane Boom 100ft or more) Power Winch Truck Mounted (Stone Setter/Struct.Steel), Pin Puller, Portable Heaters, Power Buggies, Pump (double action diaphragm), Pump (4 inch or over), Pump (hydraulic/submersible) Jet Pump, Pulvi-Mixer, Ridge Cutter, Shot Blaster.

CLASS "E":
Batching Plant, Compressor (structural steel/2 or more battery), Generator (small), Grinder, Ground Heater, Power Grinder, Mixer with Skip, Mulching Machine (hand fed), Oiler, Pipeline Welder Helper, Power Washer, Pumps (up to 3 inch/single action 1 to 3 inches), Pump (gypsum), Root Cutter, Stump Chipper, Track Tamper, Tractor (caterpillar or wheel), Trenching Machine (hand), Welding Machine (pile work/structural steel), Deckhand on Work/Inspection/Safety Boat.

	07/01/2018
Class "AA"	$ 75.40
Cranes: Boom length over 100 feet add	$ 1.00 per hour
" " " 150 " "	$ 1.50 " "
" " " 250 " "	$ 2.00 " "
" " " 350 " "	$ 3.00 " "
Class "A"	$ 62.53
Add $3.50 for Hazardous Waste Work	
Class "B"	$ 59.27
Add $2.50 for Hazardous Waste Work	
Class "C"	$ 57.09
Add $1.50 for Hazardous Waste Work	
Class "D"	$ 42.98
Add $1.00 for Hazardous Waste Work	
Class "E"	$ 41.03

SUPPLEMENTAL BENEFITS
Per Hour:

All Classes	$ 37.80

Overtime Rate 32.35

OVERTIME PAY
See (D, O) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 15, 16, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16, 25) on HOLIDAY PAGE
"NOTE" Employee must be Employed day before
and day after Holiday to recieve Holiday Pay.

REGISTERED APPRENTICES
One(1) Year Terms at the following Rate:

1st Term	$ 21.94
2nd Term	22.80
3rd Term	23.48

Supplemental Benefits per hour:

All Apprentices	$ 15.64
Overtime Rate	5.60

4-138

Operating Engineer - Building / Heavy&Highway — 11/01/2018

JOB DESCRIPTION Operating Engineer - Building / Heavy&Highway **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES

Per Hour:	07/01/2018	08/01/2018
Well Driller	$ 36.07	$ 37.33
Well Driller Helper	$ 31.39	$ 32.49
Hazardous Waste Differential Added to Hourly Wage:		
Level A	$ 3.00	$3.00
Level B	2.00	2.00
Level C	1.00	1.00
Monitoring Well Work Add to Hourly Wage:		
Level A	$ 3.00	$3.00
Level B	2.00	2.00

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2018	08/01/2018
Well Driller & Helper	10% of straight time rate plus $ 12.20	10% of straight time rate plus $ 12.20

Additional $ 4.00 for Premium Time

OVERTIME PAY
See (B, E, G, P) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 16, 23) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 23) on HOLIDAY PAGE

REGISTERED APPRENTICES
Apprentices at 12 Month Terms

Wages Per Hour:	07/01/2018	08/01/2018
1st Term	$ 21.94	$21.94
2nd Term	$ 22.80	$22.80
3rd Term	$ 23.48	$23.48

SUPPLEMENTAL BENIFITS
Per Hour:

1st Term	10% of Wage + $ 5.10
2nd Term	10% of Wage + $ 5.60
3rd Term	10% of Wage + $ 6.60

BENEFITS AT PREMIUM TIME
Per Hour:

1st Term	10% of Wage + $ 5.85
2nd Term	10% of Wage + $ 6.60
3rd Term	10% of Wage + $ 8.10

4-138well

Operating Engineer - Heavy&Highway — 11/01/2018

JOB DESCRIPTION Operating Engineer - Heavy&Highway **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES
Party Chief - One who directs a survey party
Instrument Man - One who runs the instrument and assists Party Chief
Rodman - One who holds the rod and in general, assists the survey party
Categories cover GPS & Under Ground Surveying

Per Hour:	07/01/2018
Heavy Highway/Building	
Party Chief	$ 67.76
Instrument Man	51.66
Rodman	44.30

SUPPLEMENTAL BENEFITS
Per Hour:

Heavy Highway/Building	$ 34.23
Premium*:	
Heavy Highway/Building	$ 43.40
Premium**:	
Heavy Highway/Building	$ 52.56

* Applies to instances where 1-1/2 regular rate are paid
**Applies to instances where 2 times the rate are paid.

OVERTIME PAY
See (B, *E, Q) on OVERTIME PAGE
* Doubletime paid on the 9th hour on Saturday.

HOLIDAY

Paid:	See (5, 6, 9, 11, 12, 15, 25) on HOLIDAY PAGE
Overtime:	See (5, 6, 9, 11, 12, 15, 25) on HOLIDAY PAGE

4-15D-N/S co.

Operating Engineer - Heavy&Highway — 11/01/2018

JOB DESCRIPTION Operating Engineer - Heavy&Highway **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES
HEAVY and HIGHWAY CATEGORIES:

CLASS "AA" CRANES:
ABI Machine (150,000lbs and over), ABI Machine (149,000lbs and under driving steel sheets), Crane, Truck Crane, Derrick, Dragline, Dredge, Crawler Crane, Tower Crane, Pile Driver.

CLASS "A":
ABI Machine (149,000lbs and under for Augering or Drilling), Asphalt Spreader, Backhoe Crawler (360 Swing & over 150,000lbs), Backhoe Crawler (360 Swing & under 149,000lbs), Barrier Machine, Cherrypicker Cap (over 70 tons), CMI or Maxim Spreader, Concrete Pump, Directional Boring, Grader, Gradall, Hoist (3 drum or multi-platform), Hydraulic Cherrypicker/crane (2 seats), Loading Machine (bucket 10 yds. or more), Laser Screed, Milling Machine (Large), Pipeline Welder, Plant Engineer. Power Winch-Stone Setting/Structural Steel or Truck Mounted, Powerhouse, Scoop-Carryall-Scaper in Tandem, Side Boom Tractor, Side Boom Tractor (Tank Work), Stone Spreader(self propelled), Striping Machine (long line/truck mounted), Tree Grapple, Tank Work, Track Alignment Machine.

CLASS "B":
Backhoe (other than 360), Belt Screte, Boom Truck, Bulldozer, Boring Machine/Auger, Cherry Picker (under 70 tons), Convetor-Multi, Curb Machine Asphalt/Concrete, Dinky Locomotive, Drill Rig for Dowels, Field Mechanic, Fork Lift, Hoist (2 Drum), Loading Machine, Loading Machine (Front End), Mechanical Compactors (Machine Drawn), Mulching Machine (Machine Fed), Post Hole/Auger, Power Winch (other than structural steel), Pump Hydraulic (with boring machine), Asphalt Roller, Scoop (carry-all, scraper), Skid Loader/Steer, Vermeer Cutter, Work Boat, Inspection & Safety Boat.

CLASS "C":
Concrete Finish/Saw/Spreader Machines, Dirt Roller, Hoist (1 drum), Interior Hoist, Oiler Truck Crane(Pile work), Power Broom, Small Milling Machine, Vactor Truck/VacAll Truck.

CLASS "D":
Boiler (Thermoplastic), Concrete Breaker, Conveyor, Curing Machine, Fireman, Fork lift (walk behind), Generator, Hydra Hammer, Maintenance Engineer (small equipment/Well Point/Welding & Burning), Compactors (hand operated), Pin Puller, Portable Heaters, Power Buggies, Pulvi Mixer, Pumps (double action/4 inch and over/Hydraulic/Submersible & Jet), Ridge Cutter, Robotic Unit Operator(Trenchless Pipe Rehab-Cleaning & Television of Sewers/CCTV Inspection), Shotblaster.

CLASS "E":
Batching Plant (On Job Site), Compressor (structural steel/2 or more in battery), Generator(small), Grinder, Ground Heater(boilers), Power Grinder, Mixer (with skip), Mulching Machine (hand feed), Oiler, Pipeline Welder Helper, Power Washer, Pump(up to 3 inches/Gypsum/Single action 1 to 3 inches), Root Cutter, Stump Grinder, Track Tamper, Tractor (caterpillar or wheel), Trenching Machine (hand), Welding Machine (Pile Work/Structural Steel), Deckhand (on Work/Inspection/Safety Boat).

	07/01/2018
Class "AA"	$ 74.69
Cranes: Boom Length over 100 feet add	$ 1.00 per hour
" " " 150 " "	$ 1.50 " "
" " " 250 " "	$ 2.00 " "
" " " 350 " "	$ 3.00 " "
Class "A"	$ 66.00*
*Add $3.50 for Hazardous Waste Work.	
Class "B"	$ 61.00*
*Add $2.50 for Hazardous Waste Work.	
Class "C"	$ 59.37*
*Add $1.50 for Hazardous Waste Work	
Class "D"	$ 44.88
*Add $1.00 for Hazardous Waste Work	
Class "E"	$ 42.92

"NOTE": ADD 30% to straight time hourly wage for NEW YORK STATE D.O.T. and other GOVERNMENTAL MANDATED off-shift work.

SUPPLEMENTAL BENEFITS
Per Hour:

ALL CLASSES	$ 38.05
Note: OVERTIME AMOUNT	$ 32.35

OVERTIME PAY
See (D, O) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 7, 8) on HOLIDAY PAGE
Overtime: See (5, 6, 7, 8) on HOLIDAY PAGE
"Note" Employee must be employed day before and day after

a holiday to receive holiday pay.

REGISTERED APPRENTICES
Wage per hour:
REGISTERED APPRENTICES
One(1) Year Terms at the following Rate:

1st Term	$ 21.94
2nd Term	22.80
3rd Term	23.48

SUPPLEMENTAL BENEFITS:

APPRENTICES	$ 15.64
Note: Overtime Amount	$ 5.60

4-138

Operating Engineer - Marine Dredging — 11/01/2018

JOB DESCRIPTION Operating Engineer - Marine Dredging **DISTRICT** 4

ENTIRE COUNTIES
Albany, Bronx, Cayuga, Chautauqua, Clinton, Columbia, Dutchess, Erie, Essex, Franklin, Greene, Jefferson, Kings, Monroe, Nassau, New York, Niagara, Orange, Orleans, Oswego, Putnam, Queens, Rensselaer, Richmond, Rockland, St. Lawrence, Suffolk, Ulster, Washington, Wayne, Westchester

WAGES
These wages do not apply to Operating Engineers on land based construction projects. For those projects, please see the Operating Engineer Heavy/Highway Rates. The wage rates below for barge mounted cranes and other equipment are only for marine dredging work in navigable waters found in the counties listed above.

Per Hour:

DREDGING OPERATIONS	07/01/2018
CLASS A	
Operator, Leverman, Lead Dredgeman	$ 38.18
CLASS A1 Dozer,Front Loader Operator	To conform to Operating Engineer Prevailing Wage in locality where work is being performed including benefits.
CLASS B	
Barge Operator Spider/Spill Tug Operator(over1000hp), OperatorII, Fill Placer, Derrick Operator, Engineer, Chief Mate, Electrician, Chief Welder, Maintenance Engineer	$ 33.02
Certified Welder, Boat Operator(licensed)	$ 31.09
CLASS C	
Drag Barge Operator, Steward, Mate, Assistant Fill Placer,	$ 30.24
Welder (please add)	$ 0.06
Boat Operator	$ 29.26
CLASS D	
Shoreman, Deckhand, Rodman, Scowman, Cook, Messman, Porter/Janitor	$ 24.30
Oiler(please add)	$ 0.09

SUPPLEMENTAL BENEFITS
Per Hour:
THE FOLLOWING SUPPLEMENTAL BENEFITS APPLY TO ALL CATEGORIES

	07/01/2018
All Classes A & B	$11.23 plus 8% of straight time wage, Overtime hours add $ 0.63
All Class C	$10.93 plus 8% of straight time wage, Overtime hours add $ 0.48
All Class D	$10.63 plus 8% of straight time wage, Overtime hours add $ 0.33

OVERTIME PAY
See (B, F, R) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 26) on HOLIDAY PAGE

4-25a-MarDredge

Operating Engineer - Survey Crew - Consulting Engineer — 11/01/2018

JOB DESCRIPTION Operating Engineer - Survey Crew - Consulting Engineer **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Suffolk, Westchester

PARTIAL COUNTIES
Dutchess: That part in Duchess County lying South of the North City line of Poughkeepsie.

WAGES
Feasibility and preliminary design surveying, any line and grade surveying for inspection or supervision of construction.

Per hour:	07/01/2018
Survey Classifications	
Party Chief	$ 43.10
Instrument Man	36.01
Rodman	31.54

SUPPLEMENTAL BENEFITS
Per Hour:

All Crew Members: $ 18.50

OVERTIME PAY
OVERTIME:.... See (B, E*, Q, V) ON OVERTIME PAGE.
*Doubletime paid on the 9th hour on Saturday.

HOLIDAY
Paid: See (5, 6, 7, 11, 16) on HOLIDAY PAGE
Overtime: See (5, 6, 7, 11, 16) on HOLIDAY PAGE

9-15dconsult

Operating Engineer - Trenchless Pipe Rehab — 11/01/2018

JOB DESCRIPTION Operating Engineer - Trenchless Pipe Rehab **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES

IMPORTANT NOTE: This Category & Classifications are now located in Operating Engineers/Heavy Highway & Laborers/ Heavy Highway.

Per Hour:

	07/01/2018 (SEE)
Robotic Unit Operator	Operator(class D)
Technician/Boiler, Generator	Operator(classes C&D)
AM Liner/Hydra Seal	Laborer(Grp#3)
Hobas Pipe, Polyethyene Pipe or Pull and Inflate Liner	Laborer(Grp#3)

OVERTIME PAY

HOLIDAY

4-138TrchPReh

Painter — 11/01/2018

JOB DESCRIPTION Painter **DISTRICT** 8

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Suffolk, Westchester

WAGES

Per hour:	07/01/2018
Brush	$ 46.85*
Abatement/Removal of lead based or lead containing paint on materials to be repainted.	46.85*
Spray & Scaffold	$ 49.85*
Fire Escape	49.85*
Decorator	49.85*
Paperhanger/Wall Coverer	50.03*

*Subtract $ 0.10 to calculate premium rate.

SUPPLEMENTAL BENEFITS

Per hour:	07/01/2018
Paperhanger	$ 28.19
All others	26.72
Premium	29.22**

**Applies only to "All others" catergory,not paperhanger journeyman.

OVERTIME PAY
See (A, H) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
One (1) year terms at the following wage rate.

Per hour:	07/01/2018
Appr 1st term...	$ 17.85*
Appr 2nd term...	23.26*
Appr 3rd term...	28.14*
Appr 4th term...	37.52*

*Subtract $ 0.10 to calculate premium rate.

Supplemental benefits:

Per Hour:	07/01/2018
Appr 1st term...	$ 13.81
Appr 2nd term...	16.82
Appr 3rd term...	19.42
Appr 4th term...	24.56

8-NYDC9-B/S

Painter — 11/01/2018

JOB DESCRIPTION Painter **DISTRICT** 8

ENTIRE COUNTIES
Putnam, Suffolk, Westchester

PARTIAL COUNTIES
Nassau: All of Nassau except the areas described below: Atlantic Beach, Ceaderhurst, East Rockaway, Gibson, Hewlett, Hewlett Bay, Hewlett Neck, Hewlett Park, Inwood, Lawrence, Lido Beach, Long Beach, parts of Lynbrook, parts of Oceanside, parts of Valley Stream, and Woodmere. Starting on the South side of Sunrise Hwy in Valley Stream running east to Windsor and Rockaway Ave., Rockville Centre is the boundary line up to Lawson Blvd. turn right going west all the above territory. Starting at Union Turnpike and Lakeville Rd. going north to Northern Blvd. the west side of Lakeville road to Northern blvd. At Northern blvd. going east the district north of Northern blvd. to Port Washington Blvd. West of Port Washington blvd.to St.Francis Hospital then north of first traffic light to Port Washington and Sands Point, Manor HAven, Harbour Acres.

WAGES

Per hour:	07/01/2018
Drywall Taper	$ 46.85*

*Subtract $ 0.10 to calculate premium rate.

SUPPLEMENTAL BENEFITS

Per hour:	07/01/2018
Journeyman	$ 26.72

OVERTIME PAY
See (A, H) on OVERTIME PAGE

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages - Per Hour: 07/01/2018

1500 hour terms at the following wage rate:

1st term	$ 17.85*
2nd term	$ 23.26*
3rd term	$ 28.14*
4th term	$ 37.52*

*Subtract $ 0.10 to calculate premium rate.

Suppemental Benefits - Per hour:
One year term (1500 hours) at the following dollar amount.

1st year	$ 13.81
2nd year	$ 16.82
3rd year	$ 19.42
4th year	$ 24.56

8-NYDCT9-DWT

Painter - Bridge & Structural Steel — 11/01/2018

JOB DESCRIPTION Painter - Bridge & Structural Steel **DISTRICT** 8

ENTIRE COUNTIES
Albany, Bronx, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Kings, Montgomery, Nassau, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES
Per Hour:
STEEL:

Bridge Painting:	07/01/2018	10/01/2018
	$ 49.50	$ 49.50
	+ 6.38*	+ 6.38*

ADDITIONAL $6.00 per hour for POWER TOOL/SPRAY, whether straight time or overtime.

NOTE: All premium wages are to be calculated on base rate per hour only.

* For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (no cap).

NOTE: Generally, for Bridge Painting Contracts, ALL WORKERS on and off the bridge (including Flagmen) are to be paid Painter"s Rate; the contract must be ONLY for Bridge Painting.

SUPPLEMENTAL BENEFITS

Per Hour:

Journeyworker:	07/01/2018	10/01/2018
	$ 8.25	$ 9.50
	+ 24.35*	+ 26.05*

* For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (no cap).

OVERTIME PAY

See (A, F, R) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (4, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage - Per hour:

Apprentices: (1) year terms

	07/01/2018	10/01/2018
1st year	$ 22.65	$ 23.13
2nd year	33.98	34.73
3rd year	45.30	46.30

Supplemental Benefits - Per hour:

1st year	$ 12.76	$ 13.44
2nd year	19.14	20.16
3rd year	25.52	26.88

8-DC-9/806/155-BrSS

Painter - Line Striping — 11/01/2018

JOB DESCRIPTION Painter - Line Striping **DISTRICT** 8

ENTIRE COUNTIES

Albany, Bronx, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Kings, Montgomery, Nassau, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES

Per hour:

Painter (Striping-Highway):	07/01/2018
Striping-Machine Operator*	$ 29.93
Linerman Thermoplastic	$ 36.06

Note: * Includes but is not limited to: Positioning of cones and directing of traffic using hand held devices. Excludes the Driver/Operator of equipment used in the maintenance and protection of traffic safety.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday. Friday may be used as a make-up day.

NOTE - In order to use the '4 Day/10 Hour Work Schedule,' as your normal schedule, you must submit an 'Employer Registration for Use of 4 Day/10 Hour Work Schedule,' form PW30.1; and there must be a dispensation of hours in place on the project. If the PW30.1 is not submitted you may be liable for overtime payments for work over 8 hours per day.

SUPPLEMENTAL BENEFITS

Per hour paid:	07/01/2018
Journeyworker:	
Striping-Machine operator	$ 7.44
Linerman Thermoplastic	$ 7.44

OVERTIME PAY
See (B, B2, E2, F, S) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 20) on HOLIDAY PAGE
Overtime: See (5, 20) on HOLIDAY PAGE

REGISTERED APPRENTICES
One (1) year terms at the following wage rates:

	07/01/2018
1st term	$ 11.97
2nd term	17.96
3rd term	23.94
Supplemental Benefits per hour:	
1st term	$ 7.44
2nd term	7.44
3rd term	7.44

8-1456-LS

Painter - Metal Polisher — 11/01/2018

JOB DESCRIPTION Painter - Metal Polisher **DISTRICT** 8

ENTIRE COUNTIES
Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

	07/01/2018
Metal Polisher	$ 30.58
Metal Polisher*	31.53
Metal Polisher**	34.08

*Note: Applies on New Construction & complete renovation
** Note: Applies when working on scaffolds over 34 feet.

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2018
Journeyworker:	
All classification	$ 7.72

OVERTIME PAY
See (B, E, P, T) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE
Overtime: See (5, 6, 9, 11, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages per hour:
One (1) year term at the following wage rates:

	07/01/2018	01/01/2019
1st year	$ 13.00	$ 15.00
2nd year	13.00	15.00

3rd year	15.75	15.75
1st year*	$ 15.39	$ 17.39
2nd year*	15.44	17.44
3rd year*	16.29	18.29
1st year**	$ 17.50	19.50
2nd year**	17.50	19.50
3rd year**	18.25	20.25

*Note: Applies on New Construction & complete renovation
** Note: Applies when working on scaffolds over 34 feet.

Supplemental benefits:
Per hour:

1st year	$ 5.52	$ 5.52
2nd year	5.52	5.52
3rd year	5.52	5.52

8-8A/28A-MP

Plasterer — 11/01/2018

JOB DESCRIPTION Plasterer **DISTRICT** 9

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES
Per hour:

	07/01/2018	08/01/2018
Building:		
Plasterer/Traditional & Spraying Fireproofing	$ 45.58	$ 45.58

SUPPLEMENTAL BENEFITS
Per hour:

Journeyworker	$ 26.27	$ 26.52

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wages:
(per hour)
800 hours term:

	07/01/2018	08/1/2018
1st term	$18.33	$18.33
2nd term	$20.62	$20.62
3rd term	$25.21	$25.21
4th term	$27.50	$27.50
5th term	$32.08	$32.08
6th term	$34.37	$34.37

Supplemental Benefits:
(per hour):
(800) hours term:

	07/01/2018	08/01/2018
1st term	$ 13.83	$ 13.88
2nd term	$ 14.31	$ 14.36
3rd term	$ 16.28	$ 16.44
4th term	$ 17.36	$ 17.53
5th term	$ 19.53	$ 19.72
6th term	$ 20.61	$ 20.81

9-262

Plumber — 11/01/2018

JOB DESCRIPTION Plumber **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES

Per Hour:	07/01/2018
Plumber/ PUMP & TANK	$ 44.49

SUPPLEMENTAL BENEFITS

Per Hour:	
Plumber	$ 26.98

OVERTIME PAY
See (B, Q, *V) on OVERTIME PAGE
(V) For Sundays & Holidays if Worked Only

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
One(1) Year Terms at the Following Percentage of Journeymans wage:

1st Term	30%
2nd Term	40%
3rd Term	50%
4th Term	60%
5th Term	70%
6th Term	85%

Supplemental Benifits Per Hour:

1st Term	$15.06
2nd Term	$15.70
3rd Term	$16.52
4th Term	$17.40
5th Term	$20.13

4-200 Pump & Tank

Plumber 11/01/2018

JOB DESCRIPTION Plumber **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES

Per Hour:	07/01/2018	11/01/2018	05/01/2019
Plumber	$ 52.48	$ 52.48	$52.48

SUPPLEMENTAL BENEFITS

Per Hour:			
Plumber	$ 41.48	$ 41.98	$ 42.98

OVERTIME PAY
See (A, E, Q, *V) on OVERTIME PAGE
CODE "V" is only for SUNDAYS and HOLIDAYS THAT ARE WORKED

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
One(1) Year Terms at the following percentage of Plumbers Rate:

1st Term	2nd Term	3rd Term	4th Term	5th Term
30%	40%	50%	60%	70%

Supplemental Benefits per hour:

	07/01/2018	11/01/2018	05/01/2019
1st Term	$ 27.96	$ 28.46	$ 29.46
2nd Term	30.27	30.77	31.77
3rd Term	31.64	32.14	34.14
4th Term	33.13	33.63	34.63
5th Term	34.71	35.21	36.21

4-200

Plumber — 11/01/2018

JOB DESCRIPTION Plumber **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES
Per Hour:

	07/01/2018
Plumber	
MAINTENANCE ONLY	$ 30.80

Maintenance: Correction of problem(s)with the existing fixture or group of fixtures, preventive repairs or servicing of said fixtures

SUPPLEMENTAL BENEFITS
SUPPLEMENTAL BENEFITS
Per Hour:

Plumber	
Maintenance	$ 15.65

OVERTIME PAY
See (B, J) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16) on HOLIDAY PAGE

4-200 Maintance

Roofer — 11/01/2018

JOB DESCRIPTION Roofer **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES

Per Hour	07/01/2018	05/01/2019
ROOFER/Waterproofer		
Total Wage to be Paid	$ 45.00	$1.50 Per Hour to be allocated
"Base" Wage	41.00**	

SUPPLEMENTAL BENEFITS
Per Hour:

ROOFER/Waterproofer	$ 32.12

OVERTIME PAY
Per Hour:
NEW ROOF SEE (B,E,Q)
RE-ROOF SEE (B,E,E2,Q)
NOTE:** Overtime Pay to be calculated on "BASE" Wage then add $4.00.
(Example: $41.00 x time and one half = $61.50 + $4.00 = $65.50)

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 13, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
(1) Year terms at the following Percentage of Roofers/Waterproofers Wage.

1st	2nd	3rd	4th
40%	50%	70%	80%

Supplemental Benefits per hour:

	07/01/2018
1st Term	$ 9.08
2nd Term	11.22
3rd Term	22.69
4th Term	25.85

4-154

Sheetmetal Worker — 11/01/2018

JOB DESCRIPTION Sheetmetal Worker **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per Hour:	07/01/2018	08/01/2018
Sign Erector	$ 47.67	Additional $1.95/hr.

NOTE: Structurally Supported Overhead Highway Signs(See STRUCTURAL IRON WORKER CLASS)

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2018	08/01/2018
Sign Erector	$ 44.44	Additional $1.64/hr

OVERTIME PAY
See (A, F, S) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 10, 11, 12, 16, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 10, 11, 12, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
Per Hour:
6 month Terms at the following percentage of Sign Erectors wage rate:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
35%	40%	45%	50%	55%	60%	65%	70%	75%	80%

SUPPLEMENTAL BENEFITS
Per Hour:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
$13.11	$14.85	$16.59	$18.34	$25.56	$27.80	$30.76	$33.07	$35.36	$37.65

4-137-SE

Sheetmetal Worker — 11/01/2018

JOB DESCRIPTION Sheetmetal Worker **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES

Per Hour:	07/01/2018
Sheetmetal Worker	$ 53.22
Temporary Operation or Maintenace of Fans	42.58

SUPPLEMENTAL BENEFITS
Per Hour:

Sheetmetal Worker
$ 45.04
Maintenance Worker
45.04

OVERTIME PAY
See (B, E, E2, Q, V) on OVERTIME PAGE
For Maintenance See Codes B,E, Q & V

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES
Per Hour:Wages

Six(6) Month Terms As Follows:

1st & 2nd Term	$ 18.67
3rd & 4th Term	23.98
5th & 6th Term	29.29
7th Term	37.28
8th Term	39.83
9th Term	42.59

Per Hour: Supplemental Benifits

1st & 2nd Term	$ 16.49
3rd & 4th Term	22.75
5th & 6th Term	26.79
7th Term	32.84
8th Term	34.88
9th Term	36.84

4-28

Steamfitter **11/01/2018**

JOB DESCRIPTION Steamfitter **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES
Per Hour: 07/01/2018

AC Service/Heat Service $ 41.50
Steamfitter Maintenance

Refrigeration, A/C, Oil Burner and Stoker Service and Repair.
Refrigeration Compressor installation.
Air Condition / Heating Compressor installation up to 15hp (combined).

SUPPLEMENTAL BENEFITS
Per Hour

AC Service/Heat Service $ 13.50
Steamfitter Maintenance

OVERTIME PAY
See (B, E, Q) on OVERTIME PAGE

HOLIDAY
Paid: See (5, 6, 11, 15, 25, 26) on HOLIDAY PAGE

4-638B-StmFtrRef

Steamfitter **11/01/2018**

JOB DESCRIPTION Steamfitter **DISTRICT** 4

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES
Per Hour: 07/01/2018 12/26/2018

Sprinkler/Steam Fitter	$64.06	$0.75/hr. to be Allocated
Temporary Heat & AC Fitter	$48.70	

Note: Add 15% to Hourly Wage for "Contracting Agency" Mandated Off Shift Work.

SUPPLEMENTAL BENEFITS
Per Hour:

Sprinkler/Steam Fitter	$ 49.18
Temporary Heat & AC Fitter	$ 40.23

Note: Add 15% to Hourly Benefit for "Contracting Agency" Mandated Off Shift Work.

OVERTIME PAY
See (C, *D, O, **V) on OVERTIME PAGE
(D*) Only for Temporary Heat & AC Fitter.

(V**) Benefit Amount to be paid:
Sprinkler/Steam $75.30
Temp Heat/AC $57.60

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES
1 year Terms at the Following:

WAGES per hour:

1st Term	2nd Term	3rd Term	4th Term	5th Term
$ 25.66	$ 32.07	$ 41.66	$ 51.26	$ 54.46

SUPPLEMENTAL BENEFIT per hour:

1st Term	2nd Term	3rd Term	4th Term	5th Term
$ 20.20	$ 24.04	$ 32.28	$ 39.52	$ 41.94
Premium Time Amounts:				
$30.12	$37.66	$48.96	$60.24	$64.02

4-638A-StmSpFtr

Teamster - Asphalt Delivery — 11/01/2018

JOB DESCRIPTION Teamster - Asphalt Delivery **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES
Per Hour:

Heavy Construction Work:
Shall include the supply of Asphalt for construction, improvement and modification of all or any part of Streets, Highways, Bridges, Tunnels,Railroads, Canals, Dams, Airports, Schools, Power Generation Plants, where distance between project and asphalt plant is not more than 50 miles.

TRUCK DRIVER

	07/01/2018
Asphalt Delivery	$ 37.545

Light Construction Work:

Shall include the supply of Asphalt for construction of Single & Multi Family Homes, Town Houses, Apartment Buildings, including Driveways, Streets and Curbs within those projects. Parking Lots, Office Buildings, where distance between project and asphalt plant is not more than 50 miles.

TRUCK DRIVER

	07/01/2018
Asphalt Delivery	$ 32.16

SUPPLEMENTAL BENEFITS
Per Hour:

Heavy Construction Work
TRUCK DRIVER

	07/01/2018
Asphalt Delivery	$ 46.6825

Light Construction Work
TRUCK DRIVER

	07/01/2018
Asphalt Delivery	$ 13.05

OVERTIME PAY
See (B, *B2, E, **I, P, ***R, ****U) on OVERTIME PAGE
(NOTE) PREMIUM PAY of 25% on straight time hours for New York State D.O.T. and or other GOVERNMENTAL MANDATED off shift work.
Note: (B,E,P,T&*U) Apply to Heavy Construction.
Note: (B2,I,T&*U) Apply to Light Construction.
Note: (*U) Only applies after 8 hours worked on holiday.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, *16, **25) on HOLIDAY PAGE
NOTE:(*16) Paid at Double if Worked; (**25) Paid at Double if Worked.

4-282

Teamster - Building — 11/01/2018

JOB DESCRIPTION Teamster - Building **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES
Per Hour:
Truck Driver (Building Demolition & Debris)

	07/01/2018
Trailers	$ 33.61*
Straight Jobs	$ 33.31*

* Plus an additional $2.14/hr. to be allocated

SUPPLEMENTAL BENEFITS
Per Hour:

All Classifications

07/01/2018
$ 33.20

OVERTIME PAY
See (B, E, S1) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 12, 15, 25, 26) on HOLIDAY PAGE

4-282

Teamster - Delivery of Concrete — 11/01/2018

JOB DESCRIPTION Teamster - Delivery of Concrete **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES
Per Hour:

Heavy Construction Work:
Shall Include the supply of Ready-Mix Concrete for construction, improvement and modification of all or any part of Streets, Highways, Bridges, Tunnels, Railroads, Canals, Dams, Airports, Schools & Power Generation Plants, where distance between project and asphalt plant is not more than 50 miles.

TRUCK DRIVER

	07/01/2018
Concrete Delivery	$ 39.775

Light Construction Work:
Shall include the supply of Ready-Mix Concrete for construction of Single & Multi Family Homes, Town Houses, Apartment Buildings, including Driveways, Streets and Curbs within those projects. Parking Lots and Office Buildings, where distance between project and asphalt plant is not more than 50 miles.

TRUCK DRIVER

	07/01/2018
Concrete Delivery	$ 35.705

SUPPLEMENTAL BENEFITS
Per Hour:

Heavy Construction Work	07/01/2018
Concrete Delivery	$ 42.665
Light Construction Work	07/01/2018
Concrete Delivery	$ 14.83

OVERTIME PAY
NOTE: Heavy Construction:B2,I
Light Construction:B,E,P

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, *16, **25) on HOLIDAY PAGE
NOTE:(*16) Paid at Double if Worked. (**25) Paid at Double if Worked.

4-282ns

Teamster - Heavy&Highway — 11/01/2018

JOB DESCRIPTION Teamster - Heavy&Highway **DISTRICT** 4

ENTIRE COUNTIES
Nassau, Suffolk

WAGES
Per Hour:

Heavy Construction Work:
Shall include the construction, improvement or modification of all or any part of Streets, Highways, Bridges, Tunnels, Railroads, Canals, Dams, Airports, Schools, Power Generation Plants.

	07/01/2018
Site Excavating (Chauffeurs)	$ 38.155

Light Construction Work:
Shall include the construction, improvment and modification of Single & Multi Family Homes, Town Houses, Apartment Buildings, including Driveways, Streets and Curbs within those projects. Parking Lots and Office Buildings.

	07/01/2018
Site Excavating (Chauffeurs)	$ 33.66

SUPPLEMENTAL BENEFITS
Per Hour: 07/01/2018

Heavy Construction Work Chauffeurs	$ 46.0725
Light Construction Work Chauffeurs	$ 11.55

OVERTIME PAY
See (B, *B2, E, **I, P, ***R, ****U) on OVERTIME PAGE
(NOTE) PREMIUM PAY of 25% on straight time hours for NEW YORK STATE D.O.T. and or other GOVERMENTAL MANDATED off shift work.
Note: (B,E,P,T & *U) Apply to Heavy Construction.
Note: (B2,I,T & *U) Apply to Light Construction.
Note: (*U) Only applies after 8 hours work on holiday

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, *16, **25) on HOLIDAY PAGE
NOTE:(*16) Paid at Double if Worked. (**25) Paid at Double if Worked.

4-282

Welder 11/01/2018

JOB DESCRIPTION Welder **DISTRICT** 1

ENTIRE COUNTIES
Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES
Per hour 07/01/2018

Welder: To be paid the same rate of the mechanic performing the work.*

*EXCEPTION: If a specific welder certification is required, then the 'Certified Welder' rate in that trade tag will be paid.

OVERTIME PAY

HOLIDAY

1-As Per Trade

Overtime Codes

Following is an explanation of the code(s) listed in the OVERTIME section of each classification contained in the attached schedule. Additional requirements may also be listed in the HOLIDAY section.

NOTE: Supplemental Benefits are 'Per hour worked' (for each hour worked) unless otherwise noted

(AA)	Time and one half of the hourly rate after 7 and one half hours per day
(A)	Time and one half of the hourly rate after 7 hours per day
(B)	Time and one half of the hourly rate after 8 hours per day
(B1)	Time and one half of the hourly rate for the 9th & 10th hours week days and the 1st 8 hours on Saturday. Double the hourly rate for all additional hours
(B2)	Time and one half of the hourly rate after 40 hours per week
(C)	Double the hourly rate after 7 hours per day
(C1)	Double the hourly rate after 7 and one half hours per day
(D)	Double the hourly rate after 8 hours per day
(D1)	Double the hourly rate after 9 hours per day
(E)	Time and one half of the hourly rate on Saturday
(E1)	Time and one half 1st 4 hours on Saturday; Double the hourly rate all additional Saturday hours
(E2)	Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
(E3)	Between November 1st and March 3rd Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather, provided a given employee has worked between 16 and 32 hours that week
(E4)	Saturday and Sunday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
(E5)	Double time after 8 hours on Saturdays
(F)	Time and one half of the hourly rate on Saturday and Sunday
(G)	Time and one half of the hourly rate on Saturday and Holidays
(H)	Time and one half of the hourly rate on Saturday, Sunday, and Holidays
(I)	Time and one half of the hourly rate on Sunday
(J)	Time and one half of the hourly rate on Sunday and Holidays
(K)	Time and one half of the hourly rate on Holidays
(L)	Double the hourly rate on Saturday
(M)	Double the hourly rate on Saturday and Sunday
(N)	Double the hourly rate on Saturday and Holidays
(O)	Double the hourly rate on Saturday, Sunday, and Holidays
(P)	Double the hourly rate on Sunday
(Q)	Double the hourly rate on Sunday and Holidays
(R)	Double the hourly rate on Holidays
(S)	Two and one half times the hourly rate for Holidays, if worked

(S1) Two and one half times the hourly rate the first 8 hours on Sunday or Holidays One and one half times the hourly rate all additional hours.

(T) Triple the hourly rate for Holidays, if worked

(U) Four times the hourly rate for Holidays, if worked

(V) Including benefits at SAME PREMIUM as shown for overtime

(W) Time and one half for benefits on all overtime hours.

(X) Benefits payable on Paid Holiday at straight time. If worked, additional benefit amount will be required for worked hours. (Refer to other codes listed.)

Holiday Codes

PAID Holidays:

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

OVERTIME Holiday Pay:

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays. The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Following is an explanation of the code(s) listed in the HOLIDAY section of each classification contained in the attached schedule. The Holidays as listed below are to be paid at the wage rates at which the employee is normally classified.

(1)	None
(2)	Labor Day
(3)	Memorial Day and Labor Day
(4)	Memorial Day and July 4th
(5)	Memorial Day, July 4th, and Labor Day
(6)	New Year's, Thanksgiving, and Christmas
(7)	Lincoln's Birthday, Washington's Birthday, and Veterans Day
(8)	Good Friday
(9)	Lincoln's Birthday
(10)	Washington's Birthday
(11)	Columbus Day
(12)	Election Day
(13)	Presidential Election Day
(14)	1/2 Day on Presidential Election Day
(15)	Veterans Day
(16)	Day after Thanksgiving
(17)	July 4th
(18)	1/2 Day before Christmas
(19)	1/2 Day before New Years
(20)	Thanksgiving
(21)	New Year's Day
(22)	Christmas
(23)	Day before Christmas
(24)	Day before New Year's
(25)	Presidents' Day
(26)	Martin Luther King, Jr. Day
(27)	Memorial Day
(28)	Easter Sunday

New York State Department of Labor - Bureau of Public Work
State Office Building Campus
Building 12 - Room 130
Albany, New York 12240

REQUEST FOR WAGE AND SUPPLEMENT INFORMATION

As Required by Articles 8 and 9 of the NYS Labor Law

Fax (518) 485-1870 or mail this form for new schedules or for determination for additional occupations.

This Form Must Be Typed

Submitted By: (Check Only One) ☐ Contracting Agency ☐ Architect or Engineering Firm ☐ Public Work District Office Date:

A. Public Work Contract to be let by: (Enter Data Pertaining to Contracting/Public Agency)

1. Name and complete address ☐ (Check if new or change)

Telephone: ( ) Fax: ( )
E-Mail:

2. NY State Units (see Item 5)

- ☐ 01 DOT
- ☐ 02 OGS
- ☐ 03 Dormitory Authority
- ☐ 04 State University Construction Fund
- ☐ 05 Mental Hygiene Facilities Corp.
- ☐ 06 OTHER N.Y. STATE UNIT
- ☐ 07 City
- ☐ 08 Local School District
- ☐ 09 Special Local District, i.e., Fire, Sewer, Water District
- ☐ 1O Village
- ☐ 11 Town
- ☐ 12 County
- ☐ 13 Other Non-N.Y. State (Describe)

3. SEND REPLY TO ☐ check if new or change)
Name and complete address:

Telephone:( ) Fax: ( )
E-Mail:

4. SERVICE REQUIRED. Check appropriate box and provide project information.

- ☐ New Schedule of Wages and Supplements.
  APPROXIMATE BID DATE :
- ☐ Additional Occupation and/or Redetermination

PRC NUMBER ISSUED PREVIOUSLY FOR THIS PROJECT :

OFFICE USE ONLY

B. PROJECT PARTICULARS

5. Project Title _____

Description of Work _____

Contract Identification Number _____

Note: For NYS units, the OSC Contract No. _____

6. Location of Project:
Location on Site _____

Route No/Street Address _____

Village or City _____

Town _____

County _____

7. Nature of Project - Check One:

- ☐ 1. New Building
- ☐ 2. Addition to Existing Structure
- ☐ 3. Heavy and Highway Construction (New and Repair)
- ☐ 4. New Sewer or Waterline
- ☐ 5. Other New Construction (Explain)
- ☐ 6. Other Reconstruction, Maintenance, Repair or Alteration
- ☐ 7. Demolition
- ☐ 8. Building Service Contract

8. OCCUPATION FOR PROJECT :

- ☐ Construction (Building, Heavy Highway/Sewer/Water)
- ☐ Tunnel
- ☐ Residential
- ☐ Landscape Maintenance
- ☐ Elevator maintenance
- ☐ Exterminators, Fumigators
- ☐ Fire Safety Director, NYC Only
- ☐ Guards, Watchmen
- ☐ Janitors, Porters, Cleaners, Elevator Operators
- ☐ Moving furniture and equipment
- ☐ Trash and refuse removal
- ☐ Window cleaners
- ☐ Other (Describe)

9. Has this project been reviewed for compliance with the Wicks Law involving separate bidding? YES ☐ NO ☐

10. Name and Title of Requester

Signature

SEE PAGE TWO FOR LAWS RELATING TO PUBLIC WORK CONTRACTS

NEW YORK STATE DEPARTMENT OF LABOR
Bureau of Public Work - Debarment List

LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK CONTRACT

Under Article 8 and Article 9 of the NYS Labor Law, a contractor, sub-contractor and/or its successor shall be debarred and ineligible to submit a bid on or be awarded any public work or public building service contract/sub-contract with the state, any municipal corporation or public body for a period of five (5) years from the date of debarment when:

- Two (2) final determinations have been rendered within any consecutive six-year (6) period determining that such contractor, sub-contractor and/or its successor has WILLFULLY failed to pay the prevailing wage and/or supplements;
- One (1) final determination involves falsification of payroll records or the kickback of wages and/or supplements.

The agency issuing the determination and providing the information, is denoted under the heading 'Fiscal Officer'. DOL = New York State Department of Labor; NYC = New York City Comptroller's Office; AG = New York State Attorney General's Office; DA = County District Attorney's Office.

Debarment Database: To search for contractors, sub-contractors and/or their successors debarred from bidding or being awarded any public work contract or subcontract under NYS Labor Law Articles 8 and 9, or under NYS Workers' Compensation Law Section 141-b, access the database at this link: https://applications.labor.ny.gov/EDList/searchPage.do

For inquiries where WCB is listed as the "Agency", please call 1-866-546-9322

NYSDOL Bureau of Public Work Debarment List 11/07/2018

Article 8

AGENCY	Fiscal Officer	FEIN	EMPLOYER NAME	EMPLOYER DBA NAME	ADDRESS	DEBARMENT START DATE	DEBARMENT END DATE
DOL	DOL	*****0996	A-1 CONSTRUCTION & RENOVATION INC		1973 81ST ST - SUITE A-5 BROOKLYN NY 11214	01/08/2015	01/08/2020
DOL	NYC		ABDUL KARIM		C/O NORTH AMERICAN IRON W 1560 DECATUR STREETRIDGEWOOD NY 11385	05/15/2015	05/15/2020
DOL	DOL	*****8018	ACCURATE MECHANICAL LLC		9547 BUSTLETON AVENUE PHILADELPHIA PA 19115	02/05/2014	02/05/2019
DOL	DOL		ACCURATE MECHANICAL OF PHILADELPHIA LLC		9547 BUSTLETON AVENUE PHILADELPHIA PA 19115	02/05/2014	02/05/2019
DOL	DOL	*****3344	ACT INC		6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	NYC		ADRIANA SELA	C/O COLONIAL ROOFING COMPANY INC	247 48TH STREET BROOKLYN NY 11220	02/05/2014	02/05/2019
DOL	DOL	*****1687	ADVANCED SAFETY SPRINKLER INC		261 MILL ROAD P O BOX 296EAST AURORA NY 14052	07/29/2015	07/29/2020
DOL	NYC	*****6775	ADVENTURE MASONRY CORP.		1535 RICHMOND AVENUE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	DOL		AJ TORCHIA		10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	DOL	*****3344	ALL CATASTROPHE CONSTRUCTION TEAM INC	ACT INC	6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	DOL	*****8740	ALLSTATE ENVIRONMENTAL CORP		C/O JOSE MONTAS 27 BUTLER PLACEYONKERS NY 10710	03/18/2011	03/19/2020
DOL	DOL		AMADEO J TORCHIA	TORCHIA'S HOME IMPROVEMEN T	10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021
DOL	NYC		ANISUL ISLAM		C/O RELIANCE GENERAL CONS 644 OCEAN PARKWAYBROOKLYN NY 11230	09/02/2015	09/02/2020
DOL	DOL	*****7004	ANNEX CONTRACTING LTD		3005 WYNSUM AVENUE MERRICK NY 11566	08/18/2014	08/18/2019
DOL	DOL	*****7004	ANNEX GENERAL CONTRACTING INC		3005 WYNSUM AVENUE MERRICK NY 11566	08/18/2014	08/18/2019
DOL	DA		ANTHONY CARDINALE		58-48 59TH STREET MASPETH NY 11378	05/16/2012	05/08/2020
DOL	DOL		ANTHONY J MINGARELLI JR		C/O T & T CONCRETE INC 2560 HAMBURG TURNPIKELACKAWANNA NY 14218	07/08/2015	07/08/2020
DOL	DOL		ANTHONY PERGOLA		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10323	01/23/2017	01/23/2022
DOL	DOL		ANTONIO ESTIVEZ		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****3020	APCO CONTRACTING CORP		24 SOUTH MARYLAND AVENUE PORT WASHINGTON NY 11050	09/24/2012	09/02/2020
DOL	DOL	*****3219	APOLLO CONSTRUCTION SERVICES CORP	APOLLO PAINTING CO	157 TIBBETTS ROAD YONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL		APOLLO PAINTING CO		157 TIBBETTS ROAD YONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL	*****3295	APOLLO PAINTING CORP		3 ALAN B SHEPART PLACE YONKERS NY 10705	03/12/2014	03/12/2019
DOL	AG	*****0194	APPLIED CONSTRUCTION INC		46 RUGBY ROAD WESTBURY NY 11590	11/20/2013	11/20/2018
DOL	NYC	*****8403	AQUA JET PAINTING CORP		10 VIKING DRIVE WEST ISLIP NY 11795	04/16/2014	04/16/2019
DOL	NYC	*****9232	ARKAY CONSTRUCTION INC		102-104 GREYLOCK AVENUE BELLEVILLE NJ 07109	07/15/2015	07/15/2020
DOL	DOL	*****3953	ASCAPE LANDSCAPE & CONSTRUCTION CORP		634 ROUTE 303 BLAUVELT NY 10913	07/26/2012	11/19/2018
DOL	NYC	*****4779	ASTORIA GENERAL CONTRACTING CORP		35-34 31ST STREET LONG ISLAND CITY NY 11106	09/02/2015	09/02/2020
DOL	NYC	*****7217	ASTRO COMMUNICATIONS OF NY CORP		79 ALEXANDER AVE- STE 36A BRONX NY 10454	10/30/2015	10/30/2020
DOL	NYC	*****6046	ATLANTIC SUN CONTRUCTION CORP		58-46 59TH AVENUE MASPETH NY 11378	05/08/2015	05/08/2020
DOL	NYC	*****6683	ATLAS RESTORATION CORP.		35-12 19TH AVENUE ASTORIA NY 11105	08/02/2017	08/02/2022

DOL	NYC		AUDLEY O'BRIEN		1273 NORTH AVENUE/#1 CP NEW ROCHELLE NY 10804	04/07/2015	04/07/2020
DOL	DOL		AVIS R HILL		3510 HICKORY WALK LANE ELLENWOOD GA 32094	01/22/2015	01/22/2020
DOL	AG		AVTAR SINGH		116-24 127TH STREET SOUTH OZONE PARK NY 11420	12/22/2015	12/22/2020
DOL	AG		BALDEV SINGH		116-24 127TH STREET SOUTH OZONE PARK NY 11420	12/22/2015	12/22/2020
DOL	DOL		BARBARA CASSIDY		7 BLENIS PLACE VALHALLA NY 10595	04/02/2015	04/02/2020
DOL	DOL		BARRY KINNEY		6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	NYC	*****3915	BEACON RESTORATION INC		SUITE B-8 782 PELHAM PARKWAY SOUTHBRONX NY 10462	04/21/2016	04/21/2021
DOL	DOL		BEVERLY F WILLIAMS		1238 PRESIDENT STREET BROOKLYN NY 11225	11/18/2013	11/18/2018
DOL	DOL		BIAGIO CANTISANI			06/12/2018	06/12/2023
DOL	DOL	*****8551	BRANDY'S MASONRY		216 WESTBROOK STREET P O BOX 304SAYRE PA 18840	08/09/2016	08/09/2021
DOL	NYC	*****6555	BROOKLYN WELDING CORP		1273 NORTH AVENUE/ #1 CP NEW ROCHELLE NY 10804	04/07/2015	04/07/2020
DOL	DOL	*****1449	BRRESTORATION NY INC		140 ARCADIA AVENUE OSWEGO NY 13126	09/12/2016	09/12/2021
DOL	DOL		BRUCE MORSEY		C/O KENT HOLLOW SIDING LL 29A BRIDGE STREETNEW MILFORD CT 06776	01/15/2016	01/15/2021
DOL	DOL		BRUCE P. NASH JR.		5841 BUTTERNUT ROAD EAST SYRACUSE NY 13057	09/12/2018	09/12/2023
DOL	DOL	*****6156	C & J LANDSCAPING & MAINTENANCE INC		520 PINE HILL ROAD CHESTER NY 10940	06/23/2014	06/23/2019
DOL	DOL	*****8809	C.B.E. CONTRACTING CORPORATION		310 MCGUINESS BLVD GREENPOINT NY 11222	03/07/2017	03/07/2022
DOL	DOL		CANTISANI & ASSOCIATES LTD		442 ARMONK RD MOUNT KISCSO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CANTISANI HOLDING LLC			06/12/2018	06/12/2023
DOL	DOL		CARIBBEAN POOLS		C/O DOUGLAS L MALARKEY 64 VICTORIA DRIVEBINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****3812	CARMODY "2" INC			06/12/2018	06/12/2023
DOL	DOL	*****1143	CARMODY BUILDING CORP	CARMODY CONTRACTIN G AND CARMODY CONTRACTIN G CORP.	442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY CONCRETE CORPORATION			06/12/2018	06/12/2023
DOL	DOL		CARMODY ENTERPRISES, LTD.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY INC		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****3812	CARMODY INDUSTRIES INC			06/12/2018	06/12/2023
DOL	DOL		CARMODY MAINTENANCE CORPORATION		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		CARMODY MASONRY CORP		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	NYC	*****9172	CASSIDY EXCAVATING INC		14 RAILROAD AVENUE VALHALLA NY 10595	05/15/2014	04/02/2020
DOL	DOL	*****6745	CATSKILL FENCE INSTALLATIONS INC		5445 ROUTE 32 CATSKILL NY 12414	08/22/2014	08/22/2019
DOL	DOL	*****8809	CBE CONTRACTING CORP		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	AG		CESAR J. AGUDELO		81-06 34TH AVENUE APT. 6EJACKSON HEIGHTS NY 11372	02/07/2018	02/07/2023
DOL	DOL	*****7655	CHAMPION CONSTRUCTION SERVICES CORP		2131 SCHENECTADY AVENUE BROOKLYN NY 11234	11/18/2015	11/18/2020
DOL	NYC		CHARLES CASSIDY JR		14 RAILROAD AVENUE VALHALLA NY 10595	05/15/2014	04/02/2020
DOL	DOL		CHARLES ZIMMER JR		216 WESTBROOK STREET P O BOX 304SAYRE PA 18840	08/09/2016	08/09/2021

DOL	DOL		CHRISTINE J HEARNE		C/O CJ-HEARNE CONSTRUCTIO 131 PONCE DE LEON AVE NEATLANTA GA 30308	12/01/2015	12/01/2020
DOL	DOL		CHRISTOPHER J MAINI		19 CAITLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	DOL	*****3360	CITY LIMITS GROUP INC		2279 HOLLERS AVENUE BRONX NY 10475	01/07/2014	06/23/2019
DOL	DOL	*****0671	CJ-HEARNE CONSTRUCTION CO		SUITE 204 131 PONCE DE LEON AVENUEATLANTA GA 30308	12/01/2015	12/01/2020
DOL	NYC	*****2905	COLONIAL ROOFING COMPANY INC		247 48TH STREET BROOKLYN NY 11220	02/05/2014	02/05/2019
DOL	NYC	*****3182	COLORTECH INC		5990 58TH AVENUE MASPETH NY 11378	11/18/2013	11/18/2018
DOL	DOL	*****2703	CONKLIN'S TECH-MECHANICAL INC		5 PARKER AVENUE POUGHKEEPSIE NY 12601	03/25/2014	03/25/2019
DOL	DOL	*****1927	CONSTRUCTION PARTS WAREHOUSE, INC.	CPW	5841 BUTTERNUT ROAD EAST SYRACUSE NY 13057	09/12/2018	09/12/2023
DOL	NYC	*****4468	CRAFT CONTRACTING GROUP INC		3256 BRUNER AVENUE BRONX NY 10469	07/29/2014	07/29/2019
DOL	NYC	*****8507	CRAFT FENCE INC		3256 BRUNER AVENUE BRONX NY 10469	07/29/2014	07/29/2019
DOL	NYC	*****2164	CREATIVE TRUCKING INC		58-83 54TH STREET MASPETH NY 11378	02/26/2016	02/26/2021
DOL	DOL	*****7761	D L MALARKEY CONSTRUCTION		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****7888	D L MALARKEY CONSTRUCTION INC		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****5629	DAKA PLUMBING AND HEATING LLC		2561 ROUTE 55 POUGHQUAG NY 12570	02/19/2016	02/19/2021
DOL	DOL		DANICA IVANOSKI		61 WILLETT ST. PASSAIC NJ 07503	10/26/2016	10/26/2021
DOL	DOL		DARYL T RIEKS		C/O RIEKS CONTRACTING LLC 4804 GAHWILER ROADAUBURN NY 13021	05/01/2015	05/01/2020
DOL	NYC	*****7707	DASSLE CONTRACTING INC		213-37 39TH AVE/SUITE 120 BAYSIDE NY 11360	05/08/2015	05/08/2020
DOL	DOL		DAVID MARTINEZ		C/O EMPIRE TILE INC 6 TREMONT COURTHUNTINGTON STATION NY 11746	03/08/2016	03/08/2021
DOL	NYC		DAWN AVILA AKA DAWN BECHTOLD		1ST FLOOR STORE FRONT 88-10 LITTLE NECK PARKWAYFLORAL PARK NY 11001	06/24/2014	06/24/2019
DOL	NYC		DAWN BECHTOLD AKA DAWN AVILA		1ST FLOOR STORE FRONT 88-10 LITTLE NECK PARKWAYFLORAL PARK NY 11001	06/24/2014	06/24/2019
DOL	DOL		DEBBIE STURDEVANT		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	AG		DEBRA MARTINEZ		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
DOL	NYC	*****3865	DECOMA BUILDING CORPORATION		134 EVERGREEN PL/STE 101 EAST ORANGE NJ 07018	12/30/2013	12/30/2018
DOL	DOL		DEDA GAZIVODAN		C/O DAKA PLUMBING AND H 2561 ROUTE 55POUGHQUAG NY 12570	02/19/2016	02/19/2021
DOL	DOL		DENNIS SCHWANDTNER		C/O YES SERVICE AND REPAI 145 LODGE AVEHUNTINGTON STATION NY 11476	08/09/2016	08/09/2021
DOL	DOL	*****9868	DESANTIS ENTERPRISES		161 OSWEGO RIVER ROAD PHOENIX NY 13135	09/24/2013	11/18/2018
DOL	DOL		DF CONTRACTORS OF ROCHESTER, INC.		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	DOL		DF CONTRACTORS, INC.		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	DOL	*****9252	DI BERNARDO TILE AND MARBLE CO INC		15 WALKER WAY ALBANY NY 12205	03/21/2014	03/21/2019
DOL	NYC		DIMITRIOS KOUTSOUKOS		C/O ASTORIA GENERAL CONTR 35-34 31ST STREETLONG ISLAND CITY NY 11106	09/02/2015	09/02/2020
DOL	NYC		DIMITRIOS TSOUMAS		35-12 19TH AVENUE ASTORIA NY 11105	08/02/2017	08/02/2022
DOL	DOL	*****3242	DONALD R. FORSAY	DF LAWN SERVICE	1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022

DOL	DOL		DONALD R. FORSAY		1835 DAANSEN RD. PALMYRA NY 14522	05/16/2017	05/16/2022
DOL	DOL		DORIS SKODA		C/O APCO CONTRACTING CORP 24 SOUTH MARYLAND AVENUEPORT WASHINGTON NY 11050	09/24/2012	09/02/2020
DOL	NYC	*****7404	DOSANJH CONSTRUCTION CORP		9439 212TH STREET QUEENS VILLAGE NY 11428	02/25/2016	02/25/2021
DOL	DOL		DOUGLAS L MALARKEY	MALARKEY CONSTRUCTION	64 VICTORIA DRIVE B INGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****6982	DUFOUR GROUP INC	DUFOUR MASONRY	353 WEST 56TH STREET #7M NEW YORK NY 10019	06/10/2014	06/10/2019
DOL	DOL		DUFOUR MASONRY		353 WEST 56TH ST #7M NEW YORK NY 10019	06/10/2014	06/10/2019
DOL	DOL		DUFOUR MASONRY & RESTORATION INC		123 ALBANY NY	06/10/2014	06/10/2019
DOL	DOL	*****5840	DYNA CONTRACTING INC		363 88TH STREET BROOKLYN NY 11209	11/18/2013	11/18/2018
DOL	DOL		E C WEBB		6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	DOL		EARL L WILSON	WILSON BROTHER DRYWALL CONTRACTORS	36 ABERSOLD STREET ROCHESTER NY 14621	08/31/2015	08/31/2020
DOL	DOL	*****1496	EAST COAST DRYWALL INC		1238 PRESIDENT STREET BROOKLYN NY 11225	11/18/2013	11/18/2018
DOL	DOL		EAST COAST PAVING		2238 BAKER RD GILLETT PA 16923	03/12/2018	03/12/2023
DOL	NYC		EDWARD MENKEN		C/O AQUA JET PAINTING 10 VIKING DRIVEWEST ISLIP NY 11795	04/16/2014	04/16/2019
DOL	NYC	*****0900	EF PRO CONTRACTING INC		147 BROOME AVENUE ATLANTIC BEACH NY 11509	03/03/2014	03/03/2019
DOL	NYC		EFSTRATIOS BERNARDIS		23-73 48TH STREET LONG ISLAND CITY NY 11103	04/24/2014	04/24/2019
DOL	DOL		ELIZABETH RAMADANI		C/O RAMADA CONSTRUCTION 80 SAVO LOOPSTATEN ISLAND NY 10309	01/07/2014	01/07/2019
DOL	DOL		ELLEN DESANTIS	DESANTIS ENTERPRISES	161 OSWEGO RIVER ROAD PHOENIX NY 13135	09/24/2013	11/18/2018
DOL	DOL	*****0780	EMES HEATING & PLUMBING CONTR		5 EMES LANE MONSEY NY 10952	01/20/2002	01/20/3002
DOL	AG		EMILIO FRANZA		90 JUNIUS STREET BROOKLYN NY 11212	01/23/2014	01/23/2019
DOL	DOL		EMPIRE CONCRETE SERVICES LLC		101 SULLYS TRAIL/SUITE 20 PITTSFORD NY 14534	11/18/2013	01/07/2019
DOL	DOL	*****0511	EMPIRE CONCRETE SYSTEMS LLC		101 SULLYS TRAIL/ SUITE 2 PITTSFORD NY 14534	11/18/2013	01/07/2019
DOL	DOL	*****2353	EMPIRE CONSTRUCTORS LLC		101 SULLYS TRAIL/SUITE 20 PITTSFORD NY 14534	11/18/2013	01/07/2019
DOL	DOL		EMPIRE PRECAST LLC		101 SULLYS TRAIL/SUITE 20 PITTSFORD NY 14534	11/18/2013	01/07/2019
DOL	DOL	*****3270	EMPIRE TILE INC		6 TREMONT COURT HUNTINGTON STATION NY 11746	03/08/2016	03/08/2021
DOL	NYC		EVERTON CARLESS		134 EVERGREEN PL/STE 101 EAST ORANGE NJ 07018	12/30/2013	12/30/2018
DOL	DOL	*****7403	F & B PAINTING CONTRACTING INC		2 PARKVIEW AVENUE HARRISON NY 10604	09/26/2016	09/26/2021
DOL	DOL		F KALAFATIS		2279 HOLLERS AVENUE BRONX NY 10475	01/07/2014	06/23/2019
DOL	DOL		FANTASTIC PAINTING		493 LANSING ROAD FULTONVILLE NY 12072	11/18/2013	11/18/2018
DOL	DOL		FAY MATTHEW		C/O CHAMPION CONSTRUCTION 2131 SCHENECTADY AVENUEBROOKLYN NY 11234	11/18/2015	11/18/2020
DOL	DOL		FAZIA GINA ALI-MOHAMMED	C/O CHAMPION CONSTRUCTION	2131 SCHENECTADY AVENUE BROOKLYN NY 11234	11/18/2015	11/18/2020
DOL	DOL		FRAN MICELI		2279 HOLLERS AVENUE BRONX NY 10475	01/07/2014	06/23/2019
DOL	DOL		FRANCES KALAFATIS		2279 HOLLERS AVENUE BRONX NY 10475	01/07/2014	06/23/2019

DOL	DOL		FRANCES KALAFATIS-MICELI		2279 HOLLERS AVENUE BRONX NY 10475	01/07/2014	06/23/2019
DOL	DOL		FRANK BENEDETTO		19 CATLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	DOL		FRANK BENEDETTO		C/O F & B PAINTING CONTRA 2 PARKVIEW AVENUEHARRISON NY 10604	09/26/2016	09/26/2021
DOL	DOL	*****4722	FRANK BENEDETTO AND CHRISTOPHER J MAINI	B & M CONCRETE	19 CAITLIN AVE JAMESTOWN NY 14701	09/17/2018	09/17/2023
DOL	DOL		FRANK DEMARTINO		101-61 99TH STREET OZONE PARK NY 11416	02/15/2017	02/15/2022
DOL	DOL		FRANK DEMARTINO		101-61 99TH STREET OZONE PARK NY 11416	02/15/2017	02/15/2022
DOL	DOL		FRANK J MERCANDO		134 MURRAY AVENUE YONKERS NY 10704	12/11/2009	02/03/2019
DOL	DOL	*****2724	FRESH START PAINTING CORP		157 TIBBETS ROAD YONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL		G FUCCI CONSTRUCTION SERVICES		3 ALAN B SHEPARD PLACE YONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL	*****6767	G FUCCI PAINTING INC		C/O SPIEGEL & UTRERA 1 MAIDEN LANE - 5TH FLNEW YORK NY 10038	03/12/2014	03/12/2019
DOL	DOL	*****4546	GAF PAINTING LLC		157 TIBBETS ROAD YONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL		GALINDA ROTENBERG		C/O GMDV TRANS INC 67-48 182ND STREETFRESH MEADOWS NY 11365	06/24/2016	06/24/2021
DOL	DOL		GARDEN STATE PAINTING		157 TIBBETTS ROAD YONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL		GEORGE DI BERNARDO		C/O DI BERNARDO TILE 15 WALKER WAYALBANY NY 12205	03/21/2014	03/21/2019
DOL	DA		GEORGE LUCEY		150 KINGS STREET BROOKLYN NY 11231	01/19/1998	01/19/2998
DOL	DOL	*****5674	GMDV TRANS INC		67-48 182ND STREET FRESH MEADOWS NY 11365	06/24/2016	06/24/2021
DOL	NYC		GREAT ESTATE CONSTRUCTION, INC.		327 STAGG ST BROOKLYN NY 11206	10/10/2017	10/10/2022
DOL	DOL		GREGORY A FUCCI		C/O PAF PAINTING SERVICES 157 TIBBETTS ROADYONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL		GREGORY FUCCI JR		C/O APOLLO CONSTRUCTION 157 TIBBETTS ROADYONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL		GREGORY S. OLSON		P.O BOX 100 200 LATTA BROOK PARKHORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	NYC	*****0346	H N H CONTRACTORS CORP		4558 BROADWAY # 6 NEW YORK NY 10040	08/04/2014	08/04/2019
DOL	NYC		HAMEEDUL HASAN		240 HOME STREET TEANECK NJ 07666	08/04/2014	08/04/2019
DOL	NYC		HARMEL SINGH		15 CLINTON LANE HICKSVILLE NY 11801	02/25/2016	02/25/2021
DOL	NYC		HAROLD KUEMMEL		58-83 54TH STREET MASPETH NY 11378	02/26/2016	02/26/2021
DOL	AG		HARVINDER SINGH PAUL		90 JUNIUS STREET BROOKLYN NY 11212	01/23/2014	01/23/2019
DOL	DOL		HENRY VAN DALRYMPLE		2663 LANTERN LANE ATLANTA GA 30349	12/01/2015	12/01/2020
DOL	DOL	*****6370	HILLIANO CONSTRUCTION & ELECTRICAL INC		354 MAGNOLIA STREET ROCHESTER NY 14611	01/22/2015	01/22/2020
DOL	DOL	*****8282	IDEMA DEVELOPMENT INC		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL	*****8282	IDEMA GENERAL CONTRACTORS INC		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL	*****7001	INTEGRATED CONSTRUCTION & POWER SYSTEMS INC		SUITE 100 2105 W GENESEE STREETSYRACUSE NY 13219	01/06/2016	01/06/2021
DOL	DOL	*****5131	INTEGRITY MASONRY, INC.	M&R CONCRETE	722 8TH AVE WATERVLIET NY 12189	06/05/2018	06/05/2023
DOL	AG		J A M CONSTRUCTION CORP		SUITE 125 265 SUNRISE HIGHWAYROCKVILLE CENTRE NY 10457	04/07/2016	04/07/2021
DOL	DOL	*****7598	J M RICH LLC		P O BOX 268 STILLWATER NY 12170	09/16/2013	03/21/2019

DOL	DOL	*****3478	J N P CONSTRUCTION CORP		50 LOUIS COURT P O BOX 1907SOUTH HACKENSACK NY 07606	03/21/2014	03/21/2019
DOL	DOL		J N RICH LLC		P O BOX 268 STILLWATER NY 12170	09/16/2013	03/21/2019
DOL	DOL	*****4910	J V MAGIC TOUCH CORPORATION		94-25 57TH AVENUE, APT 5G ELMHURST NY 11373	01/12/2015	01/12/2020
DOL	DOL		J.A. HIRES CADWALLADER		P.O BOX 100 200 LATTA BROOK PARKHORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL		JAMES B RHYNDERS		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL		JAMES BOYCE		C/O EMPIRE CONCRETE SYST 101 SULLYS TRAIL/SUITE 20PITTSFORD NY 14534	11/18/2013	01/07/2019
DOL	DOL		JAMES C. DELGIACCO		722 8TH AVE WATERVLIET NY 12189	06/05/2018	06/05/2023
DOL	DOL		JAMES E RHYNDERS		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	AG		JAMES FALCONE		SUITE 125 265 SUNRISE HIGHWAYROCKVILLE CENTRE NY 10457	04/07/2016	04/07/2021
DOL	DOL		JAMES LIACONE		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL		JAMES RACHEL		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL		JAMES RHYNDERS SR		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL		JAMES SICKAU		3090 SHIRLEY ROAD NORTH COLLINS NY 14111	04/19/2011	07/08/2020
DOL	DOL		JASON M RICH		P O BOX 268 STILLWATER NY 12170	09/16/2013	03/21/2019
DOL	DOL		JASON W MILLIMAN		C/O ROCHESTER ACOUSTICAL P O BOX 799HILTON NY 14468	02/19/2016	02/19/2021
DOL	DOL	*****5368	JCH MASONRY & LANDSCAPING INC.		35 CLINTON AVE OSSINING NY 10562	09/12/2018	09/12/2023
DOL	DOL		JEFF P BRADLEY		520 PINE HILL ROAD CHESTER NY 10940	06/23/2014	06/23/2019
DOL	NYC		JEFFREY CASSIDY		14 RAILROAD AVENUE VALHALLA NY 10595	05/15/2014	04/02/2020
DOL	DOL		JEROME LACITIGNOLA		C/O CATSKILL FENCE INSTAL 5445 ROUTE 32 CATSKILL NY 12414	08/22/2014	08/22/2019
DOL	DOL		JESSICA WHITESIDE		C/O BRRESTORATION NY INC 140 ARCADIA AVENUEOSWEGO NY 13126	09/12/2016	09/12/2021
DOL	AG		JOHN ANTHONY MASSINO		36-49 204TH STREET BAYSIDE NY 11372	02/07/2018	02/07/2023
DOL	DOL		JOHN F. CADWALLADER		200 LATTA BROOK PARK HORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL	*****4612	JOHN F. CADWALLADER, INC.	THE GLASS COMPANY	P.O BOX 100 200 LATTA BROOK PARKHORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	AG	*****0600	JOHNCO CONTRACTING, INC.		36-49 204TH STREET BAYSIDE NY 11372	02/07/2018	02/07/2023
DOL	DOL		JON E DEYOUNG		261 MILL ROAD P O BOX 296EAST AURORA NY 14052	07/29/2015	07/29/2020
DOL	DOL		JORGE VILLALOBOS		94-25 57TH AVENUE - APT 5 ELMHURST NY 11373	01/12/2015	01/12/2020
DOL	DOL		JOSE CHUCHUCA		35 CLINTON AVE OSSINING NY 10562	09/12/2018	09/12/2023
DOL	DOL		JOSE MONTAS		27 BUTLER PLACE YONKERS NY 10710	03/18/2011	03/19/2020
DOL	AG		JOSEPH FALCONE		SUITE 125 265 SUNRISE HIGHWAYROCKVILLE CENTRE NY 10457	04/07/2016	04/07/2021
DOL	DOL	*****9273	JOSEPH M LOVETRO		P O BOX 812 BUFFALO NY 14220	08/09/2016	08/09/2021
DOL	NYC		JOSEPH MARTINO		1535 RICHMOND AVENUE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	DOL		JOSHUA DEBOWSKY		9547 BUSTLETON AVENUE PHILADELPHIA PA 19115	02/05/2014	02/05/2019
DOL	DOL		JUANA MARTINEZ		C/O LEAD CONSTRUCTION 27 BUTLER PLACEYONKERS NY 10710	03/19/2015	03/19/2020

DOL	DOL	*****4340	JUBCO SITE DEVELOPMENT LLC		462 LAKEVIEW AVENUE VALHALLA NY 10595	12/16/2013	12/16/2018
DOL	DOL		JULIUS AND GITA BEHREND		5 EMES LANE MONSEY NY 10952	11/20/2002	11/20/3002
DOL	DOL	*****5062	K R F SITE DEVELOPMENT INC		375 LAKE SHORE DRIVE PUTNAM VALLEY NY 10579	01/23/2017	01/23/2022
DOL	NYC		KATHLEEN SELA	C/O COLONIAL ROOFING COMPANY INC	247 48TH STREET BROOKLYN NY 11220	02/05/2014	02/05/2019
DOL	DOL		KATIE BURDICK		2238 BAKER RD GILLETT PA 16923	03/12/2018	03/12/2023
DOL	DOL		KENNETH FIORENTINO		375 LAKE SHORE DRIVE PUTNAM VALLEY NY 10579	01/23/2017	01/23/2022
DOL	DOL	*****9732	KENT HOLLOW SIDING LLC		29A BRIDGE STREET NEW MILFORD CT 06776	01/15/2016	01/15/2021
DOL	DOL		KEVIN BABCOCK JR		P O BOX 46 THOMPSON RIDGE NY 10985	08/22/2014	08/22/2019
DOL	DOL		KEVIN M BABCOCK		P O BOX 46 THOMPSON RIDGE NY 10985	08/22/2014	08/22/2019
DOL	DOL		KIM SOROCENSKI		C/O SOLUTION MATTERS INC 198 NORWOOD ROADPORT JEFFERSON NY 11776	11/19/2015	11/19/2020
DOL	DOL	*****3490	L & M CONSTRUCTION/DRYWALL INC.		1079 YONKERS AVE YONKERS NY 10704	08/07/2018	08/07/2023
DOL	DA	*****8816	LAKE CONSTRUCTION AND DEVELOPMENT CORPORATION		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL	*****6224	LAKESIDE FIRE SPRINKLERS LLC		125 CHAUTAUQUA AVENUE LAKEWOOD NY 14750	06/24/2015	06/24/2020
DOL	AG	*****4643	LALO DRYWALL, INC.		221 OLD FORD ROAD NEW PLATZ NY 12561	05/20/2016	05/20/2021
DOL	DOL	*****4505	LARAPINTA ASSOCIATES INC		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	DOL		LAVERN GLAVE		161 ROBYN RD MONROE NY 10950	09/15/2014	09/15/2019
DOL	DOL		LAVERN GLAVE		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	DOL		LAWRENCE J RUGGLES		P O BOX 371 ROUND LAKE NY 12151	05/12/2014	05/12/2019
DOL	DOL	*****1364	LEAD CONSTRUCTION SERVICES INC		3 ALAN B SHEPARD PLACE YONKERS NY 10705	03/19/2015	03/19/2020
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	06/24/2016	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	06/24/2016	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	01/17/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL	*****4388	LEN.J CONSTRUCTION, LLC		PO BOX 10007 ALBANY NY 12201	08/14/2017	09/19/2022
DOL	AG		LEONID FRIDMAN		APT 5 200 BRIGHTON, 15TH STBROOKLYN NY 11235	01/23/2014	01/23/2019
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	09/19/2017	09/19/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	08/14/2017	08/14/2022
DOL	DOL		LEROY NELSON JR		PO BOX 10007 ALBANY NY 12201	01/17/2017	09/19/2022
DOL	DOL		LINDSEY R CRILL		143 FILLMORE AVENUE BUFFALO NY 14210	01/08/2015	01/08/2020
DOL	DA	*****4460	LONG ISLAND GLASS & STOREFRONTS, LLC		4 MANHASSET TRL RIDGE NY 11961	09/06/2018	09/06/2023

DOL	AG	*****4216	LOTUS-C CORP.		81-06 34TH AVENUE APT. 6EJACKSON HEIGHTS NY 11372	02/07/2018	02/07/2023
DOL	AG		LUIS MARTINEZ	LALO DRYWALL	211 MAIN ST. NEW PALTZ NY 12561	05/20/2016	05/20/2021
DOL	DOL		M ANVER BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	AG	*****6957	M B DIN CONSTRUCTION INC		8831 20TH AVENUE/SUITE 6E BROOKLYN NY 11214	11/17/2015	11/17/2020
DOL	NYC	*****6317	M S QUALITY CONSTRUCTION LLC		27 MAPLEWOOD AVENUE COLONIA NJ 07067	02/04/2015	02/04/2020
DOL	DOL		M. ANVER BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	NYC		MACIEJ SONTOWSKI		27 MAPLEWOOD AVENUE COLONIA NJ 07067	02/04/2015	02/04/2020
DOL	NYC	*****9590	MACK GLASSNAUTH IRON WORKS INC		137 LIBERTY AVENUE BROOKLYN NY 11212	12/21/2015	12/21/2020
DOL	NYC	*****3141	MACKEY REED ELECTRIC INC		1ST FLOOR STORE FRONT 88-10 LITTLE NECK PARKWAYFLORAL PARK NY 11001	06/24/2014	06/24/2019
DOL	DOL	*****1784	MADISON AVE CONSTRUCTION CORP		39 PENNY STREET WEST ISLIP NY 11795	11/02/2016	11/02/2021
DOL	DOL		MALARKEY'S BAR & GRILL LLC		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL	*****0705	MALARKEY'S PUB & GRUB LLC		64 VICTORIA DRIVE BINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DA		MANUEL P TOBIO		150 KINGS STREET BROOKLYN NY 14444	08/19/1998	08/19/2998
DOL	DA		MANUEL TOBIO		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL		MARIACHI'S PIZZERIA		C/O DOUGLAS L MALARKEY 64 VICTORIA DRIVEBINGHAMTON NY 13904	02/04/2016	02/04/2021
DOL	DOL		MARK MIONIS		6409 LAND O LAKES BLVD LAND O LAKES FL 34638	11/10/2015	11/10/2020
DOL	DOL		MARVIN A STURDEVANT		29 MAPLEWOOD DRIVE BINGHAMTON NY 13901	02/21/2017	02/21/2022
DOL	DOL		MASONRY CONSTRUCTION, INC.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****3333	MASONRY INDUSTRIES, INC.		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL		MATTHEW IDEMA GENERAL CONTRACTORS INC		91 COLLEGE AVENUE POUGHKEEPSIE NY 12603	12/04/2015	12/04/2020
DOL	DOL		MAURICE GAWENO		442 ARMONK RD MOUNT KISCO NY 10549	06/12/2018	06/12/2023
DOL	DOL	*****6416	MCCALL MASONRY		P O BOX 304 SAYRE PA 18840	08/09/2016	08/09/2021
DOL	DOL	*****4259	MERCANDO CONTRACTING CO INC		134 MURRAY AVENUE YONKERS NY 10704	12/11/2009	02/03/2019
DOL	DOL	*****0327	MERCANDO INDUSTRIES LLC		134 MURRAY AVENUE YONKERS NY 10704	12/11/2009	02/03/2019
DOL	NYC	*****5330	METRO DUCT SYSTEMS INC		1219 ASTORIA BOULEVARD LONG ISLAND CITY NY 11102	04/16/2014	11/19/2020
DOL	DOL	*****3368	MICEK CONSTRUCTION CO INC		20 CROSS STREET FALCONER NY 14733	12/02/2014	12/02/2019
DOL	DOL		MICHAEL A PASCARELLA		SUITE 100 2105 WEST GENESEE STREET SYRACUSE NY 13219	01/06/2016	01/06/2021
DOL	NYC		MICHAEL HIRSCH		C/O MZM CORP 163 S MAIN STREETNEW CITY NY 10956	01/28/2016	01/28/2021
DOL	DOL		MICHAEL KTISTAKIS		363 88TH STREET BROOKLYN NY 11209	11/18/2013	11/18/2018
DOL	DOL		MICHAEL LENIHAN		1079 YONKERS AVE UNIT 4YONKERS NY 10704	08/07/2018	08/07/2023
DOL	AG		MICHAEL RIGLIETTI		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
DOL	DOL		MICHAEL WILSON	WILSON BROTHER DRYWALL CONTRACTORS	36 ABERSOLD STREET ROCHESTER NY 14621	08/31/2015	08/31/2020
DOL	NYC		MILANCE HADZIC		22 CALIFORNIA AVE - STE 1 PATERSON NJ 07503	03/11/2015	03/11/2020
DOL	AG		MOHAMMAD RIAZ		46 RUGBY ROAD WESTBURY NY 11590	11/20/2013	11/20/2018

DOL	AG		MOHAMMED N CHATHA		8831 20TH AVENUE/SUITE 6E BROOKLYN NY 11214	11/17/2015	11/17/2020
DOL	DOL	*****2737	MOUNTAIN'S AIR INC		2471 OCEAN AVENUE- STE 7A BROOKLYN NY 11229	09/24/2012	09/18/2020
DOL	AG		MSR ELECTRICAL CONSTRUCTION CORP.		31 BAY ST BROOKLYN NY 11231	03/28/2018	03/28/2023
DOL	DOL		MUHAMMAD BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	DOL		MUHAMMAD BEIG		142 EAST MARKET STREET LONG BEACH NY 11561	03/07/2017	03/07/2022
DOL	DOL		MUHAMMAD PERVAIZ		C/O CHAMPION CONSTRUCTION 2131 SCHENECTADY AVENUEBROOKLYN NY 11234	11/18/2015	11/18/2020
DOL	NYC	*****3613	MZM CORP		163 S MAIN STREET NEW CITY NY 10956	01/28/2016	01/28/2021
DOL	NYC	*****1284	NEW AMERICAN RESTORATION INC		22 CALIFORNIA AVE - STE 1 PATERSON NJ 07503	03/11/2015	03/11/2020
DOL	DA	*****6988	NEW YORK INSULATION INC		58-48 59TH STREET MASPETH NY 11378	05/16/2012	05/08/2020
DOL	NYC	*****4839	NEW YORK RIGGING CORP		58-83 54TH STREET MASPETH NY 11378	02/26/2016	02/26/2021
DOL	NYC		NICHOLAS PROVENZANO		147 BROOME AVENUE ATLANTIC BEACH NY 11509	03/03/2014	03/03/2019
DOL	NYC		NICHOLAS PROVENZANO		147 BROOME AVENUE ATLANTIC BEACH NY 11509	03/03/2014	03/03/2019
DOL	NYC	*****1968	NORTH AMERICAN IRON WORKS INC		1560 DECATUR STREET RIDGEWOOD NY 11385	05/15/2015	05/15/2020
DOL	DOL	*****6966	NORTH COUNTRY DRYWALL AND PAINT		23167 COUNTY ROUTE 59 DEXTER NY 13634	10/24/2016	10/24/2021
DOL	DOL	*****0065	NORTHEAST LANDSCAPE AND MASONRY ASSOC		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10523	01/23/2017	01/23/2022
DOL	DOL	*****1845	OC ERECTERS, LLC A/K/A OC ERECTERS OF NY INC.		1207 SW 48TH TERRACE DEERFIELD BEACH FL 33442	01/16/2018	01/16/2023
DOL	NYC	*****8337	OPTIMUM CONSTRUCTION INC		23-73 48TH STREET LONG ISLAND CITY NY 11103	04/24/2014	04/24/2019
DOL	NYC		ORSON ARROYO		C/O METRO DUCT SYSTEMS 12-19 ASTORIA BOULEVARDLONG ISLAND CITY NY 11102	04/16/2014	11/19/2020
DOL	DOL	*****4546	PAF PAINTING CORP		161 TIBBETTS ROAD YONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL	*****5242	PAF PAINTING SERVICES INC	GARDEN STATE PAINTING	157 TIBBETTS ROAD YONKERS NY 10103	03/12/2014	03/12/2019
DOL	DOL		PAF PAINTING SERVICES OF WESTCHESTER INC		C/O SPIEGEL & UTRERA 1 MAIDEN LANE - 5TH FLNEW YORK NY 10038	03/12/2014	03/12/2019
DOL	DOL	*****8802	PAT'S HEATING AND AIR CONDITIONING LTD		P O BOX 371 ROUND LAKE NY 12151	05/12/2014	05/12/2019
DOL	DOL		PATRICIA M RUGGLES		P O BOX 371 ROUND LAKE NY 12151	05/12/2014	05/12/2019
DOL	NYC	*****9422	PELIUM CONSTRUCTION, INC.		22-33 35TH ST. ASTORIA NY 11105	12/30/2016	12/30/2021
DOL	DOL		PETER M PERGOLA		3 WEST MAIN ST/SUITE 208 ELMSFORD NY 10523	01/23/2017	01/23/2022
DOL	NYC		PETER TRITARIS		5990 58TH AVENUE MASPETH NY 11378	11/18/2013	11/18/2018
DOL	DOL		PIERRE LAPORT		224 COUNTY HIGHWAY 138 BROADALBIN NY 12025	03/07/2017	03/07/2022
DOL	DOL	*****1543	PJ LAPORT FLOORING INC		224 COUNTY HIGHWAY 138 BROADALBIN NY 12025	03/07/2017	03/07/2022
DOL	DOL	*****2989	PROFESSIONAL ESTIMATING & BUSINESS CORP		157 TIBBETS ROAD YONKERS NY 10705	03/12/2014	03/12/2019
DOL	DOL	*****6895	PROLINE CONCRETE OF WNY INC		3090 SHIRLEY ROAD NORTH COLLINS NY 14111	04/19/2011	07/08/2020
DOL	DA	*****6817	QUADRANT METAL BUILDINGS LLC		2740 SW MARTIN DOWNS BLVD PALM CITY FL 34990	08/25/2016	08/25/2021
DOL	DOL	*****0015	RAMADA CONSTRUCTION CORP		80 SAVO LOOP STATEN ISLAND NY 10309	01/07/2014	01/07/2019
DOL	NYC		RAMESHWAR ASU		137 LIBERTY AVENUE BROOKLYN NY 11212	12/21/2015	12/21/2020
DOL	DOL		RANA A KAHN		1973 81ST ST - SUITE A-5 BROOKLYN NY 11214	01/08/2015	01/08/2020
DOL	NYC		RANTIK PARIKH		13 LORIANN ROAD WARREN NJ 07059	07/15/2015	07/15/2020

DOL	DOL	*****2633	RAW POWER ELECTRIC CORP		3 PARK CIRCLE MIDDLETOWN NY 10940	09/16/2013	09/15/2019
DOL	DOL	*****2633	RAW POWER ELECTRIC CORP		3 PARK CIRCLE MIDDLETOWN NY 10940	01/30/2018	01/30/2023
DOL	NYC		RAYMOND PEARSON		P O BOX 957 PORT JEFFERSON STA NY 11776	03/12/2014	03/12/2019
DOL	AG	*****7015	RCM PAINTING INC.		69-06 GRAND AVENUE 2ND FLOORMASPETH NY 11378	02/07/2018	02/07/2023
DOL	DOL		REGINALD WARREN		161 ROBYN RD MONROE NY 10950	09/15/2014	09/15/2019
DOL	DOL		REGINALD WARREN		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	NYC	*****3461	RELIANCE GENERAL CONSTRUCTION INC		644 OCEAN PARKWAY BROOKLYN NY 11230	09/02/2015	09/02/2020
DOL	DOL		REVOLUTIONARY FLOORS LLC		P O BOX 268 STILLWATER NY 12170	09/16/2013	03/21/2019
DOL	DOL		RHINO CONCRETE LLC		101 SULLYS TRAIL/SUITE 20 PITTSFORD NY 14534	11/18/2013	01/07/2019
DOL	DA		RIANN MULLER		2740 SW MARTIN DOWNS BLVD PALM CITY FL 34990	08/25/2016	08/25/2021
DOL	DOL		RICHARD MACONE		8617 THIRD AVE BROOKLYN NY 11209	09/17/2018	09/17/2023
DOL	DOL		RICHARD WILSON		C/O DUFOUR GROUP INC 353 WEST 56TH STREET #7MNEW YORK NY 10019	06/10/2014	06/10/2019
DOL	DOL	*****8618	RIEKS CONTRACTING LLC		4804 GAHWILER ROAD AUBURN NY 13021	05/01/2015	05/01/2020
DOL	DOL		ROBBYE BISSESAR		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	01/11/2003	01/11/3003
DOL	DOL		ROBERT BRUNO		3 GAYLORD ST AUBURN NY 13021	11/15/2016	11/15/2021
DOL	DOL	*****1855	ROBERT D BISHOP JR	ROBERT D BISHOP JR	P O BOX 112 MORRISSONVILLE NY 12962	07/15/2014	07/15/2019
DOL	DOL		ROBERT D BISHOP JR		P O BOX 112 MORRISONVILLE NY 12962	07/15/2014	07/15/2019
DOL	NYC		ROBERT GUIDO		3256 BRUNER AVENUE BRONX NY 10469	07/29/2014	07/29/2019
DOL	DOL		ROBERT TORDELLA		125 CHAUTAUQUA AVENUE LAKEWOOD NY 14750	06/24/2015	06/24/2020
DOL	DOL	*****3859	ROCHESTER ACOUSTICAL CORP		P O BOX 799 HILTON NY 14468	02/19/2016	02/19/2021
DOL	DOL		RODERICK PUGH		404 OAK ST SUITE 101SYRACUSE NY 13203	07/23/2018	07/23/2023
DOL	DOL	*****4880	RODERICK PUGH CONSTRUCTION INC.		404 OAK ST SUITE 101SYRACUSE NY 13203	07/23/2018	07/23/2023
DOL	NYC		RODNEY SCOTT		201 HEMPSTEAD AVENUE WEST HEMPSTEAD NY 11552	10/30/2015	10/30/2020
DOL	DOL		ROMEO WARREN		161 ROBYN RD MONROE NY 10950	09/16/2013	09/15/2019
DOL	DOL		ROMEO WARREN		161 ROBYN RD MONROE NY 10950	01/30/2018	01/30/2023
DOL	DOL		ROSEANNE CANTISANI			06/12/2018	06/12/2023
DOL	DOL		RYAN ALBIE		21 S HOWELLS POINT ROAD BELLPORT NY 11713	02/21/2017	02/21/2022
DOL	DOL	*****3347	RYAN ALBIE CONTRACTING INC		21 S HOWELLS POINT ROAD BELLPORT NY 11713	02/21/2017	02/21/2022
DOL	NYC		SABIR MUHAMMED		SUITE B-8 782 PELHAM PARKWAY SOUTHBRONX NY 10462	04/21/2016	04/21/2021
DOL	NYC		SAEED HASAN		4558 BROADWAY #6 NEW YORK NY 10040	08/04/2014	08/04/2019
DOL	NYC	*****2117	SCOTT ELECTRICAL LLC		201 HEMPSTEAD AVENUE WEST HEMPSTEAD NY 11552	10/30/2015	10/30/2020
DOL	DOL	*****9751	SCW CONSTRUCTION		544 OLD ROUTE 23 ACRE NY 12405	02/14/2017	02/14/2022
DOL	DOL		SEAN BURBAGE	C/O SEAN BURBAGE CORP	445 ROOSA GAP ROAD BLOOMINGBURG NY 12721	04/14/2014	04/14/2019
DOL	DOL	*****6586	SEAN BURBAGE CORP		445 ROOSA GAP ROAD BLOOMINGBURG NY 12721	04/14/2014	04/14/2019
DOL	AG		SERGIO RAYMUNDO		109 DUBOIS RD. NEW PALTZ NY 12561	05/20/2016	05/20/2021

DOL	DOL	*****1961	SHANE BURDICK	CENTRAL TRAFFIC CONTROL, LLC.	2238 BAKER ROAD GILLETT PA 16923	03/12/2018	03/12/2023
DOL	DOL		SHANE BURDICK		2238 BAKER ROAD GILLETT PA 16923	03/12/2018	03/12/2023
DOL	DOL		SHANE NOLAN		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL	*****0816	SOLAR ARRAY SOLUTIONS, LLC		9365 WASHINGTON ST LOCKPORT IL 60441	07/23/2018	07/23/2023
DOL	DOL	*****4025	SOLUTION MATTERS INC		198 NORWOOD ROAD PORT JEFFERSON NY 11776	11/19/2015	11/19/2020
DOL	NYC	*****4934	SPHINX CONTRACTING CORP		240 HOME STREET TEANECK NJ 07666	08/04/2014	08/04/2019
DOL	DOL	*****3496	STAR INTERNATIONAL INC		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	08/11/2003	08/11/3003
DOL	DOL		STEPHEN BIANCHI		462 LAKEVIEW AVENUE VALHALLA NY 10595	12/16/2013	12/16/2018
DOL	DOL	*****9751	STEPHEN C WAGAR		544 OLD ROUTE 23 ACRE NY 12405	02/14/2017	02/14/2022
DOL	DOL		STEPHEON SHELDON	FANTASTIC PAINTING	493 LANSING ROAD FULTONVILLE NY 12072	11/18/2013	11/18/2018
DOL	DOL		STEVEN P SUCATO		15-68 208TH STREET BAYSIDE NY 11360	06/23/2016	06/23/2021
DOL	DOL		STEVEN SAGGESE		3005 WYNSUM AVENUE MERRICK NY 11566	08/18/2014	08/18/2019
DOL	DOL		STEVEN TESTA		50 SALEM STREET - BLDG B LYNNFIELD MA 01940	01/23/2017	01/23/2022
DOL	DOL		STUART CHAITIN		634 ROUTE 303 BLAUVET NY 10913	07/26/2012	11/19/2018
DOL	NYC	*****9432	SUBLINK LTD		346 THIRD AVENUE PELHAM NY 10803	11/19/2015	11/19/2020
DOL	DOL	*****7441	T & T CONCRETE INC		2560 HAMBURG TURNPIKE P O BOX 367LACKAWANNA NY 14218	07/08/2015	07/08/2020
DOL	DOL	*****7417	TADCO CONSTRUCTION		101-61 99TH STREET OZONE PARK NY 11416	02/15/2017	02/15/2022
DOL	DOL		TADCO CONSTRUCTION		101-61 99TH STREET OZONE PARK NY 11416	02/15/2017	02/15/2022
DOL	DOL	*****7417	TADCO CONSTRUCTION CORP		101-61 99TH STREET OZONE PARK NY 11416	02/15/2017	02/15/2022
DOL	DOL		TALAILA OCAMPA		1207 SW 48TH TERRACE DEERFIELD BEACH FL 33442	01/16/2018	01/16/2023
DOL	DOL		TAMMY LACITIGNOLA		C/O CATSKILL FENCE INSTAL 5445 ROUTE 32CATSKILL NY 12414	08/22/2014	08/22/2019
DOL	DOL	*****9852	TAP STEEL INC		ROUTE 26 3101 P O BOX 457CONSTABLEVILLE NY 13325	01/28/2016	01/28/2021
DOL	DOL		TECH-MECHANICAL FAB DC INC		5 PARKER AVENUE POUGHKEEPSIE NY 12601	03/25/2014	03/25/2019
DOL	DOL	*****5570	TESTA CORP		50 SALEM STREET - BLDG B LYNNFIELD MA 01940	01/23/2017	01/23/2022
DOL	DOL	*****0887	THE BRINSON PAINTING CORPORATION		72 TAUNTON PLACE BUFFALO NY 14216	04/14/2015	04/14/2020
DOL	DOL	*****8174	THE DALRYMPLE CORPORATION		UNIT 278 541 10TH STREET NWATLANTA GA 30318	12/01/2015	12/01/2020
DOL	DOL	*****8174	THE DALRYMPLE GROUP LLC		289 JONESBORO RD/ STE 216 MCDONOUGH GA 30253	12/01/2015	12/01/2020
DOL	DOL	*****9243	THE WELCOME MAT PROPERTY MANAGEMENT LLC		P O BOX 268 STILLWATER NY 12170	09/16/2013	03/21/2019
DOL	DOL		THOMAS DESANTIS	DESANTIS ENTERPRISES	161 OSWEGO RIVER ROAD PHOENIX NY 13135	09/24/2013	11/18/2018
DOL	NYC		THOMAS SCARINCI		130-43 92ND AVENUE RICHMOND HILLS NY 11418	11/27/2013	11/27/2018
DOL	DOL		TIMOTHY A PALUCK		C/O TAP STEEL INC RTE 26 3101/ P O BOX 457CONSTABLEVILLE NY 13325	01/28/2016	01/28/2021
DOL	NYC	*****1523	TM MECHANICAL CORP		130-43 92ND AVENUE RICHMOND HILLS NY 11418	11/27/2013	11/27/2018
DOL	DOL	*****0600	TOMSON ALLOYS RECYCLING INC		143 FILLMORE AVENUE BUFFALO NY 14210	01/08/2015	01/08/2020
DOL	DOL	*****3453	TORCHIA'S HOME IMPROVEMENT		10153 ROBERTS RD SAUQUOIT NY 13456	08/09/2016	08/09/2021

DOL	DOL	*****6914	TRI-COUNTY RESTORATIONS & CONSTRUCTION INC		13 SUMMERSET DRIVE WALLKILL NY 12589	08/22/2014	08/22/2019
DOL	DOL		TRI-COUNTY RESTORATIONS INC		392 ROCK CUT ROAD WALDEN NY 12586	08/22/2014	08/22/2019
DOL	DOL	*****8311	TRIPLE B FABRICATING, INC.		61 WILLETT ST. PASSAIC NJ 07503	10/26/2016	10/26/2021
DOL	DOL	*****9407	TURBO GROUP INC		15-68 208TH STREET BAYSIDE NY 11360	06/23/2016	06/23/2021
DOL	AG	*****6490	UNIVERSAL STEEL FABRICATORS INC		90 JUNIUS STREET BROOKLYN NY 11212	01/23/2014	01/23/2019
DOL	NYC	*****7174	V&R CONTRACTING		P O BOX 957 PORT JEFFERSON STA NY 11776	03/12/2014	03/12/2019
DOL	DOL	*****6392	V.M.K CORP.		8617 THIRD AVE BROOKLYN NY 11209	09/17/2018	09/17/2023
DOL	NYC		VALERIE VISCONTI		346 THIRD AVENUE PELHAM NY 10803	11/19/2015	11/19/2020
DOL	NYC		VEAP SELA	C/O COLONIAL ROOFING COMPANY INC	247 48TH STREET BROOKLYN NY 11220	02/05/2014	02/05/2019
DOL	NYC		VICK CONSTRUCTION		21 DAREWOOD LANE VALLEY STREAM NY 11581	12/31/2013	12/31/2018
DOL	NYC		VICKRAM MANGRU	VICK CONSTRUCTI ON	21 DAREWOOD LANE VALLEY STREAM NY 11581	12/31/2013	12/31/2018
DOL	DOL		VICTOR ROTENBERG		C/O GMDV TRANS INC 67048 182ND STREETFRESH MEADOWS NY 11365	06/24/2016	06/24/2021
DOL	NYC		VINCENT PIZZITOLA		P O BOX 957 PORT JEFFERSON STA NY 11776	03/12/2014	03/12/2019
DOL	NYC		VITO GARGANO		1535 RICHMOND AVE STATEN ISLAND NY 10314	12/13/2017	12/13/2022
DOL	DOL		WAYNE LIVINGSTON JR	NORTH COUNTRY DRYWALL AND PAINT	23167 COUNTY ROUTE 59 DEXTER NY 13634	10/24/2016	10/24/2021
DOL	DOL		WHITE PLAINS CARPENTRY CORP		442 ARMONK RD	06/12/2018	06/12/2023
DOL	DOL		WILLIAM CONKLIN		5 PARKER AVENUE POUGHKEEPSIE NY 12601	03/25/2014	03/25/2019
DOL	DOL		WILLIAM DEAK		C/O MADISON AVE CONSTR CO 39 PENNY STREETWEST ISLIP NY 11795	11/02/2016	11/02/2021
DOL	DOL		WILLIAM MAZZELLA		134 MURRAY AVENUE YONKERS NY 10704	02/03/2014	02/03/2019
DOL	DOL		WILLIE BRINSON		72 TAUNTON PLACE BUFFALO NY 14216	04/14/2015	04/14/2020
DOL	DOL	*****6195	WILSON BROTHER DRYWALL CONTRACTORS		36 ABERSOLD STREET ROCHESTER NY 14621	08/31/2015	08/31/2020
DOL	DOL	*****4043	WINDSHIELD INSTALLATION NETWORK, INC.		200 LATTA BROOK PARK HORSEHEADS NY 14845	03/08/2018	03/08/2023
DOL	DOL	*****7345	YES SERVICE AND REPAIRS CORPORATION		145 LODGE AVE HUNTINGTON STATION NY 11476	08/09/2016	08/09/2021
DOL	DOL		YURIY IVANIN		C/O MOUNTAIN'S AIR INC 2471 OCEAN AVENUE-STE 7ABROOKLYN NY 11229	09/24/2012	09/18/2020
DOL	NYC		ZAKIR NASEEM		30 MEADOW ST BROOKLYN NY 11206	10/10/2017	10/10/2022
DOL	NYC	*****8277	ZHN CONTRACTING CORP		30 MEADOW ST BROOKLYN NY 11206	10/10/2017	10/10/2022

TO THE TOWN BOARD, TOWN OF RIVERHEAD, 200 HOWELL AVENUE, SUFFOLK COUNTY, NEW YORK, ACTING FOR AND ON BEHALF OF THE CALVERTON SEWER DISTRICT:

For all work included under the following contract:

UPGRADE OF THE SEWAGE TREATMENT PLANT – ENTERPRISE PART AT CALVERTON – MODULE NO. 1 (0.100 MGD)
_____ CONSTRUCTION
CONTRACT NO. CASD 1602__.

Made this ____day of _____, 201_, by

_____

(BIDDER'S NAME)

BIDDER'S DECLARATION: The undersigned, as Bidder, declares that the only person or persons interested in this bid or proposal as principal or principals is or are named herein; and that no other person than herein named has any interest in this proposal or in the contract proposed to be taken; that this bid or proposal is made without any connections with any other person or persons making a bid or proposal for the same purpose; that the bid or proposal is in all respects fair and without collusion or fraud; that it has examined the site of the work, the Contract and Specifications and the Drawings referred to; and has read the Notice to Bidders, Information for Bidders and General Conditions hereto attached and fully understands all the same; and it proposes and agrees, if this proposal is accepted, it will contract with the TOWN BOARD of the TOWN OF RIVERHEAD in the Contract accompanying this bid to perform all the work required in accordance with the Plans and as mentioned in said foregoing Information for Bidders, General Conditions, Notice to Bidders, Contract and Specifications; and it will accept in full payment therefor the following sums to wit:

NOTE: THIS FORM MUST BE COMPLETED BY BIDDER

TOWN OF RIVERHEAD / CALVERTON SEWER DISTRICT
UPGRADE OF THE SEWAGE TREATMENT PLANT – ENTERPRISE PARK AT CALVERTON
MODULE NO. 1 (0.100 MGD)
CONTRACT No. CASD 1602E
ELECTRICAL CONSTRUCTION

Gentlemen:

The undersigned hereby offers to furnish all labor, equipment, materials, and appurtenances for the **Upgrade of the Sewage Treatment Plant – Enterprise Park at Calverton – Module No. 1 (0.100 MGD), Contract E: Electrical Construction** all in accordance with the plans and specifications prepared by H2M architects + engineers.

TOTAL BASE BID:

For all work shown, specified and described in the Contract Documents, for the **Upgrade of the Sewage Treatment Plant – Enterprise Park at Calverton – Module No. 1 (0.100 MGD), Contract E: Electrical Construction**, Contract No. CASD 1602E, Electrical Construction for the Town of Riverhead, on behalf of the Calverton Sewer District, complete and ready for operation, including the total of the cash allowances of Sixty-Five Thousand Dollars and Zero Cents ($65,000.00), as specified in Section 012100 – Allowances (Contract E), for the Total Base of:

_____Dollars and_____Cents.
(IN WORDS)

(_____)

The Bidder shall list the name of the manufacturer for the following materials that was used to prepare the bid and that will be furnished and installed for this project if the Bidder is awarded the project:

1. Emergency Generator System: _____

2. MCC:_____

3. STP Pump Stations Control Panel:_____

NOTE: THIS FORM MUST BE COMPLETED BY BIDDER

ALL WORK SHOWN AND SPECIFIED IN THE CONTRACT DOCUMENTS & INCLUDED IN THE BASE BID SHALL BE COMPLETED WITHIN FIVE HUNDRED FIFTY (550) CONSECUTIVE CALENDAR DAYS (SATURDAYS, SUNDAYS AND HOLIDAYS INCLUDED) STARTING TEN DAYS AFTER THE DATE THE OWNER EXECUTED THE CONTRACT. THE COMPLETION DATE WILL BE SET IN THE NOTICE TO PROCEED.

A NOTICE TO PROCEED WILL BE ISSUED AFTER THE CONTRACT HAS BEEN EXECUTED BY THE OWNER.

FAILURE OF THE CONTRACTOR TO COMPLETE ALL WORK SHOWN AND SPECIFIED IN THE CONTRACT DOCUMENTS, BY THE ABOVE SPECIFIED TIME, SHALL SUBJECT HIM/HER TO LIQUIDATED DAMAGES, AS SET FORTH IN ARTICLE 7 OF THE CONTRACT, IN THE SUM OF ONE THOUSAND DOLLARS AND ZERO CENTS ($1,000.00) PER CALENDAR DAY.

THE TOWN BOARD RESERVES THE RIGHT TO AWARD THIS CONTRACT OR TO REJECT ANY AND ALL BIDS.

EXCESS COSTS FOR ENGINEERING & INSPECTION

SPECIFIC DAMAGES WILL BE ASSESSED AND DEDUCTED FROM AMOUNTS OTHERWISE DUE THE CONTRACTOR FOR ADDITIONAL INSPECTION AND CONTRACT MANAGEMENT TIME REQUIRED BEYOND THE CONTRACT COMPLETION PERIOD SPECIFIED ABOVE. SUCH DEDUCTION SHALL BE NO LESS THAN SIXTY FIVE DOLLARS ($65.00) PER HOUR AND NO MORE THAN ONE TWO HUNDRED DOLLARS ($200.00) PER HOUR IN ACCORDANCE WITH THE ENGINEER'S STANDARD BILLING RATE SCHEDULE IN EFFECT WITH THE OWNER AT THE TIME BASED ON CLASSIFICATION OF STAFF.

IN ADDITION, THE OWNER WILL CHARGE TO THE CONTRACTOR, AND WILL DEDUCT FROM THE PARTIAL AND FINAL PAYMENTS DUE THE CONTRACTOR, ALL EXCESS ENGINEERING, INSPECTION, LEGAL AND TESTING CHARGES AND EXPENSES INCURRED BY THE DISTRICT AS STIPULATED BELOW:

1. SERVICES AND OTHER SIMILAR CHARGES AS A RESULT OF THE CONTRACTOR'S AND SUBCONTRACTOR'S ERRORS, OMISSIONS OR FAILURE TO CONFORM TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

2. SERVICES AND OTHER SIMILAR CHARGES REQUIRED TO EXAMINE AND EVALUATE ANY CHANGES OR ALTERNATES PROPOSED BY THE CONTRACTOR AND WHICH MAY VARY FROM THE CONTRACT DOCUMENTS.
3. SERVICES AND OTHER SIMILAR CHARGES AS A RESULT OF THE CONTRACTOR'S PROPOSED SUBSTITUTION OF MATERIALS, EQUIPMENT OR PRODUCTS WHICH REQUIRE A REDESIGN OF ANY PORTION OF THE PROJECT, AS CONTAINED IN THE CONTRACT DOCUMENTS AT THE TIME OF BID.
4. SERVICES AND OTHER SIMILAR CHARGES AS A RESULT OF THE CONTRACTOR'S PROPOSED SUBSTITUTION OF PRODUCTS WHICH REQUIRE AN ENGINEERING EVALUATION TO DETERMINE IF THE SUBSTITUTED PRODUCT IS EQUAL TO THAT SPECIFIED.
5. SERVICES AND OTHER SIMILAR CHARGES AS A RESULT OF CHANGES BY THE CONTRACTOR TO DIMENSIONS, WEIGHTS, SIZES, VOLTAGES, PHASE, HORSEPOWERS, MATERIALS OF CONSTRUCTION, AND SIMILAR PHYSICAL OR OPERATING CHARACTERISTICS OF THE PRODUCT FURNISHED WHICH REQUIRE REDESIGN OF THE PROJECT IN ANY WAY.
6. SERVICES AND OTHER SIMILAR CHARGES FOR THE REVIEW OF RESUBMISSIONS OF SHOP DRAWINGS THAT HAVE BEEN MARKED AS "NO EXCEPTIONS TAKEN" OR "MAKE CORRECTIONS NOTED".
7. SERVICES AND OTHER SIMILAR CHARGES FOR THE REVIEW OF SHOP DRAWINGS SUBMITTED MORE THAN THREE (3) TIMES FOR THE SAME PRODUCT OR PORTION OF THE WORK.
8. SERVICES AND OTHER SIMILAR CHARGES IN CONNECTION WITH ANY WORK PERFORMED PAST THE SPECIFIED WORKING HOURS WHICH WILL BE INVOICED TO THE OWNER AT 1.15 TIMES THE ENGINEER'S STANDARD HOURLY BILLING RATE.
9. ENGINEERING AND LEGAL SERVICES, AND SIMILAR CHARGES AS A RESULT OF THE CONTRACTOR NOT COMPLETING ALL THE WORK WITHIN THE SPECIFIED COMPLETION TIME WHICH SHALL NOT BE CONSIDERED AS PART OF THE LIQUIDATED DAMAGES SPECIFIED ABOVE.

INSPECTION AND CONTRACT MANAGEMENT TIME REQUIRED BEYOND THE CONTRACT COMPLETION PERIOD SPECIFIED ABOVE. SUCH DEDUCTION SHALL BE NO LESS THAN SIXTY FIVE DOLLARS ($65.00) PER HOUR AND NO MORE THAN ONE TWO HUNDRED DOLLARS ($200.00) PER HOUR IN ACCORDANCE WITH THE ENGINEER'S STANDARD BILLING RATE SCHEDULE IN EFFECT WITH THE OWNER AT THE TIME BASED ON CLASSIFICATION OF STAFF.

EXCESS COSTS FOR FINES AND PENALTIES FROM THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPECIFIC DAMAGES WILL BE ASSESSED AND DEDUCTED FROM AMOUNTS OTHERWISE DUE THE CONTRACTOR FOR ALL FINES AND/OR PENALTIES INCURRED BY THE TOWN FOR NOT ADHERING TO THE STRICT TEMPORARY DISCHARGE PERMIT LIMITATIONS DURING CONSTRUCTION DUE TO THE CONTRACTOR NOT STARTING AND COMPLETING THE REQUIRED TREATMENT SYSTEM MBR CONVERSION WORK WITHIN THE NYSDEC STIPULATED TEMPORARY DISCHARGE PERMIT LIMITS PERIOD OF OCTOBER THROUGH APRIL OF ANY PARTICULAR CALENDAR YEAR. SUCH DISCHARGE PERMIT LIMITATION WILL REQUIRE THAT THE CONTRACTOR START AND COMPLETE, READY FOR COMPLETE FACILITY OPERATIONS, ALL WORK INVOLVING THE SINGLE EXISTING SBR TRAIN OPERATION AND NEW SINGLE TRAIN MBR CONVERSION DURING THESE TEMPORARY PERMIT LIMITATION MONTHS.

ADDITIONAL WORK RESTRICTIONS AND PROJECT COORDINATION REQUIREMENTS ARE LISTED IN THE CONTRACT DOCUMENTS INCLUDING SECTION 013100 – PROJECT ADMINISTRATION AND COORDINATION (I.E., COMPLETION OF PRE-EQUALIZATION SYSTEM AND HEADWORKS UPGRADE BEFORE MBR SYSTEM OPERATION, COMPLETION OF NEW EMERGENCY POWER STANDBY GENERATOR SYSTEM FOR NEW MANDATORY EMERGENCY USE EQUIPMENT LOADS PRIOR TO OPERATION OF THE NEW SYSTEMS, ETC.)

BIDDER'S PRINTED NAME & SIGNATURE:

_____

(Print Name)

_____

(Signature)

NOTE: THIS FORM MUST BE COMPLETED BY BIDDER

THE UNDERSIGNED HEREBY ACKNOWLEDGES RECEIPT OF THE FOLLOWING ADDENDA (IF ANY):

Addendum No.	Dated
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Signature of person, firm or corporation making this proposal:

_____
(Contractor)

_____
(Title)

Mail Address: _____

Telephone No.:_____ Dated:_____

The full names and address of all persons interested in the Proposal or principals are as follows:

Name	Address
_____	_____
_____	_____
_____	_____

NOTE: THIS FORM MUST BE COMPLETED BY BIDDER (IF NONE WERE RECEIVED THEN WRITE THE WORD "NONE").

The Town Board reserves the right to award this contract to the lowest qualified bidder and to reject and declare invalid any or all bids deemed not in the best interest of the Town. In awarding this contract, the Town is not bound by the quantities stated in the Bid Form. It is emphasized that the quantities are approximations only. No guarantee is made for any quantities stated nor is a guarantee made as to the total bid. Such total bid is for the purpose of guidance in awarding the contract only. Payment shall be on the basis of actual work done at the bid prices quoted.

On acceptance of this bid, the undersigned binds himself or themselves to enter into a written contract with the Town not later than fourteen (14) days after the date of notice of the acceptance of his bid and to furnish the required security for faithful performance of the terms of said contract and the insurance as required by the Conditions of contract, and to process the work diligently so as to complete all the work required under this contract within the time frame as dictated by the Town Board or their representative.

PROPOSAL CERTIFICATION

THIS BID IS HEREBY SUBMITTED BY:

DATED: _____

NAME OF BIDDER: _____

BIDDER'S ADDRESS: _____

_____

_____

SIGNED BY: _____

PRINTED NAME & TITLE: _____

BIDDER'S TELEPHONE NO.: (DAY): _____

(NIGHT): _____

FAX: _____

FEDERAL ID NO. OR SOCIAL SECURITY No.: _____

NOTE: THIS FORM MUST BE COMPLETED BY BIDDER

Enclose certified check or bid bond for five percent (5%) of the bid total as stipulated in the foregoing Information for Bidders.

The Bidder hereby agrees to enter into a Contract within fourteen (14) days (Saturdays and Sundays excepted) after due notice from the Town Board, Town of Riverhead, that the Contract has been awarded to it and is ready for signature; such notice to be given in writing within ninety (90) days of opening of the bids and, on the signing of such Contract by the Bidder, to furnish the indemnifying bonds as provided in the Contract.

The Bidder hereby further agrees that in the event of its failure or refusal to enter into a contract in accordance with this bid within fourteen (14) days after due notice from the Town Board that the Contract has been awarded to it and is ready for signature, as given in accordance with the Information for Bidders and/or its failure to execute and deliver the bond for the full amount of the Contract price, as provided in said Information for Bidders, the Bidder's check or bid bond which is herewith deposited with the Town Board shall (at the option of said Board) become due and payable as ascertained and liquidated damages for such default; otherwise, said check or bid bond will be returned to the undersigned.

The full names and residences of all persons and parties interested in the foregoing bid as principals are as follows:

NAME	ADDRESS
_____	_____
_____	_____
_____	_____

NAME OF BIDDER:

BUSINESS ADDRESS OF BIDDER:

DATED AT: _____THE _____ DAY OF _____, 201____

NOTE: THIS FORM MUST BE COMPLETED BY BIDDER

FORM OF BID BOND, PAYMENT BONDS AND PERFORMANCE BONDS

The Form of Bid Bond shall be AIA Document A310.

The Form of Labor and Material Payment Bond shall be AIA Document A311.

The Form of Performance Bond and Payment Bond shall be AIA Document A312.

NON-COLLUSIVE BIDDING CERTIFICATE

As per Chapter 751 of the Laws of 1965, an amendment to the General Municipal Law sponsored by the New York State Department of Law, all bids, proposals and contracts awarded or accepted by a municipality must contain a statement of non-collusion. By submission of this bid or proposal, the bidder certifies that:

(A) This bid or proposal has been independently arrived at without collusion with any other bidder or with any competitor or potential competitor;

(B) This bid or proposal has not been knowingly disclosed and will not be knowingly disclosed prior to the opening of bids or proposals for this project to any other bidder, competitor or potential competitor;

(C) No attempt has been or will be made to induce any other person, partnership or corporation to submit or not to submit a bid or proposal;

(D) The person signing this bid or proposal certifies that he has fully informed himself regarding the accuracy of the statements contained in this certification and under the penalties of perjury, affirms the truth thereof such penalties being applicable to the bidder as well as to the person signing in its behalf;

(E) That attached hereto (if corporation bidder) is a certified copy of resolution authorizing the execution of this certificate by the signature of this bid or proposal in behalf of the corporate bidder.

Resolved that _____be authorized
(Name of Corporation)

to sign and submit the bid or proposal of this corporation for the following project:

_____

_____
(Describe Project)

and to submit in such bid or proposal the certificate as to non-collusion required by Section One Hundred Three D (103-D) of the General Municipal Law as the act and deed of such corporation and for any inaccuracies or misstatements in such certificates, this corporate bidder shall be liable under the penalties of perjury.

The following is a true and correct copy of the resolution adopted by:

_____

Corporation at a meeting of its Board of Directors on the _____day of _____, 201 ___.

(Seal of Corporation)

_____
Secretary

Legal name of person, firm or corporation making this Bid:

_____

Dated:_____

(Bidder's Seal)

NOTES:

(1) Where a bidder is a firm, the bid must be signed in the name of the firm by a member of the firm who must sign his own name immediately thereunder as _____, Partner.

(2) Where a bidder is a corporation, the bid must be signed in the name of the corporation by a duly authorized officer or agent thereof having knowledge of the matters stated in the bid and such officer or agent shall also subscribe his own name, the office he holds, and the seal of the corporation must be affixed.

(3) The bid must be sworn to by the person signing it, using one of the appropriate forms of acknowledgement that follow.

(4) The bidders shall date the Form of Affidavit, fill in all blank spaces and complete the "Questionnaire" which follows as part of the bid.

(5) In case of any discrepancy in the bidder's extensions or total, the Town Engineer's computation of extensions and totals will govern.

FORM OF AFFIDAVIT WHERE BIDDER IS AN INDIVIDUAL

STATE OF_____)

) ss.:

COUNTY OF_____)

_____, being duly sworn, deposes and says: I am the person described in and who executed the foregoing bid and the several matters therein state are in all respects true.

_____
(Signature of person who signed bid)

Subscribed and sworn to before me this
_____ day of _____, 201___.

_____
(Notary Public)

FORM OF AFFIDAVIT WHERE BIDDER IS A FIRM

STATE OF_____)

) ss.:

COUNTY OF_____)

_____ being duly sworn, deposes and says: I am a member of _____, the firm described in and which executed the foregoing bid. I subscribed the name of the firm thereto on behalf of said firm, and the several matters therein stated in all respects are true.

_____

(Signature of person who signed bid)

Subscribed and sworn to before me:

this _____ day of _____, 201__.

_____

(Notary Public)

FORM OF AFFIDAVIT WHERE BIDDER IS A CORPORATION

STATE OF_____)

) ss.:

COUNTY OF_____)

_____being duly sworn, deposes and says: I am the _____ of _____ the above named corporation, whose name is subscribed to and which executed the foregoing bid. I reside at _____, State of _____. I have knowledge of the several matters therein stated and they are in all respects true.

_____

(Signature of person who signed bid)

Subscribed and sworn to before me this _____

day of _____, 201___.

_____

(Notary Public)

BIDDER MUST SIGN THIS FORM BEFORE A NOTARY PUBLIC

Bid or Contract Number _____

STATE OF_____)

) ss.:

COUNTY OF_____)

That in connection with the above bid or contract of _____ I _____ the *(applicable herein), (an officer or agent of the corporate applicant, namely its _____), swears or affirms under the penalties of perjury, that no other person will have any direct or indirect interest in this proposal except _____ (in case of a corporation, all officers of the corporation and stockholders owning more than 5% of the corporation and stock must be listed. Use separate sheet in necessary.)

That *(none of the officers or stockholders are) related to any officer or employee of the Town of Riverhead except _____
_____.

That there is not any state or local officer or employee or a member of a board of commissioners of a local public authority or other public corporation within the county (exclusive of a volunteer fireman or civil defense volunteer) interested in such application.

_____
(Signature)

Sworn to before me this _____
day of _____, 201____.

_____
(Notary Public)

*Cross out phrase not appropriate.

NOTE: It is not forbidden that individuals working for the Town of Riverhead or other municipality bid on contracts but only that such interest be revealed when they do bid.

NOTE: THIS FORM MUST BE COMPLETED BY BIDDER

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CALVERTON SEWER DISTRICT

TOWN OF RIVERHEAD **NEW YORK**

The District may make such investigations as the District deems necessary to determine the responsibility of any Bidder or to determine the ability of any Bidder to perform the Work. Bidders shall furnish to the District all information and data required by the District, including complete financial data, within the time and in the form and manner required by the District. The District reserves the right to reject any bid if the evidence required by the District is not submitted as required or if the evidence submitted by or the investigation of any Bidder fails to satisfy the District that the Bidder is responsible, or is able or qualified to carry out the obligations of the Contract or to complete the Work as contemplated.

At the discretion of the District, the Bidder may be required to complete and submit the enclosed New York State Uniform Contracting Questionnaire to assist in determining the Bidder's qualifications. If requested, it shall be submitted within five (5) working days from notice.

The bidder shall complete the following list. The list shall include projects of similar size and nature (i.e. construction and equipment installations type, prime contract dollar amount) and type (i.e. municipal wastewater treatment plants and active facilities that must be maintained during construction). The list of projects shall demonstrate the Bidder's experience with construction methods, and construction procedures. The list shall only include projects which have been completed by the Bidder as the prime contractor, and which have been in operation for a period of not less than one year. A minimum of five such projects shall be provided. At least one (1) of the listed projects shall demonstrate the Bidder's experience with maintenance and protection of existing water or wastewater treatment facilities. List this project as project no.1 and describe the sequence used to phase the project.

Project No. 1 (This project must show experience with existing water or wastewater treatment facilities.)

Project Title: _____

Owner: _____

Owner Contact Name and Phone Number: _____

Location: _____

Engineer's Name and Telephone Number: _____

General Description: _____

Contract Amount: _____

Project No. 2

Project Title: _____

Owner: _____

Owner Contact Name and Phone Number: _____

Location: _____

Engineer's Name and Telephone Number: _____

General Description: _____

Contract Amount: _____

Project No. 3

Project Title: _____

Owner: _____

Owner Contact Name and Phone Number: _____

Location: _____

Engineer's Name and Telephone Number: _____

General Description: _____

Contract Amount: _____

Project No. 4

Project Title: _____

Owner: _____

Owner Contact Name and Phone Number: _____

Location: _____

Engineer's Name and Telephone Number: _____

General Description: _____

Contract Amount: _____

Project No. 5

Project Title: _____

Owner: _____

Owner Contact Name and Phone Number: _____

Location: _____

Engineer's Name and Telephone Number: _____

General Description: _____

Contract Amount: _____

The Owner reserves the right to reject any and all bids which do not include a completed qualifications section and/or do not meet the necessary qualifications criteria, for both prime contractor and subcontractors, as described within this qualifications section, for construction work to be performed and completed as required by the Contract Documents.

BIDDER

BIDDER NAME: _____

PREPARED BY: _____

SIGNED BY: _____

TITLE: _____

NOTE: THIS FORM MUST BE COMPLETED BY BIDDER

Instructions for New York State Vendor Responsibility Questionnaires

The New York State Vendor Responsibility Questionnaire Is intended to elicit information based on vendor type (For-Profit or Not-for-Profit) and activity (Construction or Non-Construction). The For-Profit Construction (CCA-2) questionnaire follows this page.

Business Entities may print the PDF version of a questionnaire form and complete it annually or may obtain the MS Word version from New York State and complete the questionnaire on a computer. Completing the questionnaire in MS Word allows the questionnaire to be saved on the user's computer and updated in the event that the vendor's information changes.

The person(s) completing the vendor responsibility questionnaire must be knowledgeable about the vendor's business and operations. The certification at the end of each questionnaire must be completed by an owner or officer of the Business Entity and must be notarized to be complete.

Business Entities must answer every question contained in the selected questionnaire. Most questions require "Yes" or "No" answers and request additional information where necessary. For paper submissions, responses that require additional information must include an attachment containing this information. A Business Entity must provide all relevant information which can be obtained within the limits of the law. The Business Entity is not required to provide information regarding a determination or finding made in error which was subsequently corrected.

If the submitting Business Entity is a Joint Venture, one questionnaire must be submitted for the Joint Venture plus each Business Entity comprising the Joint Venture must also submit separate questionnaires.

If the Business Entity uses a Social Security Number (SSN) as its identification number, providing the SSN on the questionnaire is optional. Individuals and Sole Proprietors may use an SSN but are encouraged to obtain and use an Employer Identification Number.

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT CONSTRUCTION (CCA-2)

You have selected the For-Profit Construction questionnaire, commonly known as the "CCA-2," which may be printed and completed in this format or, **for your convenience**, **may be completed online using the New York State VendRep System.**

COMPLETION & CERTIFICATION

The person(s) completing the questionnaire must be knowledgeable about the vendor's business and operations. An owner or official must certify the questionnaire and the signature must be notarized.

NEW YORK STATE VENDOR IDENTIFICATION NUMBER (VENDOR ID)

The Vendor ID is a ten-digit identifier issued by New York State when the vendor is registered on the Statewide Vendor File. This number must now be included on the questionnaire. If the business entity has not obtained a Vendor ID, contact the IT Service Desk at ITServiceDesk@osc.state.ny.us or call 866-370-4672.

DEFINITIONS

All underlined terms are defined in the "New York State Vendor Responsibility Definitions List," found at http://www.osc.state.ny.us/vendrep/documents/questionnaire/definitions.pdf. These terms may not have their ordinary, common or traditional meanings. Each vendor is strongly encouraged to read the respective definitions for any and all underlined terms. By submitting this questionnaire, the vendor agrees to be bound by the terms as defined in the "New York State Vendor Responsibility Definitions List" existing at the time of certification.

RESPONSES

Every question must be answered. Each response must provide all relevant information which can be obtained within the limits of the law. However, information regarding a determination or finding made in error which was subsequently corrected or overturned, and/or was withdrawn by the issuing government entity, is not required. Individuals and Sole Proprietors may use a Social Security Number but are encouraged to obtain and use a federal Employer Identification Number (EIN).

NYS VENDOR ID: _____

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE FOR-PROFIT CONSTRUCTION (CCA-2)

BUSINESS ENTITY INFORMATION		
Legal Business Name	EIN _____	
Address of the Principal Place of Business (street, city, state, zip code)	New York State Vendor Identification Number	
	Telephone ext.	Fax
	Website	
Authorized Contact for this Questionnaire		
Name	Telephone ext.	Fax
Title	Email	

Additional Business Entity Identities: If applicable, list any other DBA, Trade Name, Former Name, Other Identity, or EIN used in the last five (5) years, the state or county where filed and the status (active or inactive).

Type	Name	EIN	State or County where filed	Status

I. BUSINESS CHARACTERISTICS		
1.0 Business Entity Type – Check appropriate box and provide additional information:		
a) ☐ Corporation (including PC)	Date of Incorporation	
b) ☐ Limited Liability Company (LLC or PLLC)	Date Organized	
c) ☐ Limited Liability Partnership	Date of Registration	
d) ☐ Limited Partnership	Date Established	
e) ☐ General Partnership	Date Established	County (if formed in NYS)
f) ☐ Sole Proprietor	How many years in business?	
g) ☐ Other	Date Established	
If Other, explain:		
1.1 Was the Business Entity formed in New York State?		☐ Yes ☐ No
If "No," indicate jurisdiction where the Business Entity was formed:		
☐ United States	State	
☐ Other	Country	

NYS VENDOR ID: _____

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT CONSTRUCTION (CCA-2)

I. BUSINESS CHARACTERISTICS

1.2 Is the Legal Business Entity publicly traded?	☐ Yes ☐ No
If "Yes," provide the CIK code or Ticker Symbol:	
1.3 Is the Business Entity currently registered to do business in New York State? *Note: Select "Not Required" if the Business Entity is a Sole Proprietor or General Partnership*	☐ Yes ☐ No ☐ Not Required
If "No," explain why the Business Entity is not required to be registered to do business in New York State:	
1.4 Is the responding Business Entity a Joint Venture? Note: If the submitting Business Entity is a Joint Venture, also submit a separate questionnaire for each Business Entity comprising the Joint Venture.	☐ Yes ☐ No
1.5 If the Business Entity's Principal Place of Business is not in New York State, does the Business Entity maintain an office in New York State? *(Select "N/A" if Principal Place of Business is in New York State.)*	☐ Yes ☐ No ☐ N/A
If "Yes," provide the address and telephone number for one office located in New York State.	
1.6 Is the Business Entity a New York State certified Minority-Owned Business Enterprise, or Women-Owned Business Enterprise, or New York State Small Business, or federally certified Disadvantaged Business Enterprise?	☐ Yes ☐ No
If "Yes," check all that apply: ☐ New York State certified Minority-Owned Business Enterprise (MBE) ☐ New York State certified Women-Owned Business Enterprise (WBE) ☐ New York State Small Business ☐ Federally certified Disadvantaged Business Enterprise (DBE)	

1.7 Identify each person or business entity that is, or has been within the past five (5) years, Principal Owner of 5.0% or more of the firm's shares; a Business Entity Official; or one of the five largest shareholders, if applicable. *(Attach additional pages if necessary.)*

Joint Ventures: Provide information for all firms involved.

Name *(For each person, include middle initial)*	Title	Percentage of ownership (Enter 0%, if not applicable)	Employment status with the firm
			☐ Current ☐ Former
			☐ Current ☐ Former
			☐ Current ☐ Former
			☐ Current ☐ Former

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NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE FOR-PROFIT CONSTRUCTION (CCA-2)

II. AFFILIATE and JOINT VENTURE RELATIONSHIPS

2.0 Are there any other construction-related firms in which, now or in the past five years, the submitting Business Entity or any of the individuals or business entities listed in question 1.7 either owned or owns 5.0% or more of the shares of, or was or is one of the five largest shareholders or a director, officer, partner or proprietor of said other firm? *(Attach additional pages if necessary.)*	☐ Yes ☐ No

Firm/Company Name	Firm/Company EIN (If available)	Firm/Company's Primary Business Activity

Firm/Company Address
Explain relationship with the firm and indicate percent of ownership, if applicable (enter N/A, if not applicable):

Are there any shareholders, directors, officers, owners, partners or proprietors that the submitting Business Entity has in common with this firm?	☐ Yes ☐ No

Individual's Name *(Include middle initial)*	Position/Title with Firm/Company

2.1 Does the Business Entity have any construction-related affiliates not identified in the response to question 2.0 above? *(Attach additional pages if necessary.)*	☐ Yes ☐ No

Affiliate Name	Affiliate EIN (If available)	Affiliate's Primary Business Activity

Affiliate Address
Explain relationship with the affiliate and indicate percent of ownership, if applicable *(enter N/A, if not applicable)*:

Are there any shareholders, directors, officers, owners, partners or proprietors that the submitting Business Entity has in common with this affiliate?	☐ Yes ☐ No

Individual's Name *(Include middle initial)*	Position/Title with Firm/Company

2.2 Has the Business Entity participated in any construction-related Joint Ventures within the past three (3) years? *(Attach additional pages if necessary.)*	☐ Yes ☐ No

Joint Venture Name	Joint Venture EIN (If available)	Identify parties to the Joint Venture

NYS VENDOR ID: _____

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
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III. CONTRACT HISTORY	
3.0 Has the Business Entity completed any construction contracts?	☐ Yes ☐ No
If "Yes," list the ten most recent construction contracts the Business Entity has completed using Attachment A – Completed Construction Contracts, found at www.osc.state.ny.us/vendrep/documents/questionnaire/ac3294s.doc. *If less than ten, include most recent subcontracts on projects up to that number.*	
3.1 Does the Business Entity currently have uncompleted construction contracts?	☐ Yes ☐ No
If "Yes," list all current uncompleted construction contracts by using Attachment B – Uncompleted Construction Contracts, found at www.osc.state.ny.us/vendrep/documents/questionnaire/ac3295s.doc. *Note: Ongoing projects must be included.*	

IV. INTEGRITY – CONTRACT BIDDING ***Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:***	
4.0 Been suspended or debarred from any government contracting process or been disqualified on any government procurement?	☐ Yes ☐ No
4.1 Been subject to a denial or revocation of a government prequalification?	☐ Yes ☐ No
4.2 Had any bid rejected by a government entity for lack of qualifications, responsibility or because of the submission of an informal, non-responsive or incomplete bid?	☐ Yes ☐ No
4.3 Had a proposed subcontract rejected by a government entity for lack of qualifications, responsibility or because of the submission of an informal, non-responsive or incomplete bid?	☐ Yes ☐ No
4.4 Had a low bid rejected on a government contract for failure to make good faith efforts on any Minority-Owned Business Enterprise, Women-Owned Business Enterprise or Disadvantaged Business Enterprise goal or statutory affirmative action requirements on a previously held contract?	☐ Yes ☐ No
4.5 Agreed to a voluntary exclusion from bidding/contracting with a government entity?	☐ Yes ☐ No
4.6 Initiated a request to withdraw a bid submitted to a government entity or made any claim of an error on a bid submitted to a government entity?	☐ Yes ☐ No
For each "Yes," provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, the government entity involved, project(s), relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses.	

V. INTEGRITY – CONTRACT AWARD ***Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:***	
5.0 Defaulted on or been suspended, cancelled or terminated for cause on any contract?	☐ Yes ☐ No
5.1 Been subject to an administrative proceeding or civil action seeking specific performance or restitution (except any disputed work proceeding) in connection with any government contract?	☐ Yes ☐ No
5.2 Entered into a formal monitoring agreement, consent decree or stipulation settlement as specified by, or agreed to with, any government entity?	☐ Yes ☐ No
5.3 Had its surety called upon to complete any contract whether government or private sector?	☐ Yes ☐ No
5.4 Forfeited all or part of a standby letter of credit in connection with any government contract?	☐ Yes ☐ No

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NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE FOR-PROFIT CONSTRUCTION (CCA-2)

V. INTEGRITY – CONTRACT AWARD

Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

For each "Yes," provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, the government entity/owners involved, project(s), contract number(s), relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses.

VI. CERTIFICATIONS/LICENSES

Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

6.0	Had a revocation or suspension of any business or professional permit and/or license?	☐ Yes ☐ No
6.1	Had a denial, decertification, revocation or forfeiture of New York State certification of Minority-Owned Business Enterprise, Women-Owned Business Enterprise or a federal certification of Disadvantaged Business Enterprise status, for other than a change of ownership?	☐ Yes ☐ No

For each "Yes," provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, the government entity involved, relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses.

VII. LEGAL PROCEEDINGS/GOVERNMENT INVESTIGATIONS

Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

7.0	Been the subject of a criminal investigation, whether open or closed, or an indictment for any business-related conduct constituting a crime under local, state or federal law?	☐ Yes ☐ No
7.1	Been the subject of:	
	(i.) An indictment, grant of immunity, judgment or conviction (including entering into a plea bargain) for conduct constituting a crime; or	☐ Yes ☐ No
	(ii.) Any criminal investigation, felony indictment or conviction concerning the formation of, or any business association with, an allegedly false or fraudulent Minority-Owned Business Enterprise, Women-Owned Business Enterprise, or a Disadvantaged Business Enterprise?	☐ Yes ☐ No
7.2	Received any OSHA citation, which resulted in a final determination classified as serious or willful?	☐ Yes ☐ No
7.3	Had a government entity find a willful prevailing wage or supplemental payment violation?	☐ Yes ☐ No
7.4	Had a New York State Labor Law violation deemed willful?	☐ Yes ☐ No
7.5	Entered into a consent order with the New York State Department of Environmental Conservation, or a federal, state or local government enforcement determination involving a violation of federal, state or local environmental laws?	☐ Yes ☐ No

NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE
FOR-PROFIT CONSTRUCTION (CCA-2)

VII. LEGAL PROCEEDINGS/GOVERNMENT INVESTIGATIONS

Within the past five (5) years, has the Business Entity, an affiliate, or any predecessor company or entity:

7.6	Other than previously disclosed, been the subject of any citations, notices or violation orders; a pending administrative hearing, proceeding or determination of a violation of: • Federal, state or local health laws, rules or regulations; • Federal, state or local environmental laws, rules or regulations; • Unemployment insurance or workers compensation coverage or claim requirements; • Any labor law or regulation, which was deemed willful; • Employee Retirement Income Security Act (ERISA); • Federal, state or local human rights laws; • Federal, state or local security laws?	☐ Yes ☐ No

For each "Yes," provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, the government entity involved, relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses.

Note: Information regarding a determination or finding made in error, which was subsequently corrected or overturned, and/or was withdrawn by the issuing government entity, is not required.

VIII. LEADERSHIP INTEGRITY

If the Business Entity is a Joint Venture Entity, answer "N/A - Not Applicable" to questions in this section.

Within the past five (5) years has any individual previously identified or any individual currently or formerly having the authority to sign, execute or approve bids, proposals, contracts or supporting documentation on behalf of the Business Entity with any government entity been:

8.0	Sanctioned relative to any business or professional permit and/or license?	☐ Yes ☐ No ☐ N/A
8.1	Suspended, debarred or disqualified from any government contracting process?	☐ Yes ☐ No ☐ N/A
8.2	The subject of a criminal investigation, whether open or closed, or an indictment for any business-related conduct constituting a crime under local, state or federal law?	☐ Yes ☐ No ☐ N/A
8.3	Charged with a misdemeanor or felony, indicted, granted immunity, convicted of a crime or subject to a judgment for: (i.) Any business-related activity, including but not limited to fraud, coercion, extortion, bribe or bribe-receiving, giving or accepting unlawful gratuities, immigration or tax fraud, racketeering, mail fraud, wire fraud, price-fixing or collusive bidding; or (ii.) Any crime, whether or not business-related, the underlying conduct of which related to truthfulness, including but not limited to the filing of false documents or false sworn statements, perjury or larceny	☐ Yes ☐ No ☐ N/A

For each "Yes," provide an explanation of the issue(s), the individual involved, the relationship to the submitting Business Entity, the government entity involved, relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer(s) below or attach additional sheets with numbered responses.

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NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE FOR-PROFIT CONSTRUCTION (CCA-2)

IX. FINANCIAL AND ORGANIZATIONAL CAPACITY

9.0 Within the past five (5) years, has the Business Entity or any affiliate received any formal unsatisfactory performance assessment(s) from any government entity on any contract?	☐ Yes ☐ No
If "Yes," provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, the government entity involved, relevant dates, any remedial or corrective action(s) taken and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.	
9.1 Within the past five (5) years, has the Business Entity or any affiliate had any liquidated damages assessed over $25,000?	☐ Yes ☐ No
If "Yes," provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, relevant dates, the contracting party involved, the amount assessed and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.	
9.2 Within the past five (5) years, has the Business Entity or any affiliate had any liens, claims or judgments over $25,000 filed against the Business Entity which remain undischarged or were unsatisfied for more than 90 days? (*Note: Including but not limed to tax warrants or liens. Do not include UCC filings.)*	☐ Yes ☐ No
If "Yes," provide an explanation of the issue(s), the Business Entity involved, the relationship to the submitting Business Entity, relevant dates, the Lien holder or Claimants' name(s), the amount of the lien(s) and the current status of the issue(s). Provide answer below or attach additional sheets with numbered responses.	
9.3 In the last seven (7) years, has the Business Entity or any affiliate initiated or been the subject of any bankruptcy proceedings, whether or not closed, or is any bankruptcy proceeding pending?	☐ Yes ☐ No
If "Yes," provide the Business Entity involved, the relationship to the submitting Business Entity, the bankruptcy chapter number, the court name and the docket number. Indicate the current status of the proceedings as "Initiated," "Pending" or "Closed." Provide answer below or attach additional sheets with numbered responses.	

9.4 What is the Business Entity's Bonding Capacity?	
a. Single Project	b. Aggregate (All Projects)
9.5 List Business Entity's Gross Sales for the previous three (3) Fiscal Years:	

1st Year (Indicate year) Gross Sales	2nd Year (Indicate year) Gross Sales	3rd Year (Indicate year) Gross Sales
9.6 List Business Entity's Average Backlog for the previous three (3) fiscal years: (Estimated total value of uncompleted work on outstanding contracts)		
1st Year (Indicate year) Amount	2nd Year (Indicate year) Amount	3rd Year (Indicate year) Amount
9.7 Attach Business Entity's most recent annual financial statement and accompanying notes or complete Attachment C – Financial Information, found at www.osc.state.ny.us/vendrep/documents/questionnaire/ac3296s.xls. *(This information must be attached.)*		

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NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE FOR-PROFIT CONSTRUCTION (CCA-2)

X. FREEDOM OF INFORMATION LAW (FOIL)	
10.0 Indicate whether any information provided herein is believed to be exempt from disclosure under the Freedom of Information Law (FOIL). *Note: A determination of whether such information is exempt from FOIL will be made at the time of any request for disclosure under FOIL. Attach additional pages if necessary.*	☐ Yes ☐ No
If "Yes," indicate the question number(s) and explain the basis for the claim.	

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NEW YORK STATE VENDOR RESPONSIBILITY QUESTIONNAIRE FOR-PROFIT CONSTRUCTION (CCA-2)

Certification

The undersigned: (1) recognizes that this questionnaire is submitted for the express purpose of assisting New York State government entities (including the Office of the State Comptroller (OSC)) in making responsibility determinations regarding award or approval of a contract or subcontract and that such government entities will rely on information disclosed in the questionnaire in making responsibility determinations; (2) acknowledges that the New York State government entities and OSC may, in their discretion, by means which they may choose, verify the truth and accuracy of all statements made herein; and (3) acknowledges that intentional submission of false or misleading information may result in criminal penalties under State and/or Federal Law, as well as a finding of non-responsibility, contract suspension or contract termination.

The undersigned certifies that he/she:

- is knowledgeable about the submitting Business Entity's business and operations;
- has read and understands all of the questions contained in the questionnaire;
- has not altered the content of the questionnaire in any manner;
- has reviewed and/or supplied full and complete responses to each question;
- to the best of his/her knowledge, information and belief, confirms that the Business Entity's responses are true, accurate and complete, including all attachments, if applicable;
- understands that New York State government entities will rely on the information disclosed in the questionnaire when entering into a contract with the Business Entity; and
- is under an obligation to update the information provided herein to include any material changes to the Business Entity's responses at the time of bid/proposal submission through the contract award notification, and may be required to update the information at the request of the New York State government entities or OSC prior to the award and/or approval of a contract, or during the term of the contract.

Signature of Owner/Official _____

Printed Name of Signatory _____

Title _____

Name of Business _____

Address _____

City, State, Zip _____

Sworn to before me this _____ day of _____, 20___;

_____ Notary Public

CALVERTON SEWER DISTRICT

TOWN OF RIVERHEAD **NEW YORK**

The Bidder shall list the subcontractors, if any, to be used for this project. Provide the required information for each proposed subcontractor. Make appropriate copies of this form should the Bidder propose more than five (5) subcontractors. List at least five projects for each subcontractor that demonstrates the subcontractor's qualifications to perform the work of the project. The projects shall be similar in size and complexity and have been completed within the last five (5) years by the subcontractor.

Subcontractor Name: _____

Type of Work: _____

Owner	Contact Name	Phone Number	Location	Contract Amount

Subcontractor Name: _____

Type of Work: _____

Owner	Contact Name	Phone Number	Location	Contract Amount

Subcontractor Name: _____

Type of Work: _____

Owner	Contact Name	Phone Number	Location	Contract Amount

Subcontractor Name: _____

Type of Work: _____

Owner	Contact Name	Phone Number	Location	Contract Amount

Subcontractor Name: _____

Type of Work: _____

Owner	Contact Name	Phone Number	Location	Contract Amount

NOTE: THIS FORM MUST BE COMPLETED BY BIDDER

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1. CONTRACT DOCUMENTS AND DEFINITIONS

The Notice to Bidders, Instructions to Bidders, Proposal Form, Form of Bond, Conditions of Contract, General Conditions, Specifications, Form of Contract, Construction Drawings, together with any Addenda, shall form part of this Contract, and the provisions thereof shall be as binding upon the parties hereto, as if they were herein fully set forth. The table of contents, titles, heading, headlines, and marginal notes contained herein are solely to facilitate reference to various provisions of the Contract Documents and in no way affect, limit or cast light upon the interpretation of the provisions to which they refer. Whenever the term "Contract Documents" is used, it shall mean and include the Notice to Bidders, Instructions to Bidders, Proposal Form, Form of Bond, Conditions of Contract, General Conditions, Plans & Specifications, Form of Contract and any Addenda. In case of any conflict or inconsistency between the provisions of the contract and those of the Specifications, the provisions of this contract shall govern.

Extra Work: The term "extra work" as used herein, refers to and includes all work required by the Town, which in the judgment of the Town Engineer involves changes in or additions to work required by the Specifications and any Addenda in their present form and which is not covered by the price in the Form of Bid.

Subcontractor: The term "subcontractor" shall mean any person, firm, or corporation supplying labor and material for work at the site of the project but not including the parties to this contract.

Notice: The term "notice" as used herein, shall mean and include written notice. Written notice shall be deemed to have been duly served when delivered to, or at last known business address of, the person, firm or corporation for who intended, or his, their, or its duly authorized agents, representatives, or officer, or when enclosed in a postage prepaid wrapper or envelope addressed to such person, firm or corporation at his, their or its last known business address and deposited in a United States mailbox.

Directed, Required, Approved, Acceptable: Whenever the Contract Documents refer to the work or its performance, "directed", "required", "permitted", imply the direction, requirement, permission, order, designation or prescription of the Town Engineer, or his representative, and "approved", "satisfied", or "satisfactory", "in the judgment of", and words of like import, shall mean approved, or acceptable to, or satisfactory to, or in the judgment of the Town Engineer, or his representative.

2. SCOPE OF SERVICES

The contractor will furnish all labor, materials, suppliers, equipment and other facilities necessary or proper for, or incidental to, the work contemplated by this contract as required by, and in strict accordance with the applicable Plans and Specifications and Addenda prepared by the Town Engineer and/or required by, and in strict accordance with, such changes as are ordered and approved pursuant to this contract, and will perform all other obligations imposed on him by this contract. It is specifically understood that this contract does not guarantee any minimum or maximum quantities of work. Quantities will be as ordered by the Town from time to time, and unit bid prices will govern. The quantities in the proposal are for bidding purposes only.

3. COMPENSATION TO BE PAID TO THE CONTRACTOR

(A) Agreed Prices: It is understood and agreed that the contractor will accept as payment in full the summation of the products of the actual quantities in place upon the completion of the work, as determined by the Town Engineer's measurements, by the unit prices bid, no allowances being made for anticipated profit or for reasons of variations from the estimated quantities set forth in the Form of Bid.

(B) Extra Work: The town may, at any time, by a written order and without notice to the sureties, require the performance of such extra work or changes in the work as it may find necessary or desirable. The amount of compensation to be paid to the contract for any extra work, as so ordered, shall be determined as follows:

1. By such applicable unit prices, if any, as set forth in the contract; or
2. If no such unit prices are set forth, then by unit price or by a lump sum mutually agreed upon by the town and the contractor; and
3. If no such unit prices are set forth and if the parties cannot agree upon unit prices or a lump sum; then by actual net cost in money to the contractor of the materials, permits, wages of applied labor, premiums for Worker's Compensation Insurance, payroll taxes required by law, rental for plant and equipment used (excluding small tools) to which total cost will be added twenty (20) percent as full compensation for all other items of profit costs and expenses, including administration, overhead, superintendency, insurance, insurance other than Workers' Compensation Insurance, materials used in temporary structures, allowances made by the contractor to subcontractors, additional premiums upon the performance bond of the contractor and the use of small tools.

4. TIME OF ESSENCE

Inasmuch as the provisions of the contract relating to the time of performance and completion of the work are for the purpose of enabling the town to proceed with the construction of a public improvement in accordance with a predetermined program, such provisions are of the essence of this contract.

5. TIME OF COMPLETION

The town shall assign a construction schedule indicating a start date and a completion date. The contractor shall have a minimum of fourteen (14) days from the date of receipt of construction schedule to the earliest start date on the assigned construction schedule. If said schedule is not acceptable to the contractor, the contractor shall notify the town in writing, postmarked within three (3) working days from date of receipt of construction schedule. This notification shall include an alternative construction schedule. The alternative construction schedule completion date shall not exceed twenty-eight (28) calendar days from the original completion date assigned by the town. Failure to comply with time of completion shall constitute liquidated damages and termination of primary contractor.

6. LIQUIDATED DAMAGES

The time limit being essential to and of the essence of this contract, the primary contractor hereby agrees that the Town shall be and is hereby authorized to deduct and retain out of the money which may be due or may become due to said contractor under this agreement, the sum of the cost of completing the work by the secondary contractor, including overhead charges, services, inspector's wages, and interest on the money invested that the Town will suffer by reason of such default. The Town shall have the right to extend the time for the completion of said work.

7. TERMINATION OF PRIMARY CONTRACTOR

Termination of primary contractor shall include all work in progress and pending. All existing and pending purchase orders pertaining to work issued through the Town-wide Construction Contract shall be hereby considered void. All items previously awarded to terminated contractor shall be hereby awarded to corresponding secondary contractors. Termination of primary contractor shall extend the duration of the contract. At the discretion of the Town of Riverhead, termination of contractor shall warrant disqualification from awarding specific items or all items in succeeding Town-wide construction contracts Capital Improvement Projects, etc.

8. EXTENSIONS OF TIME. NO WAIVER.

If the contractor shall be delayed in the completion of his work by reason or by reasons of unforeseeable causes beyond his control and without his fault or negligence, including but not restricted to; acts of God, the public enemy, fires, floods, epidemics, quarantine restrictions, strikes, riots, civil commotion or freight embargoes, the period herein specified for completion of his work shall be extended by such time as shall be fixed by the Town.

No such extension of time shall be considered a waiver by the Town of its right to terminate the contract for abandonment or delay by the contractor as hereinafter provided, or relive the contractor from full responsibility for performance of his obligations hereunder.

9. WEATHER

During unsuitable weather, all work must stop when such work would be subject to injury and the contractor shall transfer his men and materials to those parts of the work where weather conditions will not have any effect on the workmanship to any damages on account of such damages or suspension, and he must protect any work that might be injured by the elements and make good any work that is injured.

10. CONTRACT SECURITY

The contractor shall furnish, at the request of the Town, a Performance Bond equal to 100% of the estimated value of individual projects completed under this contract at the discretion of the Town Engineer. Each individual project to be completed under the contract will be evaluated by the Town Engineer or his representative to determine the need for bonding. If bonding is deemed necessary, the contractor will be required to submit documentation confirming the actual cost of such bonding to the Town Engineer for approval. Upon approval, the Town will reimburse the contractor for 100% of the cost of any required bonding. The contractor is advised not to include the cost of bonding in bid submittals.

Additional or Substitute Bond: If at any time the Town shall be or become dissatisfied with any surety or sureties then upon the Performance Bond, or if for any other reason such bond shall cease to be adequate security to the Town, the contractor shall within five (5) days after notice from the Town to do so, substitute an acceptable bond in such form and sum and signed by such other surety as may be satisfactory to the Town. The premiums on such bonds shall be made until the new surety shall have been qualified.

11. LAWS AND ORDINANCES

In the execution of the contract, the contractor will be required to observe and obey all federal, state, county and local laws, ordinances, codes and regulations relating to the performance of the contract including but not limiting labor employed thereon, materials supplied, obstructing streets and highways, maintaining signals, storing, handling and use of explosives and all other general ordinances and state statutes affecting him or his employees of his work hereunder in his relations with the municipality or any other persons, and also all laws, codes, ordinances controlling or limiting the contractor while engaged in executing the work under the contract.

As a condition of the contract, the contractor shall and does hereby agree to comply with all requirements of the Labor Laws of the State of New York.

The contractor shall comply with the provisions of Sections 291-299 of the Executive Law and Civil Rights Law, shall furnish all information and reports deemed necessary by the State Commission for Human

Rights, the Attorney General and the Industrial Commissioner for purposes of investigation to ascertain compliance with such sections of the Executive Law and Civil Rights Law.

The contract may be forthwith canceled, terminated or suspended, in whole or in part, by the contracting agency upon the basis of a finding made by the State Commissioner for Human Rights that the contractor has not complied with these laws.

The contract hereby expressly agrees to comply with all the provisions of the Labor Law and any and all amendments thereto, insofar as the same are applicable to the contract. The Labor Law, as amended, provides that no laborer, worker or mechanic in the employ of the contractor, subcontractor or other person doing or contracting to do the whole or a part of the work contemplated by this contract, shall be permitted or required to work more than eight (8) hours in any one (1) calendar day, except in cases of extraordinary emergency caused by fire, flood or danger to life or property; that no such person shall be employed more than eight (8) hours in any day or more than five (5) days in any week except in such emergency; that the wages to be paid for a legal day's work as herein before defined, to laborers, workmen or mechanics upon the work called for under this contract or upon any materials used upon, or in connection therewith, shall not be less than the prevailing rate for a day's work in the same trade or occupation in the locality within the State where such work is to be done and each laborer, worker or mechanic employed by the contractor, subcontractor or other person about or upon the work shall be paid the wages herein provided; that employees engaged in the construction maintenance, and repair of highways and in water works construction outside the limits of cities and villages are no longer exempt from the provisions of the labor Law which require that payment of the prevailing rate of wages and the eight (8) hour day.

Section 222 of the Labor Law, as amended by Chapters 556 and 557 of the Laws of 1933, provides that preference in employment shall be given to citizens of the State of New York who have been residents of Suffolk County for at least six (6) consecutive months immediately prior to the commencement of their employment. Each person so employed shall furnish satisfactory proof of residence in accordance with rules adopted by the Industrial Commissioner. Person other than citizens of the State of New York shall be employed only when such citizens are not available. Section 222 further provides that upon the demand of the State Industrial Commissioners, the contractor shall furnish a list of names and addresses of all his subcontractors and further provides that a violation of this section shall constitute a misdemeanor and shall be punishable by a fine of not less than Fifty Dollars ($50.00) nor more than Five Hundred Dollars ($500.00) or by imprisonment for not less than thirty nor more than ninety days, or both fine and imprisonment.

Section 220-A of the Labor Law, as amended by Chapter 472 of the Laws of 1932, provides that before payment is made by or on behalf of the State or any city, county, town or village or other civil division of the state of any sums due on account of a contract for a public improvement, it is the duty of the comptroller or the financial officer of the municipal corporation to require the contractor and each and every subcontractor to file a certified statement in writing, in satisfactory form, certifying to the amount then due and owing to any and all laborers for daily or weekly wages on account of labor performed upon the work of the contractor, setting forth herein the names of the persons whose wages are unpaid and the amount due each respectively.

Section 220-B of the Labor Law, as so amended, provides that any interested person who shall have previously filed a protest in writing objecting to the amounts due or to become due to him for daily or weekly wages for labor performed on the public improvement for which the contract was entered into, or if for any reason, it may be deemed advisable, the comptroller of the state or financial officer of the municipal corporation may deduct from the whole amount of any payment on account thereof of the sums or sum admitted by any contractor or subcontractor in such statement or statements so filed to be due and owing by him on account of labor performed and may withhold the amount so deducted for the benefit of

the laborers for daily work, weekly wages, whose wages are unpaid as shown by the verified statements filed by any contractor or subcontractor and may pay directly to any person the amount or amounts so shown to be due for such wages.

Section 220-C of the Labor Law, as so amended, provides the penalty for making of a false oath or verification.

Section 220-D of the Labor Law provides that the advertised specifications for every contract for the construction, reconstruction, maintenance and/or repair of highways to which the state, county, town and/or village is a party shall contain a provision stating the minimum rate of hourly wage that can be paid, as shall be designated by the Industrial Commissioner, to the laborers employed in the performance of the contract whether by the contractor, subcontractor or other person doing or contracting to do the whole or part of the work completed by the laborers shall be paid not less than such hourly minimum rate of wage. Any person or corporation that willfully pays, after entering into such contract, less than such stipulated minimum hourly wage scale shall be guilty of a misdemeanor and upon conviction, shall be punished for a first offense by a fine of Five Hundred Dollars ($500.00) or by imprisonment; for a second offense by a fine of One Thousand Dollars ($1,000.00) and in addition thereto, the contract on which the violation has occurred shall be forfeited, and no such person or corporation shall be entitled to receive any sum nor shall any officer, agent or employee of the state pay the same or authorize its payment from the funds under his charge or control to any person or corporation for work done upon any contract, on which the contractor has been convicted or a second offense in violation of the provisions of this section.

The minimum wage rates established by the Industrial Commissioner, State of New York, for this contract are set forth herein above as part of “Instructions to Bidders, Section 21 “NYS Wage Rates”

12. QUALIFICATIONS FOR EMPLOYMENT

No person under the age of sixteen (16) years and no person currently serving sentence in a penal or correctional institution shall be employed to perform any work on the project under this contract. No person whose age or physical condition is such as to make his employment dangerous to his health or safety or to the health or safety of others, shall be employed to perform any work on this project; provided, however, that such restrictions shall not operate against the employment of physically handicapped persons, otherwise employable, where each person may be safely assigned to work which they can ably perform.

13. NONDISCRIMINATION

There shall be no discrimination because of race, creed, or color in the employment of persons for work under this contract, whether performed by the contractor or any subcontractor. Neither shall the contractor or subcontractor or any person acting on behalf of the contractor or subcontractor discriminate in any manner against or intimidate any employee hired for the performance of work under this contract on account of race, creed, or color.

14. PAYMENTS OF EMPLOYEES

The contractor and each of his subcontractors shall pay each of his employees engaged in work on the project under this contract in full (less deductions made mandatory by law) not less often than once each week. Certified payrolls shall be submitted to the Town Engineer before payment to the contractor is processed. Affidavit attesting to payment or amount owed to employees shall be submitted before payment to contractor is processed.

15. ESTIMATES AND PAYMENTS

Upon successful completion of all work, the contractor shall submit an invoice to the Town Engineer for approval. Upon approval by the Town Engineer, payment will be made to the contractor within thirty (30) calendar days provided the payment request is correct and complete.

(A) Monthly: At the end of each calendar month during the progress of the work, the Town Engineer shall make an approximate estimate of the work satisfactorily completed, based upon the prices set forth in the Form of Bid. In consideration of the work completed, the Town will pay or cause to be paid to the contractor the amount estimated by the Town Engineer as due him less five (5%) percent.

The making of any such estimate or payment made thereon shall not be taken or construed as an acceptance by the Town of any work so estimated and paid for. The five (5%) percent of the amount of the monthly estimate remaining unpaid will be retained by the Town as a guarantee that the contractor will faithfully and completely fulfill all obligations imposed by the contract and specifications, and against any damages caused the Town by reason of any failure on the part of the contractor to fulfill all conditions and obligations herein contained.

(B) Final Estimate: One month after the completion and acceptance of the work specified and contracted for, the Town Engineer will make a final estimate of all the work done. Thereafter, the Town will pay the full amount, less prior payments, less any amounts retained to complete the work according to the provisions of the specifications, less any money paid by the Town by reasons of said contractor having failed to carry out faithfully and completely all the obligations and requirements herein contained. Upon final settlement, according to the conditions herein specified and not until such settlement shall have been made, will the contractor be relieved from the obligations assumed in the contract.

(C) Measurement for Payment: The Town Engineer shall make due measurement of work completed during the progress of the work and his estimate shall be final and conclusive evidence of the amounts of work performed by the contractor under and by virtue of this agreement and shall be taken as full measure of compensation to be received by the contractor.

(D) No payments will be made for materials delivered to the site which have not been incorporated into the work.

16. ACCEPTANCE OF FINAL PAYMENT CONSTITUTES RELEASE

The acceptance by the contractor of final payment shall be, and shall operate as a release to the Town from all claims and all liabilities to the contractor for all the things done or furnished in connection with this work and for every act and neglect of the Town and others relating to or arising out of, this work, excepting to the contractor's claims for interest upon the final payment, if this payment be improperly delayed. No payment, however, final or otherwise, shall operate to release the contractor or his sureties from any obligations under this contract or the performance bond or maintenance bond.

17. CONSTRUCTION REPORTS

The contractor shall submit to the Town Engineer prior to commencing any work under this contract, a detailed schedule and plan of operations indicating the manner in which the contractor proposes to prosecute the work and a time schedule therefor. Such schedules are not intended to bind the contractor to a predetermined plan or procedure, but rather to enable the Town Engineer to coordinate the work of the contractor with work required of and to be performed by others. The detailed schedule shall include a list of the subcontractors and material suppliers he proposes to use on the work.

18. INSPECTION AND TESTS

All material and workmanship shall be subject to inspection, examination and test by the Town Engineer, or his representative, at any time during the construction and at any and all places where manufacturing of materials used and/or construction is carried on.

If at any time before final acceptance of the entire work, the Town Engineer, or his representative, considers necessary or advisable an examination of any portion of the work already completed, by removing the same, the contractor shall upon request, furnish promptly all necessary facilities, labor and materials for such examination. If such work is found to be defective in any material respect, due to the fault of the contractor or any subcontractor, contractor shall be liable for the expense for such examination and of satisfactory reconstruction.

If, however, such approval and consent shall have been given and such work is found to meet the requirements of this contract, the contractor shall be recompensed for the expense of such examination and reconstruction in the manner herein provided for the payment of cost of extra work.

The selection of laboratories and/or agencies for the inspection and tests of supplies, materials or equipment shall be subject to the approval of or designated by the Town. Satisfactory documentary evidence that the material has passed the required inspection and tests must be furnished to the Town Engineer prior to the incorporation of the material in the work.

Any rejected work will be removed from the site of the project completely at the expense of the contractor.

19. PLANS AND SPECIFICATIONS: INTERPRETATIONS

The contractor shall keep at the site of the work one copy of the plans and specifications. Bidding of this contract shall be based on the information and data contained herein. Materials of construction and component installation shall conform to the general requirements of the specifications and details contained at the end of the specifications. The Town Engineer will provide plans and directions for specific drainage projects as projects arise. System configurations, arrangements, elevations, materials and methods are to be as directed by the Town Engineer on a specific project basis.

20. SUPERINTENDENCY BY CONTRACTOR

At the site of the work, the contractor shall give his constant, personal attention to the work or employee a construction superintendent or foreman who shall have full authority to act for the contractor. It is understood that such representative shall be acceptable to the town Engineer, or his representative, and shall be one who can be contained in that capacity for the particular job involved unless he ceases to be on the contractor's payroll. The contractor's superintendent and foreman must be able to read and speak the English language.

21. CONTRACTOR'S TITLE TO MATERIALS

No materials or supplies for the work shall be purchased by the contractor or any subcontractor subject to a chattel mortgage or under a conditional sale or other agreement by which an interest is retained by the seller. The contractor warrants that he has good title to all materials and supplies used by him in the work.

22. PROTECTION OF WORK, PERSONS AND PROPERTY

Precaution shall be exercised at all times for the proper protection of all persons, property and work the contractor shall give notice to the owners of utilities which may serve the area and request their assistance

in predetermining the location and depth of various pipes, conduits, manholes, and other underground facilities. The safety provisions of applicable laws and building and construction codes shall be observed. Machinery, equipment and all hazards shall be guarded or eliminated in accordance with the safety provisions of the manual of Accident Prevention in Construction published by the Associated General Contractors of America, to the extent that such provisions are not in contravention of applicable law. The contractor shall furnish entirely at his own expense any and all additional safety measures deemed necessary by the Town to adequately safeguard the traveling public.

23. REPRESENTATIONS OF CONTRACTOR

The contractor represents and warrants:

(A) That he is financially solvent and that he is experienced in, and competent to, perform the type of work involved under this contract and able to furnish the plant, materials, supplies and/or equipment to be furnished for the work; and

(B) That he is familiar with all federal, state and municipal law, ordinances and regulations which may in any way affect the work of those employed thereunder, including but not limited to any special acts relating to the work; and

(C) That such work required by these contract documents as is to be done by him can be satisfactorily constructed and used for the purpose for which is intended and that such construction will not injure any person or damage any property; and

(D) That he has carefully examined the specifications and project site and that from his own investigations he has satisfied himself as to the nature of the work, the character of equipment and other facilities needed for the performance of the work, and the general local conditions which may in any way affect the work or its performance.

24. AUTHORITY OF THE ENGINEER

In the performance of the work, the contractor shall abide by all orders and directions and requirements of the Town Engineer, or his representative, and shall perform work to the satisfaction of the Town Engineer, or his representative, at such time and places, by such methods, and in such manner and sequence as he may require. The Town Engineer, or his representative, shall determine the amount, quality, acceptability, and fitness of all parts of the work, shall interpret the plans, specifications, contract documents and any extra work orders and shall decide all other questions in connection with the work. Upon request, the Town Engineer, or his representative, shall confirm in writing any oral orders, directions, requirements or determinations. The enumeration herein or elsewhere in the contract documents of particular instance in which the opinion, judgment, discretion or determination of the Town Engineer, or his representative, shall control or in which work shall be performed to his satisfaction or subject to his approval or inspection, shall not imply that only matters similar to those enumerated shall be so governed and performed, but without exception all the work shall be governed and so performed.

25. CHANGES AND ALTERATIONS

The Town Engineer reserves the right to make alterations in locations, line, grade, plan, form or dimensions of the work, or any part thereof, either before or after the commencement of construction. If such alteration diminishes the amount of work to be done, no claim for damages or anticipated profits will be warranted on the work which may be dispensed with. If such alterations increase the amount of work, such increases shall be paid for according to the quantity of work actually done and at the prices for such work as contained in the schedule of prices.

26. CORRECTION OF WORK

All work and all materials whether incorporated into the work or not, all processes of manufacture and all methods of construction shall be at all times and places subject to the inspection of the Town Engineer, or his representative, who shall be the final judge of quality, materials, processes of manufacture and methods of construction suitable for the purpose for which they are used. Should they fail to meet his approval, they shall be forthwith reconstructed, made good and replaced and/or corrected as the case may be, by the contractor, at his own expense.

If, in the opinion of the Town Engineer, or his representative, it is not desirable to replace any defective or damaged materials or to reconstruct or correct any portion of the work injured or not performed in accordance with the contract documents, the compensation to be paid to the contractor thereunder shall be reduced by such amount as in the judgment of the Town Engineer, or his representative, shall be equitable. The contractor expressly warrants that his work shall be free from any defects in materials or workmanship and agrees to correct any defects which may appear within one year following the final completion of the work. Neither the acceptance of the completed work nor payment therefor shall operate to release the contractor or his sureties from any obligations under or upon this contract or the performance bond.

27. WEATHER CONDITIONS

In the event of temporary suspension of work or during inclement weather or whenever the Town Engineer, or his representative, shall direct, the contractor will, and will cause his subcontractor to sufficiently protect his and their work and materials against damage or injury from the weather. If, in the opinion of the Town Engineer, or his representative, any work or material shall have been damaged or injured by reason of failure on the part of the contractor or any of his subcontractors to protect his or their work, such work and materials shall be removed and replaced at the expense of the contractor.

28. THE TOWN'S RIGHT TO WITHHOLD PAYMENTS

The Town may withhold from the contractor so much of any approved payments due him as may, in the judgment of the Town be necessary:

(A) To assure the payment of just claims then due and unpaid of any persons supplying labor or materials for the work;

(B) To protect the Town from loss due to defective work not remedied; or

(C) To protect the Town from loss due to injury to persons or damage to the work or property of other contractors or subcontractors or others, caused by the act or neglect of the contractor or any of his subcontractors. The Town shall have the right, as agent for the contractor, to apply such amounts so withheld in such manner as the town may deem proper to satisfy such claims or to secure such protection. Such applications of such money shall be deemed payments for the account of the contractor.

29. THE TOWN'S RIGHT TO TERMINATE CONTRACT

The Town of Riverhead may terminate this contract if:

(A) the contractor shall be adjudged bankrupt or make an assignment for the benefit of creditors; or

(B) a receiver or liquidator shall be appointed for the contractor for any of his property and shall not be dismissed within 20 days after such appointment, or the proceedings in connection therewith shall not be stayed on appeal within the said 20 days; or

(C) the contractor shall refuse or fail, after notice or warning from the Town Engineer, or his representative, to supply enough properly skilled workmen or proper materials to the job; or

(D) the contractor shall refuse or fail to prosecute the work or any part thereof with such diligence as will insure its completion within the period herein specified (or any duly authorized extension thereof) or shall fail to complete the work within said period; or

(E) the contractor shall fail to make prompt payments to persons supplying labor or materials for the work; or

(F) the contractor shall fail or refuse to regard laws, ordinances or the instruction of the Town Engineer, or his representative or otherwise be guilty of a substantial violation of any provisions of this contract.

Upon the determination by the Town of Riverhead to terminate this contract, and in any such event, the Town, without prejudice to any other rights or remedy it may have, may give seven (7) days notice to the contractor, terminate the employment of the contractor and his rights to proceed with as to the entire work or (or at the option of the Town) as to any portion thereof as to which delay shall have occurred, and may take possessions of the work and complete the work by contract, secondary contractor or otherwise, as the Town may deem appropriate. In such case, the contractor will not be entitled to receive any further payment until the work is finished. If the unpaid balance of the compensation to be paid to the contractor thereunder shall exceed the expense of so completing the work (including compensation for additional managerial, administrative and inspection services and any damages for delay), such excess shall be paid to the contractor. If such expense shall exceed such unpaid balance, the contractor and his sureties shall be liable to the Town for such excess. If the right of the contractor to proceed with the work is so terminated, the Town may take possession of and utilize in completing the work, such materials, appliances, supplies, plant and equipment as may be on the site of the work and necessary thereof.

30. CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT

If the work shall be stopped by order of the court or other public authority for a period of three (3) months without act or fault of the contractor or any of his agents, servants, employees or subcontractors, the contractor may, upon ten (10) days notice to the town, discontinue his performance of the work and/or terminate the contract; in which event, the liability of the Town immediately preceding (Paragraph 31), the contractor shall not be obligated to pay to the Town any excess of the expense of completing the work over the unpaid balance of the compensation to be paid to the contractor thereunder.

31. RESPONSIBILITY FOR WORK

The contractor agrees to be responsible for the entire work embraced in this contract until its completion and final acceptance by the Town of Riverhead. The contractor further agrees that any imperfect and/or damaged work that may be discovered at any time before the completion and acceptance of work shall be removed and/or replaced in conformity with the requirements of this contract without charge to the Town. Such removal and replacement will be performed as soon as practicable following receipt of written notice from the Town Engineer that the work is imperfect and/or damaged. The contractor further agrees that the inspection of the work by the Town Engineer of his or her designee shall not relieve him of any obligation to do sound and reliable work. Furthermore, such inspection and/or partial payment for work shall not preclude the Town Engineer from requiring removal and/or replacement at a later time. Neither shall such inspection or partial payment be deemed to be acceptance of any work.

32. USE OF PREMISES AND REMOVAL OF DEBRIS

The contractor expressly undertakes at his own expense:

(A) To store his apparatus, materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or the work of any of his subcontractors;

(B) To frequently clean up all refuse, rubbish, scrap materials and debris caused by the operations to the end that at all times, the site of the work shall present a neat, orderly and workmanlike appearance;

(C) Before final payment hereunder to remove all surplus material, temporary structures, plants of any descriptions and debris of every nature resulting from his operations.

33. SUITS OF LAW

The contractor shall indemnify and save harmless the Town and its employees from and against all suits, claims, demands or actions for any injury sustained or alleged to be sustained by any party or parties in connection with the construction of the work or any part thereof, or any commission or omission of the contractor, his employees or agents of any subcontractor, and in case of any such action shall be brought against the Town, the contractor shall immediately take charge of and defend the same at his own cost and expense.

34. POWER OF THE CONTRACTOR TO ACT IN AN EMERGENCY

In case of an emergency which threatens loss or injury to property and/or safety of life, the contractor will be permitted to act as he sees fit without previous instructions from the Town Engineer, or his representative. He shall notify the Town Engineer, or his representative thereof immediately and any compensation claimed by the contractor due to extra work made necessary because of his acts in such emergency shall be submitted to the town Engineer, or his representative, for approval.

Where the contractor has not taken action but has notified the Town Engineer, or his representative, of an emergency indicating injury to persons or damage to adjoining property or to the work being accomplished under this contract, then upon authorization from the Town Engineer, or his representative to prevent such threatened injury or damage, he shall act as instructed by the Town Engineer, or his representative. The amount of reimbursement claimed by the contractor on account of any such action shall be determined in the manner provided herein for the payment of extra work.

35. PROVISION REQUIRED BY LAW DEEMED INSERTED

Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and the contract shall read and be enforced as though it were included herein, and if trough mistake or otherwise, any such provision is not inserted, or is not correctly inserted, then upon the application of either party the contract shall be forthwith physically amended to make such insertion.

36. SUBLETTING – SUCCESSOR AND ASSIGNS

The contractor shall not sublet any part of the work under this contract nor assign any money due him hereunder without first obtaining the written consent of the town. This contract shall insure the benefit of and shall be binding upon the parties hereunder and upon their respective successors and assigns, but neither party shall assign or transfer his interest herein in whole or in part without consent of the other.

37. GENERAL MUNICIPAL LAW CLAUSE

Pursuant to the provisions of Section 103-a of the General Municipal Law, in the event that the bidder or any member, partner, director or officer of the bidder, should refuse, when called before a grand jury to testify concerning any transaction or contract had with the state, any political subdivision thereof, a public authority or any public department, agency or official of the state or of any political subdivision thereof or of a public authority, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning such transaction or contract, such person, and any firm, partnership, or corporation of which he is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with any municipal corporation or any public department, agency or official thereof for goods, work or services for a period of five (5) years after such refusal, and any and all contracts made with any municipal corporation or any public department, agency or official thereof on or after the first day of July, 1959, by such person, and by any firm, partnership or corporation of which he is a member, partner, director or officer may be canceled or terminated by the municipal corporation without incurring any penalty or damages on account of such corporation for goods delivered or work done prior to the cancellation or termination shall be paid.

38. CONTRACTOR'S INSURANCE

The contractor shall not commence any work until he has obtained, and had approved by the Town, all the insurance required under this contract as enumerated herein:

Workers' Compensation Insurance
Public Liability and Property Damage Insurance
Contractor's Protective Liability and Property Damage Insurance
Owner's Protective Public Liability and Property Damage Insurance
Automobile Public Liability and Property Damage Insurance

The contractor shall not permit any subcontractor to commence any operation on the site until satisfactory proof of carriage of the above-required insurance has been posted with and approved by the Town.

(A) Workers' Compensation Insurance: The contractor shall take out and maintain, during the life of this contract, Workers' Compensation Insurance for all his employees employed at the site of the project, and in case of any of the work being sublet, the contractor shall require all subcontractors similarly to provide Workers' Compensation Insurance for all the latter's employees unless such employees are covered by the protection afforded by the contractor. Limits: statutory for Workers' Compensation, One Million Dollars ($1,000,000) Employers Liability.

(B) Public Liability and Property Damage Insurance: The contractor shall take out and maintain during the life of this contract such Public Liability and Property Damage Insurance as shall protect him or any subcontractor performing work covered by this contract from claims for damages for personal injury including accidental death as well as from claims for property damage which may arise from operations under this contract, whether such operations be completed by the contractor or by any subcontractor, or by anyone directly or indirectly employed by either of them, and the amounts of such insurance shall be as follows:

Public Liability Insurance in an amount not less than One Million Dollars ($1,000,000) combined single limit for bodily injuries, including wrongful death, and property damage. The Town of Riverhead must be named as an additional insured.

(C) Liability and Property Damage Insurance: the above policies for Public Liability and Property Damage Insurance must be so written as to include Contractor's Protective Liability and Property

Damage Insurance to protect the contractor against claims arising from the operations of any subcontractor. The Town of Riverhead shall be named as additional insured.

(D) Owner's Protective Public Liability and Property Damage Insurance: The contractor shall furnish to the Town, with respect to the operations he or any of his subcontractors perform, a regular Protective Public Liability Insurance policy for, and in behalf of the Town, providing for a limit of not less than One Million Dollars ($1,000,000) for all damages arising out of bodily injuries to, or death of, one person and subject to that limit for each person, a total limit of One Million Dollars ($1,000,000) for all damages arising out of bodily injuries to, or death of, two or more persons in any one accident; and regular Protective Property Damage Insurance providing for a limit of not less than One Million Dollars ($1,000,000) for damages arising out of injury to, or destruction of, property during the liability of the Town. The coverage provided under this policy must not be affected if the Town performs work in connection with the project either for or in cooperation with the contractor or as an aid thereto whether the same be a part of the contract or separate therefrom, by means of its own employees or agents, or if the Town directs or supervises the work to be performed by the contractor.

(E) Automobile Public Liability and Property Damage Insurance: The contractor shall take out and maintain during the life of the contract such Automobile Public Liability and Property Damage Insurance as shall protect him and any subcontractor performing work covered by this contract from claims for damages for personal injury, including accidental death as well as form claims for property damage which may arise from operations under this contract, whether such operations be by himself or by a subcontractor or by anyone directly or indirectly employed by either of them and the amounts of such insurance shall be as follows:

Automobile Public Liability Insurance in an amount not less than One Million Dollars ($1,000,000) combined single limit for bodily injuries, including wrongful death, and property damage. The Town of Riverhead must be named as an additional insured.

Automobile Property Damage Insurance in an amount of not less than One Million Dollars ($1,000,000) for damages on account of any accident and in an amount of not less than One Million Dollars ($1,000,000) for damages on account of all accidents.

38A. HOLD HARMLESS CLAUSE

To the fullest extent permitted by law, the contractor shall indemnify and hold harmless the Owner and their agents and employees from and against all claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (i) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom and (ii) is caused in whole or in part by any negligent act or omission of the contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in the paragraph.

39. CLAIMS AGAINST TOWN OFFICIALS AND EMPLOYEES

The Contractor expressly agrees and represents that the contractor shall make no claim and shall bring no action pursuant to any federal or state laws, including, but not limited to 42 U.S.C. § 1983, against any Town official or employee in his/her individual or personal capacity for any act, omission, or statement made or done relating to, or arising out of, this contract and expressly waives its rights to bring such a claim pursuant to any federal or state laws, including, but not limited to 42 U.S.C. § 1983.

40. PROOF OF CARRIAGE OF INSURANCE

The contractor shall furnish the Town with certificates of each insurer insuring the contractor under this contract except with respect to subdivision “D”. In respect to this paragraph, the contractor shall furnish the Town with the original insurance policy.

Both certificates, as furnished, and the insurance policy, as required, shall bear the policy numbers, the expiration date of the policy and the limits of liability thereunder. Both the certificates and the policy shall be endorsed to provide the Town with any notice of cancellation at least five (5) days prior to the actual date of such cancellation.

The insurance company utilized must have a minimum AM Best Rating of “A-VII”.

41. TERM OF CONTRACT

The term of this contract shall be until the completion date set by the Notice to Proceed and the length of contract time (calendar days) as stipulated in the Proposal Form. The Town of Riverhead shall have the option of extending this contract in six-month intervals up to a maximum of one additional year when mutually agreed upon by the Town and the contractor.

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38. INFRINGEMENT OF PATENTS

39. GUARANTEE/WARRANTY

40. STANDARDIZATION

1. DEFINITIONS

The "General Conditions" are hereby made part of these Specifications and are attached herein.

Where any article of the General Conditions is supplemented hereby, the provisions of such article shall remain in effect. All the supplemental provisions shall be considered as added thereto. Where any such article is amended, voided or superseded thereby, the provisions of such article not so specifically amended, voided or superseded shall remain in effect.

Work, materials, plant, labor and other requirements of the General Conditions shall be furnished by the Contractor. No direct payment will be made for these General Conditions, and payment shall be deemed to be included in the Contract price or various items of the entire Contract.

The words "or approved equal", as hereinafter used, shall refer to the use of an equal product that has received prior approval by the Consulting Engineer for the District.

1.1. DEFINITION OF TERMS

Whenever the following words and expressions are used in the Specifications, it is understood that they have the meaning defined below:

Plans: All official drawings or reproductions of drawings pertaining to the work or to any structure connected therewith.

Specifications: The body of directions, requirements, descriptions, etc. contained in this document, together with all documents of any description and agreements made (or to be made) pertaining to the methods or manner of performing the work and/or to the quantities and quality of materials to be furnished and accepted under this contract.

Town: Town Board of the Town of Riverhead.

Engineer: H2M architects + engineers, Consulting Engineer for the District.

Contract: Collectively, the contract executed by the Town and the contract, Notice to Bidders, Instruction to Bidders, Proposal Form, Form of Bond, Conditions of Contract, General Conditions, Specifications, Addenda, Performance Bonds, and all supplemental agreements made or to be made.

Inspector: An authorized representative of the Town assigned to make any and all necessary inspections of the work performed and the materials furnished by the contractor.

Materials: Any approved materials acceptable to the Town and conforming to the requirements of these specifications.

Work: All of the work proposed to be accomplished at the site of the project, and all such other work as is in any manner required to accomplish the complete project. This includes all plant, labor, materials, supplies, equipment and other facilities and acts necessary or proper or incidental to the carrying out and completion of other terms of this contract. The term “work performed” shall be construed to include the materials delivered to and suitably stored at the site of the project.

2. STANDARDS OF WORKMANSHIP

The apparent silence of the specifications as to any detail or and apparent omission from them of a detailed description concerning any work to be done and materials to be furnished shall be regarded as

meaning that only the best general practice observed in the latest current construction work is to prevail and that only material and workmanship of first quality is to be used in this connection and all interpretations of these specifications shall be made upon this basis.

3. SAMPLES

The contractor shall furnish for approval, all samples as directed. The work shall be in accordance with approved samples. Samples shall be submitted in ample time so as to prevent delay in fabrication or ordering of materials, allowing for a reasonable time for the Town Engineer, or his representative, to consider the samples submitted, and is necessary, to permit a re-submission of samples to the Town, or its representative, until approval is given.

Work and material shall be furnished and executed in accordance with approved samples, in every aspect. Each sample shall be labeled, bearing material, name and quality, contractor's name, date and other pertinent data. Unless otherwise specified, samples shall be in duplicate and of adequate size to show quality, type, color, range and finish and texture of material. Materials shall not be ordered until approval is received in writing from the Town, or its representative.

4. MANUFACTURED MATERIALS

Where several materials are specified by name, the Town, or its representative, shall have the right, before execution of the contract, to require any and all bidders to state the materials upon which they based their bid. Where any materials are specified by name or trade name, or by catalog number of a company or companies, the contractor shall furnish the article mentioned unless approval of the Town, or itis representative, is obtained in writing for a substitution. Should the contractor desire to substitute other materials for one or more specified by name, he shall apply in writing for such permission and state credit or extra involved. He shall also provide supporting data and samples for the consideration of the Town.

Unless particularly specified otherwise, all manufactured articles, materials and equipment shall be applied, assembled, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer and including the necessary preparation to properly install the work. Where reference is made to manufacturer's directions, the contractor shall submit such directions to the Town or its representative as required.

The materials used in construction shall be disposed so as not to endanger the work, and so that full access may at all times be had to partly completed work and structures and they shall be so disposed as to cause no injury to those having access to the work or any of the units.

All labor shall be performed in the best and most workmanlike manner by mechanics skilled in their respective trades. Standards of work required throughout shall be of such grades as will bring first-class results only. The type of labor employed by the contractor shall be such as will insure the uninterrupted continuity of the entire work, without conflict of any kind.

5. LABORATORY

Laboratories shall be approved by the Town, or its representative, for testing the materials to be used under the contract. Where tests are made, two certified copies showing correctly the chemical analysis and physical tests shall be furnished to the Town, or its representative.

6. SHOP DRAWINGS

The contractor shall submit to the Town Engineer, electronic submittals in accordance with Section 013300 – Submittals and two (2) hard copies of all shop drawings and schedules and no work shall be fabricated until his approval has been given. All shop drawings submitted to the Town Engineer must bear the contractor's stamp of approval evidencing that the drawings have been checked.

The contractor will make any corrections in the drawings required by the Town or its representative and will file with the Town or its representative an electronic and two (2) corrected hard copies. Approval by the Town Engineer of such drawings or schedules shall not relieve the contractor from responsibility for:

(a) Errors of any sort in shop or setting drawings or schedules;
(b) Deviations from Plans and Specifications unless the contractor, at the time of submission of said drawings and schedules, has given notice to the Town or its representative of any such deviations.

7. PERMITS

7.1 Municipal: All work in connection with the installation of pipes or other underground structures of a like nature either within or without the limits of the highway, shall follow all the provisions as contained herein together with the provisions, as they apply, of the Highway Law, Road Openings, Section 149 and Section 198 of Town law, with all subsequent changes, additions or corrections thereto.

7.2 Suffolk County: All permits required for opening country roads and making connections with county drains will be obtained by the Contractor unless otherwise stated in the Contract documents. A copy of the permit must be kept on the job site at all times. The contractor will not be permitted to open any county road or make any connection to any county drain until he has obtained required permits.

7.3 State of New York: The contractor shall obtain all necessary New York State highway permits whenever the contract requires any work to be done within or upon existing state highway right-of-ways. These permits shall be obtained from the District Office in Hauppauge prior to the performance of the work. Upon application for the permit, the contractor will be required to supply the following:

(1) Three (3) copies of a sketch or print showing description and location of the proposed work. These prints will be supplied to the contractor by the Town or its representative.

(2) Contingent liability insurance for the state (in addition to his own liability insurance) shall be furnished in amounts and manner as required by the State of New York. The contingent protective liability and complete operations liability insurance policy to cover:

"The people of the State of New York and/or the Highway Superintendent covering liability arising with respect to all operations through highway permits by permitted by anyone acting by, through or for the permitted, including omissions and supervisor acts of the State", in the amount of personal injury (including death) and property damage as required.

7.4 State of New York Department of Conservation: The contractor shall obtain all necessary New York State DEC dewatering permits whenever the contract requires any work to be done requiring continuous dewatering facilities or a discharge quantity requiring said permit from the NYSDEC. These permits shall be obtained from the NYSDEC Regional Office in Stony Brook prior to the performance of the work. Upon application for the permit, the contractor will be required to supply the following:

(1) Copies of a sketch or print showing description and location of the proposed dewatering system. These prints will be supplied by the contractor to the Town or its representative.

8. CONTRACT DOCUMENTS

The Contract Documents include, but are not limited to, the General Conditions, General Specifications, Detailed Specifications, Plans, Proposal, Contract and other sections as either cited on the Index page(s) or actually included in the bound documents.

Each section of the Contract Documents is intended to be complementary to the other sections.

It is intended that they include all items of labor and materials and everything required and necessary to complete the work, even though some items of work or materials may not be particularly mentioned in every section or may have been inadvertently omitted from the Drawings or Specifications or both.

The contractor will be furnished with five (5) sets of Plans and Specifications giving all the details and dimensions necessary for carrying out the work. One copy of Plans and Specifications furnished to the contractor must be kept constantly at the site. Anything shown on the Plans and not mentioned in the Specifications or mentioned in the Specifications and not shown on the Plans and all work and materials necessary for the completion of the work according to the intent and meaning of the contract shall be furnished, performed and done as if the same were both mentioned in the Specifications and shown on the Drawings. Any conflict or inconsistency between the figures and scale of Drawings shall be submitted by the contractor to the Town Engineer, or his representative, whose decisions hereon shall be conclusive.

In the event the meaning of any portion of the Specifications or Drawings or any supplementary drawings or instructions of the Town Engineer, or his representative, is doubtful, the same shall be understood to call for the best type of construction, both as to materials and workmanship, which reasonably can be interpreted.

All materials and workmanship must be strictly in accordance with the Plans and Specifications.

Additional copies of Plans and Specifications, when requested will be furnished to the contractor at cost of reproduction.

The contractor shall furnish to each of the subcontractors and materials men such copies of the Contract Documents as may be required for their work.

9. ERRORS, OMISSIONS AND DISCREPANCIES

If any errors, omissions or discrepancies appear in the drawings, specifications or other documents, the contractor shall, within ten (10) days from receiving such drawings, specifications or documents, notify the Town, or its representative, in writing of such errors or omissions. In the event of the contractor's failing to give such notice, he will be held responsible for the results of any such errors or omissions and the cost of rectifying the same.

If, in the opinion of the contractor, any work is shown on drawings, or details, or is specified in such a manner as will make it impossible to produce a first class piece of work, or should discrepancies appear between the drawings and/or specifications, he shall refer the same to the Town, or its representative, for interpretation before proceeding with the work. If the contractor fails to make such references to the Town, or its representative, no excuse will thereafter be entertained for failure to carry out the work in a satisfactory manner as directed.

Should a conflict occur in or between the drawings and specifications and/or existing conditions, the contractor shall be deemed to have estimated on the more expensive way of doing the work, unless he shall have asked for and obtained the decision in writing from the Town Engineer or his representative, before the submission of bids, as to which method or materials will produce the results to the best interests of the Town.

10. TEMPORARY TOILET

The contractor shall provide and maintain a sanitary temporary toilet where directed by the Town, or its representative. The temporary toilet shall be enclosed, weatherproof and kept in a sanitary condition at all times. Upon removal of the temporary outside toilet, and all evidence of the toilet shall be removed from the site.

11. CUTTING, PATCHING AND DIGGING

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 shown upon or reasonably implied by Drawings and Specifications for the completed structure, and he shall make good after them as the Town, or its representative may direct. Any cost caused by defective or ill-timed work shall be borne by the party responsible therefore.

The contractor shall not endanger any work by cutting, digging or otherwise, and shall not cut or alter the work of any other contractor except with the consent of the Town, or its representative.

12. PROPER METHOD OF WORK AND PROPER MATERIALS

The Town, or its representative, shall have the power in general to direct the order and sequence of the work, which shall be such as to permit the entire work under this contract to be begun and to proceed as rapidly as possible and such as to bring the several parts of the work to a successful completion at about the same time.

If at anytime before the commencement or during the progress of the work the materials and appliances used or to be used appear to the Town Engineer, or his representative, as insufficient or improper for assuring the quality of the work required, or the required rate of progress, he may order the contractor to increase their efficiency of to improve their character, and the failure of the Town, or its representative, to demand any increase of such efficiency or improvement shall not release the contractor from his obligation to secure the quality of work or the rate of progress specified.

During freezing or inclement weather, no work shall be done except such as can be done satisfactorily and in a manner to secure first class construction throughout. All work shall be done in such a manner as will properly protect and support existing permanent structures, pipe lines, etc.

13. INSPECTION

Inspectors shall be authorized to inspect all work done and materials furnished. Such inspections may extend to all parts of the work and to the preparation or manufacture of the materials to be used. In case of any dispute arising between the contractor and the inspector as to materials furnished or the manner of performing the work, the inspector shall have the authority to reject material or suspend the work until the question at issue shall be referred to and decided by the Town, or its representative. The inspector shall not be authorized to revoke, alter, enlarge, relax or release any requirements of these specifications; nor approve or accept any portion of the work; nor issue instruction contrary to the plans and specifications.

The inspector shall in no case act as foreman or perform other duties for the contractor or interfere with the management of the work by the latter.

Any advice which the inspector may give the contractor shall in no way be construed as binding the Town, or its representative, nor the Town in any way, nor releasing the contractor from the fulfillment of the terms of the contract.

The contractor shall be conclusively presumed to be acquainted with all existing conditions and to guarantee that all work and materials shall, upon final completion of the work, be turned over to the Town in a complete and perfect condition and the contractor shall be responsible for the proper care, maintenance and protection of all work and material until his entire contract is completed and all work and materials found in good condition and accepted. The contractor will be held responsible for the entire work until completed and accepted by the Town.

The contractor shall, at all times, provide the Town, and its representative, assistants and inspectors under him with necessary facilities for determining both on the job and at the places of manufacture, that all work being performed and all materials being manufactured are strictly in accordance with the contract.

Until acceptance of work by the Town, the contractor shall be responsible for all damages to the work including action of the elements or any other cause whatsoever. The contractor shall continuously and adequately protect the work against damage from any cause.

14. WAIVER

Neither the inspection by the Town, its representative or any part of their employees, nor any order, measurement or certificate by the Town, or its representative, nor any order by the Town for the payment of any money, nor any payment for or acceptance of, the whole or any part of the work by the Town, its representative, or the Town, nor any extension of time, nor any possession taken by the Town or its employees shall operate as a waiver of any provision of this contract or of any power herein reserved to the Town or any right to damages herein provided; nor shall any waiver of any breach of the contract constitute a waiver of any subsequent breach. Any remedy provided in this contract shall be construed as cumulative in addition to each and every remedy herein provided.

15. WATER AND ELECTRIC POWER

All water and electric power supply for construction purposes must be provided by the contractor. The cost shall be borne by the contractor.

16. MACHINERY AND EQUIPMENT

All machinery, equipment, trucks and vehicles used in the prosecution of the work or in connection therewith, shall at all times be in proper working condition.

The contractor shall be responsible for curtailing noise, smoke, fumes, or any other nuisance resulting from his operations. He shall, upon written notification from the Town, or its representative, make any repairs, replacements, adjustments, and additions and furnish mufflers when necessary to fulfill these requirements.

17. RIGHT TO USE WORK

The Town may enter upon and use the whole or any portion of the work, which may be in condition to use any time previous to its final acceptance by the Town. Such use shall not constitute or be evidence of

acceptance by the Town of the whole or any part of the material furnished or work performed under the contract.

18. NOTICE OF WARNING

If the contractor shall fail to make prompt payment to persons supplying labor or materials for the work, or refuse or fail to supply enough properly skilled workmen or proper materials or refuse or fail to prosecute the work or any part thereof with such diligence as will insure its completion within the period herein specified (or any duly authorized extension thereof) or fail to complete the work within said period or refuse or fail to regard laws, ordinances, codes, instruction of the Town, or its representative, then the Town shall forward by registered mail to the contractor, at the address given in the contract, a Notice of Warning, and in the event the contractor fails to comply with said Notice of Warning within five (5) days from receipt thereof, the Town shall have the right to terminate the contract.

19. WARNING SIGNS

Contractor shall provide and maintain proper luminous warning and detour signs where directed by the Town, or its representative.

Obstruction, such as stored materials, equipment and excavations shall be marked with no less than two (2) lights which shall be no more than four (4) feet apart.

All lights shall be kept burning from one-half hour before sunset until one-half hour after sunrise.

20. ACCIDENT PREVENTION

During the performance of the work, the contractor shall exercise all reasonable precautions for the protection of persons and property. The safety provisions of applicable laws, building and construction codes shall be observed. Machinery, equipment and all other physical hazards shall be guarded in accordance with the safety provisions of the Manual of Accident Prevention in Construction published by the Associated General Contractors of America to the extent that such provisions are not inconsistent with federal, state or municipal laws or regulations.

If any operation, practice or condition is deemed by the Town, or its representative, to be unsafe, he shall notify the contractor in writing to take corrective action. Where in the opinion of the Town, or its representative, any operation, practice or condition shall be promptly discontinued and before the affected part of the work is resumed, remedial action taken.

The Town reserves the right to remedy any neglect on the part of the contractor as regards the protection of the work which may come to its attention, after twenty-four (24) hours notice in writing; except that in cases of emergency, it shall have the right to remedy any neglect without notice, and in either case to deduct the cost of such remedy from money due the contractor.

Nothing in the foregoing paragraphs shall be construed as relieving the contractor from full responsibility at all times for safe prosecution of the work.

21. DAMAGES

The contractor shall pay and make good all losses or damages arising out of any cause connected with the contract and shall indemnify and save harmless the Town, and its representatives, from any and all claims and any and all liability or responsibility of every nature against the Town or any of its officers or agents, by reason of, or connected with the work or materials furnished under the contract and shall pay

all costs and expenses of every kind, character, and nature whatsoever, occurring upon or arising out of the contract.

All damages, direct or indirect, of whatever nature either resulting from the performance of or resulting to the work under this Contract during its progress from whatever cause shall be borne and sustained by the Contractor, and all work shall be solely at its risk until the date of the final payment request, as prepared by the Engineer.

22. MAINTENANCE OF TRAFFIC

All work under this contract is to be completed within the time indicated in the Contract Agreement or as extended by the Town. If in the meantime it should become necessary, because of the lateness of the season, or any other reason to stop work, the contractor shall at his own expense, open proper drainage ditches, erect temporary structures where necessary, prepare the roads so there will be minimum interference with traffic, set up and maintain a competent organization as directed by the Town, or its representative, to keep the highways in first class condition for traffic, and take every precaution to prevent any damage or unreasonable deterioration of the work during the time it is closed.

23. PROTECTION OF LAND MARKERS, TREES, SHRUBS, AND PROPERTY:

Wherever in the conduct of the work, a monument making a point of public or private survey is encountered or brought to view by excavation, the fact shall at once be communicated to the Town, or its representative. In no case shall the contractor remove the same until the location for resetting shall have been made by the Town, or its representative. All monuments or land markings exposed to view when the work is first undertaken shall be carefully preserved and the greatest care exercised to prevent injury to or disturbance of position of the monument.

The unit price of all items shall include the cost of restoring to its former condition any sidewalks or curbs, as well as restoring any trees, shrubs or lawns that may be damaged during this construction. No additional payment will be made.

The contractor is required at his own expense to obtain any and all permits for use of private property if he uses such property for storage, transportation or accomplishment of the work under the contract. Private property shall be cleaned up neatly, any damage repaired and premises restored to their original condition.

24. PROTECTION OF UTILITIES

The contractor shall familiarize himself with the existence of structures of municipal and other public service corporations on or adjoining the site of the work, for the area within the scope of the contractors work. The contractor shall be responsible for calling for a mark out given reasonable opportunity to work in cooperation with the owners of these utilities in the work, reconstruction or alteration of these structures. Such reconstruction and alteration shall be so conducted as to delay or interfere as little as practicable with the work of the contractor. Any additional cost of various items or work because of these utilities shall be included in the price bid for these items.

The Town, or its representative, shall direct the public utility corporations to shift or remove those utility structures that may be necessary to permit the contractor to carry out the work in accordance with the plans. The contractor shall not remove or cause to be removed, any structure or part of a structure owned by a public utility corporation without the approval of the Town, or its representative.

The contractor shall cooperate with the public utility corporation whose structures (aerial, surface or subsurface) are within the limits of or along the outside of the right-of-way, to make it possible for them to

maintain uninterrupted service. The contractor shall conduct his operations in such a way as not to delay or interfere as little as practicable with the work of the utility corporation.

25. APPROVAL OF SUBCONTRACTORS AND MATERIALS

Prior to commencing any work under this Contract, the Contractor shall submit to the Engineer for approval a list of all the subcontractors and material suppliers it proposes to use for this Contract.

No subcontractor or material supplier will be permitted to deliver materials or perform any work on this Contract until it has been approved by the Engineer.

26. INTERPRETATION OF DRAWINGS, ETC.

In the event of discrepancies between the Drawings and the Specifications, the following order shall be given preference when making interpretations:

a. Addenda (later dates to take precedence over earlier dates).

b. Drawings (schedules or notes to take precedence over other data shown on Drawings).

c. Detailed Specifications

d. General Specifications

On all Plans, Drawings, etc., the figure dimensions shall govern in the case of discrepancy between the scales and figures.

The Contractor shall take no advantage of any error or omission in the Plans, or of any discrepancy between the Plans and Specifications, and the Engineer shall make such corrections and interpretations as may be deemed necessary for the fulfillment of the intent of the Specifications and of the Plans as construed by him, and his decision shall be final.

All work that may be called for in the Specifications and not shown on the Plans, or work shown on the Plans and not called for in the Specifications, shall be furnished and executed by the Contractor as if designated in both. Should any work or material be required which is not denoted in the Plans and Specifications, either directly or indirectly, but which is necessary for the proper carrying out of the intent thereof, it is understood and agreed that the same is implied and required, and that the Contractor shall perform such work and furnish such materials as if they were completely delineated and described.

27. ADDITIONAL WORK

Additional work, if required to be performed under this Contract, shall be in accordance with the applicable paragraphs of the Contract. The Town will be the sole judge as to whether such work was intended as part of the Contract or is in addition thereto.

28. OCCUPATIONAL SAFETY AND HEALTH ACT

The Contractor shall meet all standards of the Occupational Safety and Health Act of 1970 and subsequent revisions. This shall include, but not be limited to, the following areas:

Sanitation, noise, radiation, gases, vapors, fumes, mists, dust, illumination, ventilation, protective equipment, fire protection, waste disposal, electrical hazards, scaffolds and ladders, floor holes and wall openings, heavy equipment and permit-required confined spaces.

All specific requirements of the Act shall be adhered to.

29. SAFETY PROVISIONS

The Contractor shall take every precaution and shall provide such equipment and facilities as are necessary or required for the safety of its employees. In case of an accident, first aid shall be administered to any who may be injured in the progress of the work. In addition, the Contractor shall also be prepared for the removal to the hospital for treatment of any employee either seriously injured or ill.

30. SANITARY REGULATIONS

In addition to compliance with the Occupational Safety and Health Act, the Contractor shall erect and maintain necessary sanitary conveniences for the use of employees on the work. Such conveniences shall be properly secluded from observation, and their use shall be strictly enforced. Such sanitary conveniences shall be constructed in compliance with all laws, ordinances or regulations governing these facilities. The contents of same shall be removed with sufficient frequency to prevent nuisance, and disposed of to the satisfaction of the Town, or its representative.

The Contractor shall obey and enforce such other sanitary regulations and orders and shall take such precautions against infectious diseases as may be deemed necessary. In case any infectious diseases occur among its employees, it shall arrange for the immediate removal of the patient from the work and his isolation from all persons connected with the work.

The building of shanties or other structures for housing the workers, tools, machinery or supplies will be permitted only at approved places, and the sanitary condition of the grounds in and at such shanties or other structures must, at all times, be maintained in a satisfactory manner.

31. RESPONSIBILITY OF ENGINEER AND CONTRACTOR DURING CONSTRUCTION

The Engineer is responsible solely for the general and/or detailed inspection of the work being performed. Such inspection will be periodic and strictly to assure conformance of the Contractor with the Plans and Specifications, such that the end product will conform to the Plans and Specifications.

The Contractor is responsible for complete conformance to the Plans and Specifications, proper construction procedures, coordination with subcontractors, other contractors and utilities, and safe working conditions for its employees.

32. LABOR

All contractors and subcontractors employed upon the work shall and will be required to conform to the Labor Laws of the State of New York and the various acts amendatory and supplementary thereto; and to all other laws, ordinances and legal requirements applicable thereto.

All labor shall be performed in the best and most workmanlike manner by mechanics skilled in their respective trades. The standards of the work required throughout shall be of such grade as will bring results of the first class only.

33. CONTRACTOR'S REPRESENTATIVE

The Contractor, in case of his absence from the work, shall have a competent representative or foreman present, who shall follow without delay all instructions of the Engineer or his assistants in the prosecution

and completion of the work, in conformity with this Contract, and shall have full authority to supply labor and material immediately. The Contractor shall also have a competent representative available to receive telephone messages and provide a reasonable reply as soon as possible, but not later than 24 hours.

34. SCHEDULE OF VALUES (LUMP SUM CONTRACTS)

Before the first partial payment under this Contract becomes due, the Contractor shall prepare a Schedule of Values which totals the amount of the Contract and submit it to the Engineer for approval. The Contractor shall make such revisions as may be required to make this Schedule conform to the true value of work as jointly agreed upon by the Engineer and the Contractor. The Contractor shall submit the Schedule of Values in accordance with the requirements contained in Section 012973.

35. INCOMPETENT EMPLOYEES

The Contractor shall employ only competent, skilled and faithful workers to do the work. Upon request of the Engineer in writing, the Contractor shall suspend or discharge from the work any disobedient, disorderly or incompetent person or persons employed thereon, and will not again employ any person so suspended or discharged without the consent of the Engineer.

This requirement shall not be made on the basis of any claim for compensation or damages against the District or any of its officers or agents.

36. CLAIMS OR PROTESTS

If the Contractor considers any work required of it to be outside the requirements of the Contract or considers any record or ruling of the Engineers or Inspectors as unfair, it shall ask for written instructions or decisions immediately, and then file a written protest with the District against the same within five (5) days thereafter, or be considered as having accepted the record or ruling.

37. NOTIFICATION, INTERFERENCE AND INJURY TO UTILITIES

The Contractor shall cooperate in every way with the utility companies.

All excavation shall be done in compliance with Article 36 of the General Business Law and notices given as provided by CLS General Business Law, Part 761.

All conduits, water mains and gas mains encountered in the construction shall be properly and safely taken care of by the Contractor, who shall, upon encountering same, notify the public corporation to whom they belong in order that they may be changed in such a manner as not to interfere with the final construction.

In case any damage shall result to any service pipe for water or gas, or any private or public sewer or conduit, by reason of negligence on the part of the Contractor, the Contractor shall, without delay and at its own expense, repair the same to the satisfaction of the Engineer. If such repairs are not made promptly or satisfactorily, the District may have the repairs made by another Contractor or otherwise, and deduct the cost of same from any monies due or to become due the Contractor.

38. INFRINGEMENT OF PATENTS

The Contractor further agrees to hold itself responsible for any claims made against the District for any infringement of patents by the use of patented articles in any one phase of construction of the work and the completion of same, or any process connected with the work agreed to be performed under this Contract or of any materials used upon said work, and to save harmless and indemnify the District from all

costs, expenses and damages which the District shall be obliged to pay by reason of any infringement of patents used in the construction and completion of the work.

39. GUARANTEE/WARRANTY

The Contractor shall guarantee and warrant its work and that of its subcontractors against defects in workmanship and/or materials for a period of one (1) year from the date of the final payment request, as prepared by the Engineer, except as otherwise specified. Upon written notification from the Engineer, the Contractor shall repair, replace or reconstruct such defects to the satisfaction of the Engineer, at no cost to the District.

40. STANDARDIZATION

The Detailed and General Specifications indicate specific manufacturers and/or catalog numbers, etc., for the purpose of standardization within the District in order to minimize stockpiling of replacement parts.

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THE TOWN OF RIVERHEAD

UPGRADE OF THE SEWAGE TREATMENT PLANT – ENTERPRISE PARK AT CALVERTON

MODULE NO. 1 (0.100 MGD)

_____CONSTRUCTION CONTRACT CASD1602___

RIVERHEAD, NEW YORK

CONTRACT DATED_____, 201 ___ BY AND BETWEEN THE TOWN OF RIVERHEAD (HEREIN CALLED THE "OWNER" AND _____
(HEREIN CALLED THE "CONTRACTOR")

WITNESSETH, the Town and the Contractor, in consideration of the premises and of the mutual covenants, considerations and agreements contained, agree as follows:

The Notice to Bidders, Instruction to Bidders, Proposal Form, Form of Bond, Conditions of Contract, General Conditions, Specifications, Form of Contract, Construction Drawings, and Plans, together with any Addenda, shall form part of this contract, and the provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth. The Table of Contents, title, heading, headlines and marginal notes contained herein are solely to facilitate reference to various provisions of the Contract Documents and in no way affect, limit or case light upon the interpretation of the provisions to which they refer. Whenever the term "Contract Documents" is used, it shall mean and include the Notice to Bidders, Instruction to Bidders, Proposal Form, Form of Bond, Conditions of Contract, General Conditions, Specifications, Form of Contract, Construction Drawings, and any Addenda. In case of any conflict or inconsistency between the provisions of the conditions of this contract shall govern.

IN WITNESS THEROF, the parties hereunto set their hands and seals, and such of them as are corporations have caused these presents to be signed by their duly authorized officers.

NOTE: Quantities of any or all items may be increased, decreased or eliminated in their entirety at the option of the Town prior to or after award of the contract.
Total Bid

_____Dollars_____
(written in words) (figures)

ATTEST: TOWN OF RIVERHEAD

_____
SUPERVISOR

_____
CONTRACTOR

_____
TITLE

STATE OF NEW YORK

)

)ss:

COUNTY OF _____)

On this _____ day of _____, 201____ before me personally appeared

_____.

(Town Supervisor)

The duly elected and qualified Supervisor of the Town of Riverhead, the corporation described in and which executed the foregoing instrument, to me known and known to me to be such Supervisor of the Town of Riverhead; and he being by me duly sworn did depose and say; that he is the Supervisor of the Town of Riverhead; that he resided at

_____, Suffolk County, New York; that he knows the corporation seal of said Town of Riverhead; that the seal affixed to said instrument is such corporate seal; and that he executed the same as such Supervisor for the purpose herein mentioned.

_____

Notary Public

Acknowledgement by Contractor if a PARTNERSHIP

STATE OF NEW YORK)

)ss:

COUNTY OF _____)

On this _____ day of _____ 201 __, before me personally appeared _____ to me known to by the person described in and who executed the foregoing instrument and who acknowledged to me that he executed the same.

_____

Notary Public

Acknowledgement by Contractor if a PARTNERSHIP

STATE OF NEW YORK)

)ss:

COUNTY OF _____)

On this _____ day of _____, 201 __ before me personally came _____ to be known and known to be to a member of

_____ the firm described in and which executed the foregoing instrument and he acknowledged to me that he subscribed the name of said firm thereto on behalf of said firm for the purpose therein mentioned.

_____

Notary Public

Acknowledgement by Contract if a CORPORATION

STATE OF NEW YORK)

)ss:

COUNTY OF _____)

On this _____ day of _____, 201 __, before me personally came _____ to me known, who being by me duly sworn, did depose and say that he resides at _____of

_____in the state of _____ that he is the _____of the _____ the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said Corporation; and that he signed his name thereto by like order.

_____

Notary Public

NEW YORK STATE OF OPPORTUNITY. Environmental Facilities Corporation

ANDREW M. CUOMO
Governor

SABRINA M. TY
President and CEO

Program Requirements and Bid Packet for Construction Contracts

(For Treatment Works and Drinking Water projects funded with NYS Clean Water State Revolving Fund or Drinking Water State Revolving Fund)

Effective October 1, 2017

New York State Environmental Facilities Corporation
625 Broadway, Albany, NY 12207-2997
P: (518) 402-6924 F: (518) 402-7456
www.efc.ny.gov

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PART 1:

HOW TO USE THIS DOCUMENT

The New York State Environmental Facilities Corporation ("EFC") implements the New York State Revolving Fund ("SRF") for both Clean Water and Drinking Water projects.

This Program Requirements and Bid Packet for Construction Contracts document contains (1) a brief description of New York State and federal program requirements for Contracts and Subcontracts funded in whole or part by the New York State Clean Water and Drinking Water SRFs, (2) required language for such Contracts and Subcontracts to satisfy the SRF program requirements, including required forms, and (3) guidance materials to assist entities in complying with these requirements.

PROGRAM REQUIREMENTS

The following requirements apply to Treatment Works and Drinking Water projects funded with the NYS Clean Water State Revolving Fund or Drinking Water State Revolving Fund:

- Participation of Minority- and Women-Owned Business Enterprises ("MWBE") and Equal Employment Opportunities ("EEO") pursuant to New York State Executive Law, Article 15-A and New York Code of Rules and Regulations, Title 5 (5 NYCRR) Parts 140-145 (Regulations of the Commissioner of Economic Development);

- Participation by Disadvantaged Business Enterprises ("DBE") in United States Environmental Protection Agency ("EPA") Programs pursuant to 40 Code of Federal Regulations (CFR) Part 33;

- Equal Employment Opportunities pursuant to Titles VI and VII of the Civil Rights Act of 1964, 40 CFR Part 7, and 41 CFR Part 60-1 Subpart A;

- Affirmative Action requirements pursuant to 41 CFR Part 60-4;

- Non-discrimination requirements pursuant to Section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972;

- Encouragement of participation of Service-Disabled Veteran-Owned Business Enterprises ("SDVOB") in accordance with New York State Executive Law, Article 17-B and 9 NYCRR Part 252;

- American Iron and Steel ("AIS") pursuant to P.L. 113-76, Consolidated Appropriates Act, 2014; WRRDA Section 608 of the Federal Water Pollution Control Act, as revised;

- Davis Bacon Related Acts ("DBRA") consisting of the following: The Davis Bacon Act; Copeland Act (40 U.S.C. § 3145); Reorganization Plan No. 14; Department of Labor 29 CFR Parts 1, 3, and 5; Contract Work Hours and Safety Standards Act;

- Requirements regarding suspension and debarment pursuant to 2 CFR Part 180, 2 CFR Part 1532, 29 CFR § 5.12, State Labor Law § 220-b, and State Executive Law § 316; and,

- Restrictions on Lobbying pursuant to 40 CFR Part 34.

EFC or its authorized representatives, and other governmental entities as applicable, reserve the right to conduct occasional site inspections to monitor compliance with SRF program requirements.

This document is not intended to be inclusive of all applicable legal requirements and there may be other legal requirements that need to be included in a particular Contract or Subcontract that are not set forth here. Accordingly, EFC recommends that Recipients, Contractors, Subcontractors, and any other involved entities consult their legal counsel for advice on compliance will all applicable laws, including but not limited to local laws. This document is not intended to be legal advice.

Refer to the EFC website at www.efc.ny.gov for the latest version of the bid packet to ensure that the most recent forms and contract language are being used.

REQUIRED CONTRACT LANGUAGE

Part 2 of this document is the Required Contract Language. All of the language in Part 2 must be inserted in to all Contracts and Subcontracts funded in whole or in part with SRF funds, in order for SRF Recipients, Contractors, and Subcontractors to comply with the above-listed SRF program requirements.

GUIDANCE MATERIALS

Part 3 of this document sets forth Guidance Materials intended to assist SRF Recipients, Contractors, and Subcontractors in complying with the foregoing SRF program requirements, as applicable.

The Guidance Materials are for informational purposes only and are not intended to be used as contractual language. Please do not incorporate the Guidance Materials into any Contracts or Subcontracts.

COMMONLY USED TERMS

The following commonly used terms are defined herein as follows:

"Contract" means an agreement between a Recipient and a Contractor.

"Contractor" means all bidders, prime contractors, Service Providers, and consultants as hereinafter defined, unless specifically referred to otherwise.

"Service Provider" means any individual or business enterprise that provides one or more of the following: legal, engineering, financial advisory, technical, or other professional services, supplies, commodities, equipment, materials, or travel.

"Subcontract" means an agreement between a Contractor and a Subcontractor.

"Subcontractor" means any individual or business enterprise that has an agreement, purchase order, or any other contractual arrangement with a Contractor.

"Recipient" means the party, other than EFC, to a grant agreement or a project finance agreement with EFC through which funds for the payment of amounts due thereunder are being paid in whole or in part.

"State" means the State of New York.

"Treatment Works" is defined in Clean Water Act (CWA) Section 212.

"Nonpoint Source Projects" and **"Green Infrastructure Projects"** are defined in CWA Section 319.

"Estuary Management Program Project" is defined in CWA Section 320.

PART 2:

REQUIRED CONTRACT LANGUAGE

SECTION 1 REQUIREMENTS AND PROCEDURES FOR BUSINESS PARTICIPATION OPPORTUNITIES FOR FEDERAL DISADVANTAGED BUSINESS ENTERPRISES AND NEW YORK STATE CERTIFIED MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISES AND EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITY GROUP MEMBERS AND WOMEN

The Equal Employment Opportunities requirements of this section apply to Contracts and Subcontracts greater than $10,000, with the exception of the EEO Workforce Employment Utilization Report requirement which applies to construction Contracts and Subcontracts greater than $50,000.

The Minority- and Women- Owned Business Enterprises ("MWBE") and Disadvantaged Business Enterprises ("DBE") requirements of this section apply to Contractors and Subcontractors working pursuant to: (1) construction Contracts greater than $100,000; (2) Contracts that are initially under this threshold but subsequent change orders or contract amendments increase the Contract value to above $100,000; and, (3) change orders greater than $25,000.

Disregard this section if it does not apply to this Contract or Subcontract.

I. General Provisions

A. Contractors and Subcontractors are required to comply with the following provisions:

1. New York State Executive Law Article 15-A and 5 NYCRR Parts 140-145 ("MWBE Regulations") for all State contracts as defined therein, with a value (1) in excess of $25,000 for labor, services (including, but not limited to, legal, financial, and other professional services), supplies, equipment, materials, or any combination of the foregoing, or (2) in excess of $100,000 for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon.
2. 40 CFR Part 33 ("Federal DBE Regulations") for contracts under EPA financial assistance agreements, as those terms are defined therein.
3. Title VI of the Civil Rights Act of 1964 and 40 CFR Part 7 ("Title VI") for any program or activity receiving federal financial assistance, as those terms are defined therein.
4. Title VII of the Civil Rights Act of 1964 and 41 CFR Part 60-1 Subpart A ("Title VII") for construction contracts related to any government programs providing federal financial assistance, as those terms are defined therein.
5. 41 CFR Part 60-4 ("Federal Affirmative Action Regulations") for federal or federally assisted construction contracts in excess of $10,000, as those terms are defined therein.
6. Section 504 of the Rehabilitation Act of 1973 ("Section 504") for any program or activity receiving federal financial assistance, as those terms are defined therein.
7. The Age Discrimination Act of 1975 ("Age Discrimination Act") for any program or activity receiving federal financial assistance, as those terms are defined therein.
8. Section 13 of the Federal Water Pollution Control Act ("Clean Water Act") Amendments of 1972 ("Section 13") for any program or activity receiving federal financial assistance under the Clean Water Act, as those terms are defined therein.

B. The Contractor and Subcontractor shall not discriminate on the basis of race, color, national origin or sex in the performance of this Contract. The Contractor and Subcontractor shall carry out applicable requirements of 40 CFR Part 33 in the award and administration of contracts awarded under EPA

financial assistance agreements. Failure by the Contractor and Subcontractor to carry out these requirements is a material breach of this Contract which may result in the termination of this Contract or other legally available remedies.

C. Contractors and Subcontractors shall have instituted grievance procedures to assure the prompt and fair resolution of complaints when a violation of Title VI of the Civil Rights Act of 1964 or Title 40 CFR Part 7 is alleged.

D. Failure to comply with all of the requirements herein may result in a finding by the Recipient that the Contractor is non-responsive, non-responsible, and/or has breached the Contract, leading to the withholding of funds or such other actions, liquidated damages pursuant to subsection III(F) of this section, or enforcement proceedings as allowed by the Contract.

E. If any terms or provisions herein conflict with Executive Law Article 15-A, the MWBE Regulations, Federal DBE Regulations, Title VI, Title VII, or Federal Affirmative Action Regulations, such law and regulations shall supersede these requirements.

F. Upon request from the Recipient's Minority Business Officer ("MBO") and/or EFC, Contractor will provide complete responses to inquiries and all MWBE and EEO records available within a reasonable time. For purposes of this section, MBO means the duly authorized representative of the SRF Recipient for MWBE and EEO purposes.

II. Equal Employment Opportunities (EEO)

A. Each Contractor and Subcontractor performing work on the Contract shall undertake or continue existing EEO programs to ensure that minority group members and women are afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status. For these purposes, EEO shall apply in the areas of recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation.

B. Contractor represents that it has submitted an EEO policy statement to Recipient prior to the execution of this Contract.

C. Contractor represents that it's EEO policy statement includes the following language:

1. The contractor will not discriminate on the basis of race, creed, color, national origin, sex, age, disability, or marital status against any employee or applicant for employment, will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination and will make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force on Contracts relating to SRF projects.
2. The Contractor shall state in all solicitations or advertisements for employees that, in the performance of the Contract relating to this SRF project, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.
3. The Contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union, or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status, and that such union or representative will affirmatively cooperate in the implementation of the Contractor's obligations herein.

D. The Contractor will include the provisions of Subdivisions II(A), II(C), and II(E) in every Subcontract in such a manner that the requirements of these subdivisions will be binding upon each Subcontractor as to work in connection with the Contract.

E. The Contractor shall comply with the provisions of the Human Rights Law (Executive Law Article 15), Title VI, Title VII, the Federal Affirmative Action Regulations, Section 504, Age Discrimination

Act, Section 13, and all other State and Federal statutory and constitutional non-discrimination provisions. The Contractor and Subcontractors shall not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex, national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status, and shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest.

F. The Contractor shall display the EEO poster at the project site in a visible location. The EEO poster can be found at https://www.dol.gov/ofccp/regs/compliance/posters/pdf/eeopost.pdf.

G. Required EEO Form

1. EEO Workforce Employment Utilization Report ("Workforce Report")

   a. The Contractor shall submit a Workforce Report, and shall require each of its Subcontractors to submit a Workforce Report to the Recipient, in such format as shall be required by EFC on a monthly basis during the term of the Contract.
   b. Separate forms shall be completed by Contractor and any Subcontractor.
   c. In limited instances, the Contractor may not be able to separate out the workforce utilized in the performance of the Contract from the Contractor's and/or Subcontractor's total workforce. When a separation can be made, the Contractor shall submit the Workforce Report and indicate that the information provided related to the actual workforce utilized on the Contract. When the workforce to be utilized on the Contract cannot be separated out from the Contractor's and/or Subcontractor's total workforce, the Contractor shall submit the Workforce Report and indicate that the information provided is the Contractor's total workforce during the subject time frame, not limited to work specifically under the Contract.

III. Business Participation Opportunities for MWBEs

A. Contract Goals

1. For purposes of this Contract, EFC establishes the following goals for New York State certified MWBE participation ("MWBE Combined Goals") based on the current availability of qualified MBEs and WBEs.

Program	MWBE Combined Goal*
CWSRF, DWSRF, & Green Innovation Grant Program	20%
NYS Water Infrastructure Improvement Act Grants (also receiving EFC loan)	Clean Water project 23% Drinking Water project 26%
NYS Intermunicipal Grants (also receiving EFC loan)	Clean Water project 24% Drinking Water project 24%
NYS financial assistance only	30%
Engineering Planning Grant	30%

*May be any combination of MBE and/or WBE participation

2. For purposes of providing meaningful participation by MWBEs on the Contract and achieving the MWBE Contract Goals established in Section III-A hereof, the Contractor should reference the directory of New York State Certified MBWEs found at the following internet address: https://ny.newnycontracts.com.
3. The Contractor understands that only sums paid to MWBEs for the performance of a commercially useful function, as that term is defined in 5 NYCRR § 140.1, may be applied towards achievement of applicable MWBE participation goals. For construction Contracts or Subcontracts, the portion of the Contract or Subcontract with an MWBE serving as a supplier, and so designated in ESD's Directory, that shall be deemed to represent the commercially useful function performed by the MWBE shall be 60% of the total value of

the Contract or Subcontract. The portion of a Contract or Subcontract with an MWBE serving as a broker, as denoted by NAICS code 425120, that shall be deemed to represent the commercially useful function performed by the MWBE shall be the monetary value for fees, or the markup percentage, charged by the MWBE.

4. Where MWBE Contract Goals have been established herein, pursuant to 5 NYCRR § 142.8, the Contractor must document "good faith efforts" to provide meaningful participation by MWBEs as Subcontractors or suppliers in the performance of the Contract.
5. In accordance with Section 316-a of Article 15-A and 5 NYCRR § 142.13, the Contractor acknowledges that if it is found to have willfully and intentionally failed to comply with the MWBE participation goals set forth in the Contract, such a finding constitutes a breach of Contract and the Contractor shall be liable to the Recipient for liquidated or other appropriate damages, as set forth herein.

B. MWBE Utilization Plan

1. The Contractor represents and warrants that Contractor has submitted an MWBE Utilization Plan to the Recipient prior to the execution of this Contract.
2. The Contractor agrees to use such MWBE Utilization Plan for the performance of MWBEs on the Contract pursuant to the prescribed MWBE goals set forth in Section III-A of this section.
3. The Contractor further agrees that a failure to submit and/or use such MWBE Utilization Plan shall constitute a material breach of the terms of the Contract. Upon the occurrence of such a material breach, the Recipient shall be entitled to any remedy provided herein, including but not limited to, a finding that the Contractor is not responsive.
4. Contractor must report any changes to the Utilization Plan after Contract award and during the term of the Contract to the Recipient's MBO. Contractor shall indicate the changes to the MBO in the next Monthly MWBE Contractor Compliance Report after the changes occurred. At EFC's discretion, an updated MWBE Utilization Plan form and good faith effort documentation may be required to be submitted. When a Utilization Plan is revised due to execution of a change order, the change order should be submitted to the MBO with the revised Utilization Plan.
5. The Contractor shall submit copies of all fully executed subcontracts, agreements, and purchase orders that are referred to in the MWBE Utilization Plan to the MBO within 30 days of their execution.

C. Requests for Waiver

1. If the Contractor, after making good faith efforts, is unable to comply with MWBE goals, the Contractor may submit a Request for Waiver to the Recipient documenting good faith efforts by the Contractor to meet such goals. If the documentation included with the waiver request is complete, the Recipient shall forward the request to EFC for evaluation, and EFC will issue a written notice of acceptance or denial within twenty (20) days of receipt.
2. If the Recipient, upon review of the MWBE Utilization Plan and updated Quarterly MWBE Contractor Compliance Reports determines that the Contractor is failing or refusing to comply with the MWBE Contract Goals and no waiver has been issued in regards to such non-compliance, the Recipient may issue a notice of deficiency to the Contractor. The Contractor must respond to the notice of deficiency within seven (7) business days of receipt. Such response may include a request for partial or total waiver of MWBE Contract Goals.

D. Monthly MWBE Contractor Compliance Report ("Monthly MWBE Report")

The Contractor agrees to submit a report to the Recipient by the third business day following the end of each month over the term of this Contract documenting the payments made and the progress towards achievement of the MWBE goals of the Contract. The Monthly MWBE Report must be supplemented with proof of payment by the Contractor to its Subcontractors (e.g., copies of both sides of a cancelled check) and proof that Subcontractors have been paid within 30 days of receipt of payment from the Recipient. The final Monthly MWBE Report must reflect all Utilization Plan

revisions and change orders.

E. Required Federal DBE Forms

1. EPA Form 6100-3 - DBE Subcontractor Performance Form
   Contractor represents that it has submitted the Form 6100-3 to all of its Subcontractors, all of its Subcontractors have completed the form, and that Contractor submitted such completed forms to Recipient with its bid submission.
2. EPA Form 6100-4 - DBE Subcontractor Utilization Form
   Contractor represents that it has completed the Form 6100-4 and submitted such completed form to Recipient with its bid submission.
3. EPA Form 6100-2 - DBE Subcontractor Participation Form
   Contractor represents that it has distributed a Form 6100-2 to its MWBE Subcontractors for completion prior to execution of this Contract.

F. Liquidated Damages - MWBE Participation

In accordance with Section 316-a of Article 15-A and 5 NYCRR §142.13, if it has been determined by the Recipient or EFC that the Contractor has willfully and intentionally failed to comply with the MWBE participation goals, the Contractor shall be obligated to pay to Recipient liquidated damages or other appropriate damages, as specified herein and as determined by the Recipient or EFC.

Liquidated damages shall be calculated as an amount not to exceed the difference between:

1. All sums identified for payment to MWBEs had the Contractor achieved the approved MWBE participation goals; and,
2. All sums actually paid to MWBEs for work performed or materials supplied under this Contract.

The Recipient and EFC reserve the right to impose a lesser amount of liquidated damages than the amount calculated above based on the circumstances surrounding the Contractor's non-compliance.

In the event a determination has been made by the Recipient or EFC which requires the payment of damages identified herein and such identified sums have not been withheld, Contractor shall pay such damages to the Recipient within sixty (60) days after they are assessed unless prior to the expiration of such sixtieth day, the Contractor has filed a complaint with the Empire State Development Corporation – Division of Minority and Women's Business Development ("ESD") pursuant to Subdivision 8 of Section 313 of the Executive Law in which event the damages shall be payable if the Director of ESD renders a decision in favor of the Recipient.

SECTION 2 PARTICIPATION OPPORTUNITIES FOR NEW YORK STATE CERTIFIED SERVICE-DISABLED VETERAN-OWNED BUSINESSES

New York State Executive Law Article 17-B and 9 NYCRR Part 252 provide for more meaningful participation in public procurement by certified Service-Disabled Veteran-Owned Businesses ("SDVOBs"), thereby further integrating such businesses into New York State's economy. EFC recognizes the need to promote the employment of service-disabled veterans and to ensure that certified service-disabled veteran-owned businesses have opportunities for maximum feasible participation in the performance of EFC contracts.

In recognition of the service and sacrifices made by service-disabled veterans and in recognition of their economic activity in doing business in New York State, Contractors are strongly encouraged and expected to consider SDVOBs in the fulfillment of the requirements of the Contract. Such participation may be as Subcontractors or suppliers, as protégés, or in other partnering or supporting roles.

Contractor is encouraged to make good faith efforts to promote and assist in the participation of SDVOBs

on the Contract for the provision of services and materials. The directory of New York State Certified SDVOBs can be viewed at: http://ogs.ny.gov/Core/SDVOBA.asp

Contractor is encouraged to contact the Office of General Services' Division of Service-Disabled Veteran's Business Development at 518-474-2015 or VeteransDevelopment@ogs.ny.gov to discuss methods of maximizing participation by SDVOBs on the Contract.

SECTION 3 AMERICAN IRON AND STEEL (AIS) REQUIREMENT

The requirements of this section apply to (1) all construction Contracts and Subcontracts for DWSRF projects and CWSRF treatment works projects and (2) all contracts for the purchase of iron and steel products for a DWSRF project or CWSRF treatment works project. Disregard this section if it does not apply to this Contract or Subcontract.

The Contractor acknowledges to and for the benefit of the Recipient of the Clean Water State Revolving Fund ("CWSRF") or the Drinking Water State Revolving Fund ("DWSRF") financial assistance that the Contractor understands the goods and services under this Agreement are being funded with monies made available by the New York State Environmental Facilities Corporation ("EFC") through the CWSRF or the DWSRF and that such funding is subject to certain statutory restrictions requiring that certain iron and steel products used in the project be produced in the United States ("American Iron and Steel Requirement") including iron and steel products provided by the Contractor pursuant to this Agreement.

The Contractor hereby represents and warrants that:

(a) the Contractor has reviewed and understands the American Iron and Steel Requirement,
(b) all of the iron and steel products covered by the American Iron and Steel Requirement used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and
(c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Recipient.

Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Recipient to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Recipient resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the EFC or any damages owed to the EFC by the Recipient). While the Contractor has no direct contractual privity with the EFC, as a lender to the Recipient for the funding of this project, the Recipient and the Contractor agree that the EFC is a third-party beneficiary and neither this paragraph, nor any other provision of this Agreement necessary to give this paragraph force or effect, shall be amended or waived without the prior written consent of the EFC.

SECTION 4 DAVIS-BACON (DB) PREVAILING WAGE REQUIREMENTS

The requirements of this section apply to all construction Contracts and Subcontracts greater than $2000 for either DWSRF projects or CWSRF treatment works projects. Disregard this section if it does not apply to this Contract or Subcontract.

For Contracts in Excess of $2,000:

1. Minimum Wages

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a

part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis–Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (1)(ii) of this section) and the Davis–Bacon poster (WH–1321) shall be posted at all times by the Contractor and its Subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. The Davis-Bacon poster (WH-1321) can be found at https://www.dol.gov/whd/regs/compliance/posters/davis.htm. Wage determinations may be obtained from the US Department of Labor's website, www.dol.gov.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the Contract shall be classified in conformance with the wage determination. The contracting officer shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

1. The work to be performed by the classification requested is not performed by a classification in the wage determination;
2. The classification is utilized in the area by the construction industry; and,
3. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(C) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (1) (ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this Contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the Contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly

cash equivalent thereof.

(iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program *provided* that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis–Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding. The Recipient shall upon its own action or upon written request of the EPA Award Official or an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this Contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis–Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any Subcontractor the full amount of wages required by the Contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the Contract, the Recipient may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis–Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR § 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis–Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The Contractor shall submit weekly for each week in which any Contract work is performed a copy of all payrolls to the Recipient. Such documentation shall be available on request of EFC or EPA. As to each payroll copy received, the Recipient shall provide written confirmation in a form satisfactory to EFC indicating whether or not the project is in compliance with the requirements of 29 CFR § 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR § 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/whd/forms/index.htm or its successor site. The prime Contractor is responsible for the submission of copies of payrolls by all Subcontractors. Contractors and Subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the Recipient, for transmission to EFC, EPA if requested by EPA, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of

compliance with prevailing wage requirements. It is not a violation of this section for a prime Contractor to require a Subcontractor to provide addresses and social security numbers to the prime Contractor for its own records, without weekly submission to the Recipient (or the applicant, sponsor, or owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or Subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR § 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR § 5.5 (a)(3)(i), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the Contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the Contractor or Subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The Contractor or Subcontractor shall make the records required under paragraph (3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Recipient, EFC, EPA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or Subcontractor fails to submit the required records or to make them available, the Recipient, EFC, or EPA may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR § 5.12.

4. Apprentices and trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates

(expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or Subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR § 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

5. Compliance with Copeland Act Requirements. The Contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this Contract.

6. Subcontracts. The Contractor or Subcontractor shall insert in any Subcontracts the clauses contained in 29 CFR § 5.5(a)(1) through (10) and such other clauses as the Recipient may by appropriate instructions require, and also a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any Subcontractor or lower tier subcontractor with all the Contract clauses in 29 CFR § 5.5.

7. Contract Termination: Debarment. A breach of the contract clauses in 29 CFR § 5.5 may be grounds for termination of the Contract, and for debarment as a Contractor and a Subcontractor as provided in 29 CFR § 5.12.

8. Compliance with Davis–Bacon and Related Act requirements. All rulings and interpretations of the Davis–Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this Contract.

9. Disputes Concerning Labor Standards. Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6,

and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its Subcontractors) and the Recipient, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. § 1001.

For Contracts in Excess of $100,000:

1. Overtime requirements. No Contractor or Subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section the Contractor and any Subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and Subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of $25 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

3. Withholding for unpaid wages and liquidated damages. The Recipient shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the Contractor or Subcontractor under any such Contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or Subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

4. Subcontracts. The Contractor or Subcontractor shall insert in any Subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any Subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

5. In any Contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR § 5.1, the Contractor or Subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the Contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the records to be maintained under this paragraph shall be made available by the Contractor or Subcontractor for inspection, copying, or transcription by authorized representatives of the Recipient and the Department of Labor, and the Contractor or Subcontractor will permit such representatives to interview employees during working hours on the job.

SECTION 5 REQUIREMENTS REGARDING SUSPENSION AND DEBARMENT

The requirements of this section apply to all Contracts and Subcontracts.

Contractor and any Subcontractors shall comply with, Subpart C of 2 CFR Part 180 as implemented and supplemented by 2 CFR Part 1532. The Contractor is not a debarred or suspended party under 2 CFR

Part 180 or 2 CFR Part 1532, or 29 CFR § 5.12. Neither the Contractor nor any of its Subcontractors have contracted with, or will contract with, any debarred or suspended party under the foregoing regulations.

The Contractor and any Subcontractors have not been deemed ineligible to submit a bid on or be awarded a public contract or subcontract pursuant to Article 8 of the State Labor Law, specifically Labor Law § 220-b. In addition, neither the Contractor nor any Subcontractors have contracted with, or will contract with, any party that has been deemed ineligible to submit a bid on or be awarded a public contract or subcontract under Labor Law § 220-b.

In addition, the Contractor and any Subcontractors have not been deemed ineligible to submit a bid and have not contracted with and will not contract with any party that has been deemed ineligible to submit a bid under Executive Law § 316.

SECTION 6 RESTRICTIONS ON LOBBYING

The requirements of this section apply to all Contracts and Subcontracts greater than $100,000. Disregard this section if it does not apply to this Contract or Subcontract.

The Contractor and any Subcontractor executing a Contract or Subcontract in excess of $100,000 agree to provide to the Recipient an executed Certification Regarding Lobbying pursuant to 40 CFR Part 34 (“Lobbying Certification”) in the form attached hereto as Attachment 9, consistent with the prescribed form provided in Appendix A to 40 CFR Part 34.

PART 3:

GUIDANCE MATERIALS

APPLICABILITY OF PROGRAM REQUIREMENTS

This chart contains a listing of the SRF program requirements contained within this document, as well as the following details regarding each requirement: (1) its applicability, i.e., what types of contracts/subcontracts, particular monetary thresholds if applicable; (2) a section reference to the Required Contract Language that applies from Part 2; and (3) a section reference to the Guidance that applies from this Part.

Requirement	Applicability	Section of Required Contract Language from Part 2	Section of Appropriate Guidance from Part 3
Minority- and Women- Owned Business Enterprises (MWBE) and Disadvantaged Business Enterprises (DBE)	Contractors and Subcontractors working pursuant to: (1) Construction Contracts greater than $100,000 (2) Contracts that are initially under this threshold but subsequent change orders or Contract amendments increase the Contract value above $100,000 (3) Change orders greater than $25,000	1	1
Equal Employment Opportunities (EEO)	Contracts and Subcontracts greater than $10,000, with the exception of the EEO Workforce Employment Utilization Report requirement which applies to construction Contracts and Subcontracts greater than $50,000	1	1
Service-Disabled Veteran-Owned Businesses (SDVOB)	Not required, but strongly encouraged	2	2
American Iron and Steel (AIS)	All construction Contracts and Subcontracts for DWSRF projects and CWSRF treatment works projects	3	3
Davis-Bacon (DB) Prevailing Wages	All construction Contracts and Subcontracts greater than $2000 for either DWSRF projects or CWSRF treatment works projects	4	4
Suspension and Debarment	All Contracts and Subcontracts	5	5
Restrictions on Lobbying	All Contracts and Subcontracts greater than $100,000	6	6

SECTION 1 GUIDANCE FOR THE REQUIREMENTS AND PROCEDURES FOR BUSINESS PARTICIPATION OPPORTUNITIES FOR FEDERAL DISADVANTAGED BUSINESS ENTERPRISES AND NEW YORK STATE CERTIFIED MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISES AND EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITY GROUP MEMBERS AND WOMEN

I. Summary of EEO, MWBE, and DBE Forms

A. Forms to be Submitted Prior to Contract Execution

1. **EEO Policy Statement**
   To be submitted by the Contractor to the Recipient's Minority Business Officer ("MBO") prior to Contract execution. The "MBO" refers to the duly authorized representative of the SRF Recipient for MWBE and EEO purposes. This form is attached hereto as Attachment 1. See Required Contract Language, Section 1(II).

2. **EPA Form 6100-3 – DBE Subcontractor Performance Form**
   To be submitted by the Contractor to the MBO with its bid submission. This form is attached hereto as Attachment 7. See Required Contract Language, Section 1(III)(E).

3. **EPA Form 6100-4 – DBE Subcontractor Utilization Form**
   To be submitted by the Contractor to the MBO with its bid submission. This form is attached hereto as Attachment 8. See Required Contract Language, Section 1(III)(E).

4. **EPA Form 6100-2 – DBE Subcontractor Participation Form**
   To be submitted by the Subcontractors to the MBO prior to Contract execution. The Contractor must provide the form to the Subcontractors for completion. The Contractor should also submit documentation (e.g., email, letter, certified mail receipt) to the MBO that the 6100-2 form was made available to the MWBE Subcontractors. This form is attached hereto as Attachment 6. See Required Contract Language, Section 1(III)(E).

5. **MWBE Utilization Plan**
   To be submitted by the Contractor to the MBO after the bid opening, but in no case more than ten (10) business days after the Contractor receives notice from the Recipient that the Contractor has submitted a low bid. This form is attached hereto as Attachment 4. See Required Contract Language, Section 1(III)(B).

B. Forms to be Submitted During the Term of the Contract

1. **EEO Workforce Employment Utilization Report ("Workforce Report")**
   To be submitted by the Contractor to the MBO on a monthly basis during the term of the Contract. An exemplar form with instructions is attached hereto as Attachment 2. The actual Excel fillable form for Contractors and Subcontractors to complete will be e-mailed to MBOs by EFC at the start of the Contract term. See Required Contract Language, Section 1(II)(G).
2. **Request for Partial or Total Waiver**
   If applicable, to be submitted by the Contractor to the MBO at any time during the term of the Contract, but not later than prior to the submission of a request for final payment on the Contract. This form is attached hereto as Attachment 5. See Required Contract Language, Section 1(III)(C).
3. **Monthly MWBE Contractor Compliance Report ("Monthly MWBE Report")**
   To be submitted by the Contractor to the MBO by the third business day following the end of each month over the term of the Contract. This form is attached hereto as Attachment 3. See Required Contract Language, Section 1(III)(D).

II. Equal Employment Opportunities (EEO)

Pursuant to 41 CFR Part 60-4, the United States Department of Labor has established EEO goals for the employment of minorities and women. For federal and federally assisted construction Contractors, goals for minorities and females are established as a percentage participation rate. These goals are applicable to all of a Contractor's construction work sites (whether or not these sites are also the result of a federal Contract or are federally assisted). The goals are applicable to each nonexempt Contractor's total onsite construction workforce, regardless of whether or not part of that workforce is performing work on a federal, federally assisted or non-federally related project Contract or Subcontract. Contractors should apply to each work site the goal for the geographical area that each particular work site is located in. These goals, and further information, are available at:
https://www.dol.gov/ofccp/TAguides/TAC_FedContractors_JRF_QA_508c.pdf.

III. Business Participation Opportunities for MWBEs

A. Contract Goals

The goals provided herein (Required Contract Language, Section 1(III)(A)) are effective as of October 1, 2017. MWBE participation goals for a contract will be based on the goals in place at the time of the execution date of each respective contract, unless otherwise specified. In certain instances, the goals may vary, such as with projects co-funded by EFC and other state/federal agencies. With some co-funded projects, EFC may defer to the MBE and WBE participation goals and program established by those agencies.

Please contact EFC if you have any questions about the applicable MWBE participation goals for your contract.

B. Good Faith Efforts

The Contractor must make good faith efforts to develop an adequate MWBE Utilization Plan and must continue such good faith efforts in order to meet applicable MWBE participation goals. The Contractor shall maintain documentation of good faith efforts to solicit participation of MWBE firms for SRF-funded projects. If a Contractor is unable to meet contract MWBE participation goals, and submits a Request for Waiver, documentation of such good faith efforts must accompany the request. See Required Contract Language, Section 1(III)(C).

Contractor should also continue good faith efforts to seek opportunities for MWBE participation during the life of the contract even if proposed goals have been achieved.

Examples of documentation of good faith efforts are set forth below:

- Information on the scope of work related to the contract, such as a copy of the schedule of values from the bid submission, and specific steps taken to reasonably structure the scope of work to break out tasks or equipment needs for the purpose of providing opportunities for subcontracting with, or obtaining supplies or services from, MBEs or WBEs.

- Printed screenshots of the directory of Certified Minority- and Women- Owned Business Enterprises (“MWBE directory”) on ESD’s website on a Statewide basis, if appropriate, for both MBEs and WBEs that provide the services or equipment necessary for the contract. Contact the MBO for assistance in performing a proper search including identifying a sufficient number of solicitations to show that good faith effort was made.

- Copies of timely solicitations and documentation (e.g., faxes and emails) that the Contractor offered relevant plans, specifications, or other related materials to MBE and WBE firms on ESD’s MWBE directory to participate in the work, with the responses.

- A log prepared by the Contractor in a sortable spreadsheet documenting the Contractor's solicitation of MBEs and WBEs for participation as Subcontractors or suppliers pursuant to a contract. The log should consist of the list of MBE and WBE firms solicited, their contact information, the type of work they were solicited to perform (or equipment to provide), how the solicitation was made (fax, phone, email) and the contact information, the contacts name and the outcome. If a bid was received, the bid price should also be included in the log. See a sample log format below:

Date	M/WBE Type	Company	Scope of work	Contact Name	Phone/ Email	Solicitation Format	MWBE Response	Negotiation Required?	Selected? If not, Explain

If no response was received to an initial solicitation, at least one follow-up solicitation should be made in a different format than the first, e.g. fax followed by phone call. Any bids received from non-MWBE firms for the same areas MWBEs were solicited should also be tracked on the log.

- Copies of the EPA 6100-3 and 6100-4 forms that are required with the bid submission. A properly completed EPA 6100-3 form is good indication of a contact to an MWBE and their response to the contact. If solicitations do not result in obtaining sufficient participation of MWBE firms due to non-responsiveness, please contact the MBO or EFC MWBE representative for support.

- Copies of any advertisements of sufficient duration to effectively seek participation of certified MBE and WBEs timely published in appropriate general circulation, trade and MWBE oriented publications, together with listing and dates of publication of such advertisements. EFC recommends the use of the NYS Contract Reporter that is free to all Contractors - https://www.nyscr.ny.gov/. A log should be kept of the responses to the ads, similar to the log for MWBE firm solicitation and should include the non-MWBE firms that responded and the bid prices. Any negotiations should be documented in the log.

- Documents demonstrating that insufficient MBEs or WBEs are reasonably available to perform the work.

- A written demonstration that the Contractor offered to make up any inability to meet the project MWBE participation goals in other contracts and/or agreements performed by the Contractor on another SRF funded project.

- The date of pre-bid, pre-award, or other meetings scheduled by the Recipient, if any, and the contact information of any MBEs and WBEs who attended and are capable of performing work on the project.

- Any other information or documentation that demonstrates the Contractor conducted good faith efforts to provide opportunities for MWBE participation in their work. For instance, Prime Contractors and MBOs should develop a list of MWBE firms that have expressed interest in working on SRF-funded projects

- The use of certified DBE and small businesses certified through the US Small Business Administration (SBA) may be considered as a demonstration of Good Faith Efforts.

C. MWBE Utilization Plan

1. The MWBE Utilization Plan must be submitted to the Recipient's MBO after the bid opening, but in no case more than ten (10) business days after the Contractor receives notice from the Recipient that the Contractor has submitted a low bid.

2. The MBO will evaluate a completed MWBE Utilization Plan. If the MBO finds the Utilization Plan sufficient, it will be forwarded to EFC for review. If the MBO finds the Utilization Plan insufficient, the MBO will work with the Contractor to address deficiencies before submitting to EFC for review. A written notice of acceptance or deficiency will be issued by EFC within 20 business days of receipt of the Utilization Plan. Upon receipt of a notice of deficiency from either the MBO or EFC, the Contractor shall respond with a written remedy to such notice within seven (7) business days of receipt.
3. In coordination with the MBO, EFC will accept an MWBE Utilization Plan upon consideration of many factors, including the following:

    a. The MWBE Utilization Plan indicates that the proposed goals for the project will be achieved;
    b. A Contractor, who is a certified MBE or WBE, will be credited for up to 100% of the category of their certification. However, good faith efforts to seek participation in the other category are also required; and,
    c. Adequate documentation to demonstrate good faith efforts and/or support a specialty equipment/services waiver as described below in Section III(E).

4. EFC reserves the right to request additional information and/or documentation to support the adequacy of the MWBE Utilization Plan.
5. Within 10 days of EFC's acceptance of a MWBE Utilization Plan, EFC will post the approved Utilization Plan on the EFC website.
6. In coordination with the MBO, EFC may issue conditional acceptance of Utilization Plans pending submission of additional documentation that demonstrates there will be an increase in MWBE participation.

D. Eligibility for MWBE Participation Credit

1. To receive MWBE participation credit, Contractors or Subcontractors performing work that have been identified in an approved MWBE Utilization Plan must be certified as an MBE or WBE by ESD.
2. Prime Contractors may also include second or lower tier Subcontractors (Subcontractors hired by Subcontractors) on their MWBE Utilization Plan.
3. Credit for MWBE participation shall be granted only for MWBE firms performing a commercially useful business function according to custom and practice in the industry.
    a. Factors to be used in assessing whether an MWBE is performing a commercially useful function include:
        i. The amount of work subcontracted;
        ii. Industry practices;
        iii. Whether the amount the MWBE is to be paid under the contract is commensurate with the work it is to perform;
        iv. The credit claimed towards MWBE utilization goals for the performance of the work by the MWBE; and,
        v. Any other relevant factors.

    b. "Commercially useful functions" normally include:
        i. Providing technical assistance to a purchaser prior to a purchase, during installation, and after the supplies or equipment are placed in service;
        ii. Manufacturing or being the first tier below the manufacturer of supplies or equipment;
        iii. Providing functions other than merely accepting and referring requests for supplies or equipment to another party for direct shipment to a Contractor; or,
        iv. Being responsible for ordering, negotiating price, and determining quality and quantity of materials and supplies.
    c. For construction Contracts or Subcontracts, the following rules apply when calculating MWBE utilization:
        i. The portion of a Contract or Subcontract with an MWBE serving as a manufacturer that shall be deemed to represent the commercially useful

function performed by the MWBE shall be 100% of the total value of the Contract or Subcontract.

ii. the portion of a Contract or Subcontract with an MWBE serving as a supplier (as denoted by a NAICS code beginning with 423 or 424, or a NIGP code that does not begin with the number 9), and so designated in ESD's Directory, that shall be deemed to represent the commercially useful function performed by the MWBE shall be 60% of the total value of the Contract or Subcontract.

iii. the portion of a Contract or Subcontract with an MWBE serving as a broker (as denoted by NAICS code 425120) that shall be deemed to represent the commercially useful function performed by the MWBE shall be the monetary value for fees, or the markup percentage, charged by the MWBE.

4. No credit will be granted for MWBEs that do not perform a commercially useful function. An MWBE does not perform a commercially useful function if its role adds no substantive value and is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of participation.

E. Requests for Waiver

1. If the Contractor's application of good faith efforts does not result in the utilization of MWBE firms to achieve the aforementioned goals or a specialty equipment/service waiver is requested, the Contractor may request a full or partial waiver of MWBE participation goals by completing a Request for Waiver form, attaching appropriate documentation of good faith efforts, and submitting same to the MBO. See also Required Contract Language, Section 1(III)(C). Even if an MWBE waiver is granted, EEO information must still be submitted.
2. The MBO and EFC will review each waiver request based on the good faith effort criteria presented above and the documentation submitted with the waiver request. EFC will not issue any automatic waivers from MWBE responsibilities.
3. In cases where EFC accepts a full or partial waiver of MWBE participation goals, the waiver request will be posted to EFC's website.
4. Specialty Equipment/Service Waiver: A specialty equipment/service waiver may be granted in cases where:

    a. equipment is made by only one non-MWBE manufacturer,
    b. the technical specifications call for equipment that is not available through an MWBE supplier;
    c. the equipment is constructed on site by specially trained non-MWBE labor;
    d. the service is not available through an MWBE (such as work done by National Grid);
    e. the service is proprietary in nature (such as use of certain computer software necessary for control systems); or,
    f. the service cannot be subcontracted (such as litigation services).

    If the contract includes specialty equipment or services, and documentation is submitted demonstrating that there are no MWBE firms capable of completing this portion of the contract, the specialty amount of the contract may be deducted from the total contract amount to determine the MWBE Eligible Amount and the goals will be applied to the MWBE Eligible Amount. This determination is made at the discretion of the MBO and EFC.

    Example:
    $200,000 - $50,000 = $150,000
    (Contract) (Specialty equipment/service) (MWBE Eligible Amount)
    The MWBE goal is applied to the MWBE Eligible Amount.

    A request for this specialty equipment/service deduction can be completed by filling out a Request for Waiver form and submitting it to the MBO. The request must include a copy of the page from the contract where the equipment/ service is described and the cost of each item. For construction contracts, the schedule of values or bid tabulation sheet

should also be submitted. Additional documentation may be requested by the MBO or EFC.

IV. Subcontractor's Responsibilities

Subcontractors should:

1. Maintain their MWBE certifications, and notify the Contractor and MBO of any change in their certification status.
2. Notify the Contractor of any MWBE Subcontractors they hire so they may be included on the Contractor's Utilization Plan.
3. Respond promptly to solicitation requests by completing and submitting bid information in a timely manner.
4. Maintain business records that should include, but not be limited to, contracts/agreements, records of receipts, correspondence, purchase orders, and canceled checks.
5. Complete and submit the EPA Form 6100-3 - DBE Subcontractor Performance Form to the Contractor prior to submission of the Contractor's bid to the Recipient.
6. Complete and return EPA Form 6100-2 - DBE Subcontractor Participation Form to the Recipient prior to Contractor's execution of the contract.
7. Ensure that a required EEO Policy Statement and applicable MWBE requirements are included in each subcontract.
8. Notify the MBO and EFC when contract problems arise, such as non-payment for services or when the Subcontractor is not employed as described in the MWBE Utilization Plan.

V. Protests/Complaints

Contractors or Subcontractors who have any concerns, issues, or complaints regarding the implementation of the SRF MWBE & EEO Program, or wish to protest should do so in writing to the MBO and EFC. The MBO, in consultation with EFC, will review the circumstances described in the submission, investigate to develop additional information, if warranted, and determine whether action is required. If the Contractor or Subcontractor believes the issue has not been resolved to their satisfaction, they may appeal in writing to EFC for consideration.

VI. Waste, Fraud and Abuse

Subcontractors, Contractors, or Recipients who know of or suspect any instances of waste, fraud, or abuse within the MWBE & EEO Program should notify the project MBO and EFC immediately. Additionally, suspected fraud activity should be reported to the USEPA – Office of Inspector General Hotline at (888) 546-8740, the New York State Office of Inspector General at (800) 367-4448, or the ESD Compliance Office at (212) 803-3266.

SECTION 2 GUIDANCE FOR NEW YORK STATE CERTIFIED SERVICE-DISABLED VETERAN-OWNED BUSINESS ENTERPRISES ("SDVOB") PARTICIPATION OPPORTUNITIES

Contractor may contact the Office of General Services' Division of Service-Disabled Veteran's Business Development at 518-474-2015 or VeteransDevelopment@ogs.ny.gov to discuss methods of maximizing participation by SDVOBs on the Contract. The directory of New York State Certified SDVOBs can be viewed at: http://ogs.ny.gov/Core/SDVOBA.asp

Please contact EFC if you have any questions about utilizing SDVOBs on the Contract.

SECTION 3 GUIDANCE FOR AMERICAN IRON AND STEEL ("AIS") REQUIREMENT

Since 2014, if a Recipient uses CWSRF or DWSRF financial assistance to fund all or a part of the construction, alteration, maintenance or repair a public water system or treatment works, the Recipient must use iron and steel products that are produced in the United States for the whole project.

The AIS requirement does not apply to:

1. a project for which engineering plans and specifications were submitted for review by the responsible State agency before January 17, 2014 and approved by that agency before April 15, 2014; or
2. a project funded by a financial assistance agreement with EFC that was signed before January 17, 2014.

The term "iron and steel products" means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, construction materials. For one of the listed products to be considered subject to the AIS requirement, it must be made of greater than 50% iron and steel, measured by material cost (with the exception of reinforced precast concrete products).

The term "produced in the United States" means that all manufacturing processes of the iron or steel, including application of coatings, take place in the United States, with the exception of metallurgical processes involving refinement of steel additives. All manufacturing processes includes processes such as melting, refining, forming, rolling, drawing, finishing, fabricating and coating. Further, if a domestic iron and steel product is taken out of the US for any part of the manufacturing process, it becomes foreign source material. However, raw materials such as iron ore, limestone and iron and steel scrap are not covered by the AIS requirement and the material(s), if any, being applied as a coating are similarly not covered. Non-iron or steel components of an iron and steel product may come from non-US sources. For example, for products such as valves and hydrants, the individual non-iron and steel components do not have to be of domestic origin.

The EPA may waive the AIS requirement for a treatment works project if:

1. applying the requirement would be inconsistent with the public interest;
2. iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or
3. inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

A request for a waiver to use foreign iron or steel products must include adequate information for EPA's evaluation of the request, including:

1. A description of the foreign and domestic iron, steel, and/or manufactured goods;
2. Unit of measure;
3. Quantity;
4. Cost;
5. Time of delivery or availability;
6. Location of the project;
7. Name and address of the proposed supplier; and,
8. A detailed justification for use of foreign iron or steel products.

Requests for AIS waivers are to be submitted to EFC. Upon review, EFC will submit AIS waiver requests to EPA. When EPA receives a request for a waiver, EPA will publish the request and any accompanying material on EPA's official public Internet site, allowing informal public input on the request for at least 15 days before granting or denying the waiver request.

Additionally, EPA has the authority to issue waivers that are national in scope. National waivers may be for specific products or in the public's interest. These waivers can be found at EPA's website at: https://www.epa.gov/cwsrf/american-iron-and-steel-requirement-approved-national-waivers-0
The "De Minimis Waiver" is noteworthy. The waiver permits the use of iron and steel products when they occur in de minimis incidental components of DWSRF or CWSRF projects, as long as:

1. the funds used for the de minimis incidental components cumulatively comprise no more than 5% of the total cost of the materials used in a project; and,
2. the cost of an individual item does not exceed 1% of the total cost of the materials used in the project.

Items covered by the de minimis waiver are:

1. essential, but incidental to the construction;
2. incorporated into the physical structure of the project; and,
3. often low-cost and bought in bulk.

Examples of "de minimis" items include: washers, screws, nuts, bolts, fasteners, miscellaneous wire, corner bead, ancillary tubing, etc.

Examples of items that are NOT incidental and therefore are not considered "de minimis" include: process fittings, tees, elbows, flanges, brackets, valves, sewer or water pipes for distribution, treatment or storage tanks, large structural support systems, etc.

To use the de minimis waiver, Contractors should prepare a record in spreadsheet form that tracks the cost of all materials incorporated into the project. This spreadsheet can be either project specific or contract specific. If it is contract specific, a material tracking record for each construction contract should be prepared and items that are subject to the AIS de minimis waiver should be highlighted. There should be a clear calculation available to indicate that the cost of the de minimis iron and steel items is 5% or less of the total cost of all materials.

Additional information, guidance and Questions and Answers about the State Revolving Fund American Iron and Steel (AIS) requirement can be found at EPA's website: https://www.epa.gov/cwsrf/state-revolving-fund-american-iron-and-steel-ais-requirement

SECTION 4 GUIDANCE FOR APPLICABLE LABOR STANDARDS

I. Davis-Bacon Act

The Davis-Bacon Act requires Contractors and Subcontractors performing construction, alteration and repair work under Contracts in excess of $2,000 funded from SRF monies, to pay their laborers and mechanics not less than the prevailing wage and fringe benefits for the geographic location.

For purposes of this section, "State Recipient" means EFC.

A. Requirements for Recipients.

This guidance describes how Recipients assist EPA in meeting its Davis-Bacon (DB) responsibilities when DB applies to EPA awards of financial assistance under the Water Resources Reform and Development Act of 2014 (WRRDA) with respect to State Recipients and Recipients. Recipients with questions about when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring should contact the State Recipient. Recipients can also obtain guidance from DOL's web site at http://www.dol.gov/whd/

1. Applicability of the Davis- Bacon (DB) prevailing wage requirements. Under the Water Resources Reform and Development Act of 2014 (WRRDA), DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund. If a Recipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the

Recipient must discuss the situation with the State Recipient before authorizing work on that site.

2. Obtaining Wage Determinations.

(a) Recipients must obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations must be incorporated into solicitations and any subsequent Contracts. Prime Contracts must contain a provision requiring that Subcontractors follow the wage determination incorporated into the prime Contract.

(i) While the solicitation remains open, the Recipient must monitor www.wdol.gov weekly to ensure that the wage determination contained in the solicitation remains current. Recipients must amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the Recipient may request a finding from the State Recipient that there is not a reasonable time to notify interested Contractors of the modification of the wage determination. The State Recipient will provide a report of its findings to the Recipient.

(ii) If the Recipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State Recipient, at the request of the Recipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The Recipient shall monitor www.wdol.gov on a weekly basis if it does not award the Contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(b) If the Recipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing Contractor (ordering instrument) rather than by publishing a solicitation, the Recipient must insert the appropriate DOL wage determination from www.wdol.gov into the ordering instrument.

(c) Recipients must review all Subcontracts subject to DB entered into by prime Contractors to verify that the prime Contractor has required its Subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a Recipient's Contract after the award of a Contract or the issuance of an ordering instrument if DOL determines that the Recipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the Contract or ordering instrument. If this occurs, the Recipient must either terminate the Contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the Contract or ordering instrument by change order. The Recipient's Contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

B. Additional requirements for Recipients that are not governmental entities

Recipients that are not governmental entities must submit their proposed DB wage determinations to the State Recipient for approval prior to including the wage determinations in any solicitation, Contract or issuing task orders, work assignments, or similar instruments to existing Contractors, as well as ordering instruments unless subsequently directed otherwise by the State Recipient award official as identified below.

Recipients must obtain proposed wage determinations for specific localities at www.wdol.gov. After the Recipient obtains its proposed wage determination, it must submit the wage determination to the State Recipient award official at: Timothy Burns, P.E., Director, Engineering and Program Management, New York State Environmental Facilities Corporation, at 518-402-7396 or at the following email address: Timothy.Burns@efc.ny.gov.

C. Compliance Verification

(a) The Recipient must periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that Contractors or Subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The Recipient must use Standard Form 1445 or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The Recipient must establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by Contractors or Subcontractors and the duration of the Contract or Subcontract. Recipients must increase the frequency of the interviews if the initial interviews or other information indicates that there is a risk that the Contractor or Subcontractor is not complying with DB. Recipients must immediately conduct necessary interviews in response to an alleged violation of the prevailing wage requirements. All interviews must be conducted in confidence.

(c) The Recipient must periodically conduct spot checks of a representative sample of weekly payroll data to verify that Contractors or Subcontractors are paying the appropriate wage rates. The Recipient must establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by Contractors or Subcontractors and the duration of the Contract or Subcontract. At a minimum, the Recipient must spot check payroll data within two weeks of each Contractor or Subcontractor's submission of its initial payroll data and two weeks prior to the completion date the Contract or Subcontract. Recipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the Contractor or Subcontractor is not complying with DB. In addition, during the examinations the Recipient must verify evidence of fringe benefit plans and payments thereunder by Contractors and Subcontractors who claim credit for fringe benefit contributions.

(d) The Recipient must periodically review Contractors' and Subcontractors' use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that Contractors and Subcontractors are not using disproportionate numbers of laborers, trainees and apprentices. These reviews must be conducted in accordance with the schedules for spot checks and interviews described in Item (b) and (c) immediately above.

(e) Upon the request of EFC, the Recipient must provide EFC with a written certification indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies from Contractors/Subcontractors for the specified week.

(f) Recipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at www.wdol.gov.

II. Applicable State and Local Labor Standards

Contractors and Subcontractors working under a public works contract subject to DBRA may also be subject to additional labor standards, including but not limited to prevailing wage requirements, under State and local laws. When preparing the bid for SRF project, the Contractor, and any Subcontractors, must use the higher of the prevailing federal, state, or applicable local wage rates paid to each trade.

III. Responsibilities of Contractors and Subcontractors

After execution of any SRF eligible Contracts, the Contractor and Subcontractor have the following responsibilities:

1. Post Davis Bacon Wage Poster and applicable federal, state, and local wages in a visible area at the construction site. This poster may be found on the EFC website under the Resource Library. (Refer to the attached required forms)
2. Make your employees available for wage interviews if necessary. Wage interviews must be conducted confidentially and using Labor Standard Interview Form (SF-1445). (Refer

to the attached required forms)

3. Use federal payroll form WH-347 and complete the certifications on the back. If another form is being used, inform the Recipient and obtain a determination that the form is equivalent to the federal form. (Refer to the attached required forms)
4. Pay the higher of applicable prevailing federal, state, or local wages, including benefits (fringe & holidays), to each trade and overtime not less than one and one-half times the basic rate of pay for hours in excess of forty hours on Contracts in excess of $100,000. The wage rates apply to Subcontractor trades as well.
5. Maintain proof of apprentice and trainee ratios for both Contractor and Subcontractor and certifications onsite.
6. Pay wages to your employees and your Subcontractors on a weekly basis. Ensure that your Subcontractors are paying their employees weekly.
7. Ensure that the Subcontracts contain the Davis Bacon contract language, the applicable federal, state, or local wage determinations and equal employment opportunity language. This language is provided in the Part 2: Required Contract Language. Federal wage determinations are available at www.wdol.gov.
8. Provide payroll forms and apprentice and trainee certifications to the Recipient for their records.
9. Report potential waste, fraud and abuse violations to the EPA Davis Bacon Contact and DOL Wages and Hours District Office found on their website. www.wdol.gov/. Any violations in payroll reporting or unpaid wages are subject to a daily monetary penalty.

SECTION 5 GUIDANCE FOR REQUIREMENTS REGARDING SUSPENSION AND DEBARMENT

A list of debarred and suspended contractors, pursuant to 2 CFR Parts 180 and 1532 and 29 CFR § 5.12, is available on the US Department of Labor's website at https://www.sam.gov/portal/public/SAM/.

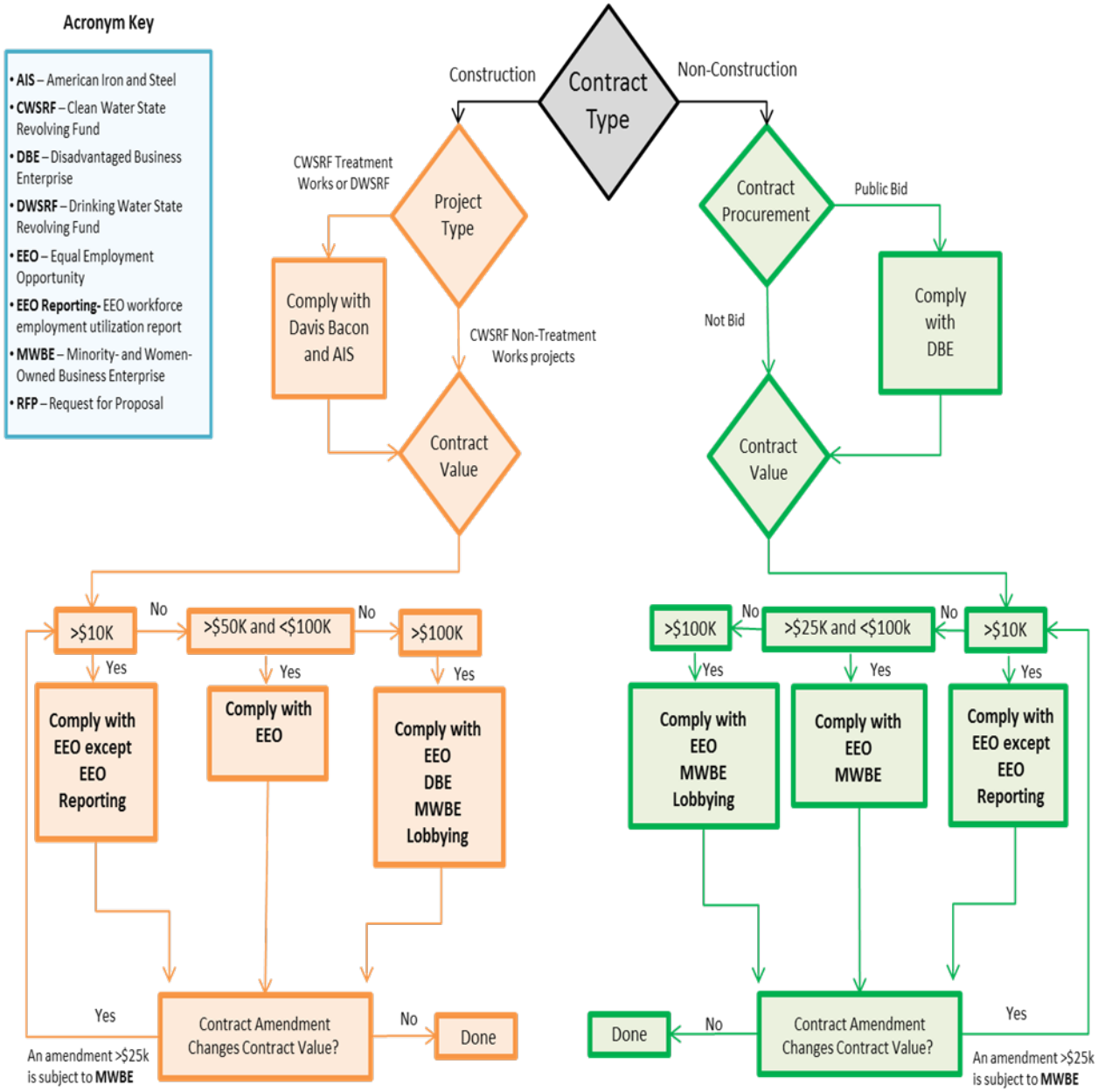
A list of contractors and subcontractors deemed ineligible to submit a bid on or be awarded a public contract or subcontract, pursuant to Article 8 of the State Labor Law, is available on the New York State Department of Labor's website at http://labor.ny.gov/workerprotection/publicwork/PDFs/debarred.pdf

A list of contractors deemed ineligible to submit a bid is maintained by Empire State Development's Division of Minority and Women's Business Development.

SECTION 6 GUIDANCE FOR RESTRICTIONS ON LOBBYING

Each Contractor and any Subcontractor that has a Contract or Subcontract exceeding $100,000 shall provide to the Recipient a completed Certification Regarding Lobbying pursuant to 40 CFR Part 34 ("Lobbying Certification") in the form attached hereto as Attachment 9 consistent with the prescribed form provided in Appendix A to 40 CFR Part 34. The form provides a certification that the Contractor or Subcontractor will not expend appropriated federal funds to pay any person for influencing or attempting to influence an officer or employee of any agency, Member of Congress, officer or employee of Congress or any employee of any Member of Congress in accordance with the provisions of 40 CFR Part 34, and to maintain such certification for their own records. It is noted that disbursement of funds may be withheld until the Lobbying Certification form has been received by the Recipient.

SECTION 7 PROGRAM CONTRACT REQUIREMENT DECISION TREE



SECTION 8 SUMMARY OF CONTRACTOR REQUIREMENTS FOR SRF-FUNDED PROJECTS

Forms can be found as attachments to this document or online at www.efc.ny.gov

Forms should be submitted electronically via email or through EFC's dropbox

	Refer to Part 3 Guidance Section
To be submitted with this bid:	
☐ EEO Policy Statement	Section 1
☐ Documented Proof that EPA Form 6100-2 - DBE Subcontractor Participation Form was given to MWBE Subcontractors	Section 1
☐ EPA Form 6100-3 - DBE Subcontractor Performance Form	Section 1
☐ EPA Form 6100-4 - DBE Subcontractor Utilization Form	Section 1
☐ Lobbying Certification	Section 6
☐ AIS Contractor's Certification	Section 3
To be submitted prior to or upon Contract award:	
☐ Executed Contracts, Subcontracts, agreements, and purchase orders	
☐ MWBE Utilization Plan and/or Waiver Request	Section 1
Tasks for construction start:	
☐ Ensure that all Subcontracts contain Part 2: Required Contract Language	
☐ Post EEO Poster	Section 1
☐ Pay the higher of prevailing federal, state, or local wages including benefits	Section 4
☐ Post Davis Bacon Wage Poster AND Wage Rates	Section 4
☐ Use Federal Payroll Form (WH-347)	Section 4
☐ Obtain apprentice and trainee certifications	Section 4
☐ Obtain AIS Manufacturer's Certifications for all iron & steel products	Section 3
Ongoing documentation & tasks:	
☐ EEO Workforce Utilization Report	Section 1
☐ Submit Monthly MWBE Reports to MBO	Section 1
☐ Maintain weekly certified payrolls for all Prime & Subcontractors	Section 4
☐ Maintain proof of payments for MWBE Subcontractors	Section 1
☐ Maintain AIS Manufacturer's Certifications	Section 3

Attachment 1
New York State Environmental Facilities Corporation
EQUAL EMPLOYMENT OPPORTUNITY POLICY STATEMENT
NEW YORK STATE REVOLVING FUND (SRF)

I, _____, am the authorized representative of _____.
Name of Representative Name of Contractor/Service Provider
I hereby certify that _____ will abide by the equal employment
Name of Contractor/Service Provider
opportunity (EEO) policy statement provisions outlined below.

(i) The Contractor will not discriminate on the basis of race, creed, color, national origin, sex, age, disability, or marital status against any employee or applicant for employment, will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination and will make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force on Contracts relating to SRF projects.

(ii) The Contractor shall state in all solicitations or advertisements for employees that, in the performance of the Contract relating to this SRF project, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.

(iii) The Contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union, or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status, and that such union or representative will affirmatively cooperate in the implementation of the Contractor's obligations herein.

(iv) The Contractor shall comply with the provisions of the Human Rights Law (Article 15 of the Executive Law), including those relating to non-discrimination on the basis of prior criminal conviction and prior arrest, and with all other State and federal statutory and constitutional non-discrimination provisions, including Titles VI and VII of the Civil Rights Act of 1964, 40 CFR Part 7, 41 CFR Part 60-1 Subpart A, 41 CFR Part 60-4, Section 504 of the Rehabilitation Act of 1973, and the Age Discrimination Act of 1975. The Contractor and Subcontractors shall not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex, national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status.

(v) The Contractor will include the provisions of subdivisions (i) through (iv) in every Subcontract in such a manner that the requirements of these subdivisions will be binding upon each Subcontractor as to work in connection with the Contract.

X _____

Contractor/Service Provider Representative

Attachment 2
Instructions for Completing and Submitting the Equal Employment Opportunity Workforce Utilization Report

The Equal Employment Opportunity ("EEO") Workforce Utilization Report ("Report") is used by contractors and subcontractors to report the actual workforce utilized in the performance of the contract broken down by job title for a particular reporting period. When the workforce utilized in the performance of the contract can be separated out from the contractor's and/or subcontractor's total workforce, the contractor and/or subcontractor shall submit a Report of the workforce utilized on the contract. When the workforce to be utilized on the contract cannot be separated out from the contractor's and/or subcontractor's total workforce, information on the contractor's and/or subcontractor's total workforce shall be included in the Report.

Instructions for Completing the Report

1. **Reporting Entity.** Check off the appropriate box to indicate if the entity completing the Report is the contractor or a subcontractor.

2. **Federal Employer Identification Number ("FEIN").** Enter the FEIN assigned by the Internal Revenue Service ("IRS") to the contractor or subcontractor for which the Report has been prepared. If the contractor or subcontractor uses a social security number instead of a FEIN, leave this field blank. The contractors and subcontractors for recipients of a grant only (such as an Engineering Planning Grant (EPG), a Water Infrastructure Improvement Act (WIIA) grant, or an Intermunicipal Grant Program (IMG) grant) do not need to fill out this section of the Report.

3. **Name.** Enter the name of the contractor or subcontractor for which the Report has been prepared.

4. **Address.** Enter the address of the contractor or subcontractor for which the Report has been prepared.

5. **Contract Number.** Enter the number of contract that the Report applies to, if applicable.

6. **Reporting Period / Month.** Check off the box that corresponds to the applicable quarterly or monthly (not both) reporting period for this Report. The Report is to be submitted on a monthly basis for construction contracts, and a quarterly basis based on the calendar quarter for all other contracts, during the life of the contract.

7. **Workforce Identified in Report.** Check off the appropriate box to indicate if the workforce being reported is just for the contract or the contractor's or subcontractor's total workforce.

8. **Preparer's Name, Preparer's Title, Date.** Enter the name and title for the person completing the Report, enter the date upon which the Report was completed, and check the box accepting the name entered into the Report as the digital signature of the preparer.

9. **Occupation Classifications (SOC Major Group) and SOC Job Title.** First, enter the applicable Occupation Classification (SOC Major Group) so a dropdown menu appears under SOC Job Title. Choose the SOC Job Title that best describes the worker.

10. **EEO Job Title and SOC Job Code.** The EEO Job Title and the SOC Job Code will automatically populate in the spreadsheet based upon the Occupation Classifications (SOC Major Group) and SOC Job Title selected. Please do not modify the information populated in these fields.

11. **Race/Ethnic Identification**. Race/ethnic designations do not denote scientific definitions of anthropological origins. For the purposes of this Report, an employee must be included in the group to which he or she appears to belong, identifies with, or is regarded in the community as belonging. However, no person should be counted in more than one race/ethnic group. The race/ethnic categories for this Report are:

    - **WHITE** (not of Hispanic origin) all persons having origins in any of the original peoples of Europe, North Africa, or the Middle East.
    - **BLACK/AFRICAN AMERICAN** a person, not of Hispanic origin, who has origins in any of the black racial groups of the original peoples of Africa.
    - **HISPANIC/LATINO** a person of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race.
    - **ASIAN, NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER** a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent or the Pacific Islands.
    - **NATIVE AMERICAN/ALASKAN NATIVE** a person having origins in any of the original peoples of North America, and who maintains cultural identification through tribal affiliation or community recognition.

12. **Number of Employees and Number of Hours.** Enter the number of employees and the total number of hours worked by such employees for each SOC Job Title under the columns corresponding to the gender and racial/ethnic groups with which the employees most closely identify.

13. **Total Compensation.** Enter the total compensation paid to all employees for each SOC Job Title, each gender, and each racial/ethnic group. Contractors and subcontractors should report only compensation for work on the contract paid to employees during the period covered by the Report. Compensation should include only sums which must be reported in Box 1 of IRS Form W-2. The contractors and subcontractors for recipients of a grant only (such as an EPG, a WIIA, or an IMG grant) do not need to fill out this section of the Report.

14. **For EFC Use Only.** This section is for EFC use only and does not need to be filled out by the contractor/subcontractor.

Instructions for Submitting the Report

The Report is to be submitted on a monthly basis for construction contracts, and a quarterly basis based on the calendar quarter for all other contracts, during the life of the contract.

EFC will provide a Report form in Excel format to the Recipient's Minority Business Officer ("MBO"). The Recipient's MBO is responsible for providing the Report form to all contractors. Each contractor is responsible for providing the Report form to all subcontractors.

Reports are to be submitted electronically in Excel format, using the Report form provided, within ten (10) days of the end of each month or quarter, whichever is applicable. For example, the January monthly Report for a construction contract is due by February 10th and the January – March quarterly Report for a non-construction contract is due by April 10th.

Once the Report form has been completed, each contractor/subcontractor must submit the Report form to EFC and the Recipient's MBO. The Report form must be submitted to EFC according to the following instructions:

1. Go to www.efc.ny.gov/eeoreporting.
2. Enter the requested information pursuant to the instructions on the page. Make sure to choose the correct applicable funding program (Clean Water State Revolving Fund (SRF), Drinking Water SRF, non-SRF Grant Only (e.g. EPG, WIIA, IMG)) and the correct reporting period (reporting

quarter for non-construction OR reporting month for construction). Enter the reporting period of the data, not the date it's submitted.

3. Submit your Report(s) pursuant to the instructions on the page.
4. If you are a contractor, use the naming convention provided by EFC (in the "For EFC Use Only" section of the Report form) for naming the file for upload (i.e., Funding Program – Project Number– Contractor short name (up to fifteen characters) – MWBE ID). The funding programs include CW (clean water SRF), DW (drinking water SRF), and GO (non-SRF grant only). If you are a subcontractor, use the naming convention provided by EFC and replace the contractor's short name with the first fifteen characters of the subcontractor's name, omitting any spaces or special characters.

Questions

If you have questions about or require assistance completing or submitting the Report, please contact EFC at mwbe@efc.ny.gov or 518-402-6924.

NYSEFC EEO Workforce Utilization Report

Reporting Entity ☐ Contractor ☐ Subcontractor

FEIN

Contractor Name

Contractor Address

Contract Number

Reporting Period - Select One

☐ January 1 - March 31	☐ April 1 - June 30
☐ July 1 - September 30	☐ October 1 - December 31

Reporting Month - Select One

☐ January		☐ February		☐ March
☐ April		☐ May		☐ June
☐ July		☐ August		☐ September
☐ October		☐ November		☐ December

Workforce Identified in Report

☐ Workforce Utilized in Performance of Contract
☐ Contractor/Subcontractor's Total Workforce

Preparer's Name:

Preparer's Title:

Date:

☐ By checking this box, I certify that I personally completed this document and I adopt the name typed above as my electronic signature under the NYS Electronic Signatures and Records Act, with like legal force and effect as if I had physically signed the document.

Occupation Classifications (SOC Major Group)	SOC Job Title	EEO Job Title	SOC Job Code	Number of Employees and Hours Worked by Race/Ethnic Identification During Reporting Period																													
				White						Black/African American						Hispanic/Latino						Asian/Native Hawaiian or Other Pacific Islander						Native American/Alaskan Native					
				Male			Female			Male			Female			Male			Female			Male			Female			Male			Female		
				No. of Employees	No. of Hours	Total Compensation	No. of Employees	No. of Hours	Total Compensation	No. of Employees	No. of Hours	Total Compensation	No. of Employees	No. of Hours	Total Compensation	No. of Employees	No. of Hours	Total Compensation	No. of Employees	No. of Hours	Total Compensation	No. of Employees	No. of Hours	Total Compensation	No. of Employees	No. of Hours	Total Compensation	No. of Employees	No. of Hours	Total Compensation	No. of Employees	No. of Hours	Total Compensation
		#N/A	#N/A																													

Attachment 3
New York State Environmental Facilities Corporation
Monthly Minority- & Women- Owned Business Enterprise (MWBE) Contractor Compliance Report
("Monthly MWBE Report")

Instructions:

- Contractors are to complete the report in Word version and email to the Recipient's Minority Business Officer ("MBO") on a monthly basis.
- If you require additional pages, you may find them on EFC's website at www.efc.ny.gov.
- **All** MWBE Subcontractors for this contract **MUST** be listed on the form regardless of whether they were paid this month.
- Please save Report as "*MReport – (Project No). – (Municipality) – (Firm Name) – (Date)*" and send the Word version of this document.
- Proofs of payment in the amounts shown below must be transmitted to the MBO with the report.

Municipality:	County:	Contract ID:	Month:	Year:
Project No.:	GIGP/EPG No:	Registration No. (NYC only):		

Prime Contractor/Service Provider:	Award Date:	Start Date:	**Date all MWBE subs paid in full:**

Signature of Contractor: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief. Date:

Last Month's Contract **Amt:** $ Revised Contract Amt: $	**MWBE Eligible Amt**: $ (Goals are applied to this amount and includes eligible change orders, amendments & waivers)	**EFC MWBE Goals** MBE: % MBE Amt: $ WBE: % WBE Amt: $ Total: % Total Amt: $	**Total Paid to Prime** Total Paid this Month: $ Total Paid to Date: $

NYS Certified M/WBE Contractor & Subcontractor	Please Specify Any Revisions this Month.	Subcontractor Total Amount		Payments this Month	Previous Payments	Total Payments Made to Date
		Original	Revised			
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					

Attachment 3
New York State Environmental Facilities Corporation
Monthly Minority- & Women- Owned Business Enterprise (MWBE) Contractor Compliance Report
("Monthly MWBE Report")

NYS Certified M/WBE Contractor & Subcontractor	Please Specify Any Revisions this Month.	Subcontractor Contract Amount		Payments this Month	Previous Payments	Total Payments Made to Date
		Original	Revised			
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					

Attachment 3
New York State Environmental Facilities Corporation
Monthly Minority- & Women- Owned Business Enterprise (MWBE) Contractor Compliance Report
("Monthly MWBE Report")

NYS Certified M/WBE Contractor & Subcontractor	Please Specify Any Revisions this Month.	Subcontractor Total Amount		Payments this Month	Previous Payments	Total Payments Made to Date
		Original	Revised			
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					

Attachment 3
New York State Environmental Facilities Corporation
Monthly Minority- & Women- Owned Business Enterprise (MWBE) Contractor Compliance Report
("Monthly MWBE Report")

Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Name: Fed. Employer ID#: Select Only One: ☐ MBE ☐ WBE ☐ Other: Select Only One: ☐ Broker __% ☐Supplier ☐ N/A	☐ Subcontractor is REMOVED ☐ NEW Subcontractor ☐ Subcontract Amt. INCREASED ☐ Subcontract Amt. DECREASED					
Additional Pages can be found at www.efc.ny.gov TOTAL						

Please explain any revisions and note the scope of work that new subcontractors will be providing. Please note that change orders over $25K may require that good faith efforts be made to obtain additional MWBE participation:

Attachment 4
NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan

Instructions for Contractors & Service Providers:

Contractors and Service Providers must complete Sections 2 and 3. **Submit the completed, signed (electronic signature box checked and dated) form in Microsoft Word format to the Recipient's designated Minority Business Officer (MBO) no later than the date of contract execution.** Incomplete forms will be found deficient. If more than 10 subcontractors are used, additional pages for Section 3 can be found on EFC's website.

If the prime contract is being performed by the parties to a Joint Venture, Teaming Agreement, or Mentor-Protégé Agreement that includes a certified MWBE, please contact EFC for assistance.

MWBE firms must be certified by the NYS Empire State Development Corporation (ESD) in order to be counted towards satisfaction of MWBE participation goals. The utilization of certified MWBEs for non-commercially useful functions may not be counted towards utilization of certified MWBEs in the Utilization Plan. Please note whether a firm is serving as a broker or supplier on the contract. A broker is denoted by NAICS code 425120 and is designated as a broker in ESD's MWBE Directory. A supplier is denoted by a NAICS code beginning with 423 or 424, or a NIGP code that does not begin with the number 9, and is designated as a supplier in ESD's MWBE Directory. If a firm is serving as a broker, please additionally provide the percentage of the broker's commission on the contract.

See the Bid Packet at www.efc.ny.gov or consult your designated MBO for further guidance.

Instructions for Minority Business Officers (MBO):

The MBO must complete Section 1. The MBO may designate an Authorized Representative to complete and submit quarterly payment reports on its behalf, and, if so designated, the MBO's Authorized Representative must also complete Section 1. The Authorized Representative may only submit quarterly payment reports on behalf of the MBO and may not submit any other required forms or reports for the MBO. The MBO must complete Section 1 even if designating an Authorized Representative. **Submit the completed, signed (electronic signature box checked and dated) form in Microsoft Word format via e-mail to your EFC MWBE Representative.**

The subject heading of the e-mail to the EFC MWBE Representative should follow the format "UP, Project Number, Contractor." EFC will review the Utilization Plan and notify the MBO via e-mail of its acceptance or denial.

Within 10 days of EFC's acceptance of a Utilization Plan, EFC will post the approved Utilization Plan on the EFC website.

Attachment 4
NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan

SECTION 1: MUNICIPAL INFORMATION				
Recipient/Municipality:			**County:**	
Project No.:	**GIGP/EPG No.:**	**Contract ID:**	**Registration No. (NYC only):**	
Minority Business Officer:		**Email:**	**Phone #:**	
Address of MBO:				
Electronic Signature of MBO: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief.				**Date:**
Complete if applicable:				
Authorized Representative:		**Title:**		
Authorized Rep. Company:		**Email:**	**Phone #:**	
Electronic Signature of Authorized Rep.: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief.				**Date:**

SECTION 2: PRIME CONTRACTOR / SERVICE PROVIDER INFORMATION				
Firm Name:			**Contract Type:** ☐ Construction ☐ Other Services	
Prime Firm is Certified as: ☐ MBE ☐ WBE ☐ N/A ☐ Other: Please repeat information in the Utilization Plan below (Section 3). If dual certified, you must select either MBE or WBE.				
Address:		**Phone #:**	**Fed. Employer ID #:**	
Description of Work:				
Award Date:	**Start Date:**	**Completion Date:**	**MWBE GOAL Total**	**PROPOSED MWBE Participation**
Total Contract Amount: $ **MWBE Eligible Contract Amount:** $ (MWBE Goals are applied to this amount and includes all change orders, amendments, & waivers)			**MBE:** % $ **WBE:** % $ **Total:** % $	**MBE:** % $ **WBE:** % $ **Total:** % $

Attachment 4
NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan

SECTION 3: M/WBE SUBCONTRACTOR INFORMATION				
This Submittal is: ☐ The First/Original Utilization Plan ☐ Revised Utilization Plan #:				
NYS Certified M/WBE Subcontractor Info		**Contract Amount:**		**For EFC Use:**
		MBE ($)	**WBE ($)**	
Name:	**Fed. Employer ID#:**			
Address:	**Phone #:**			
Scope of Work:	**Email:**			
Select Only One: ☐ MBE ☐ WBE ☐ Other:	**Start Date:**			
Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	**Completion Date:**			
Full Contract Amount: $				
Name:	**Fed. Employer ID#:**			
Address:	**Phone #:**			
Scope of Work:	**Email:**			
Select Only One: ☐ MBE ☐ WBE ☐ Other:	**Start Date:**			
Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	**Completion Date:**			
Full Contract Amount: $				
Name:	**Fed. Employer ID#:**			
Address:	**Phone #:**			
Scope of Work:	**Email:**			
Select Only One: ☐ MBE ☐ WBE ☐ Other:	**Start Date:**			
Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	**Completion Date:**			
Full Contract Amount: $				
Name:	**Fed. Employer ID#:**			
Address:	**Phone #:**			
Scope of Work:	**Email:**			
Select Only One: ☐ MBE ☐ WBE ☐ Other:	**Start Date:**			
Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	**Completion Date:**			
Full Contract Amount: $				

Attachment 4
NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan

SECTION 3: M/WBE SUBCONTRACTOR INFORMATION continued				
Name:	**Fed. Employer ID#:**			
Address:	**Phone #:**			
Scope of Work:	**Email:**			
Select Only One: ☐ MBE ☐ WBE ☐ Other:	**Start Date:**			
Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	**Completion Date:**			
Full Contract Amount: $				
Name:	**Fed. Employer ID#:**			
Address:	**Phone #:**			
Scope of Work:	**Email:**			
Select Only One: ☐ MBE ☐ WBE ☐ Other:	**Start Date:**			
Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	**Completion Date:**			
Full Contract Amount: $				
Name:	**Fed. Employer ID#:**			
Address:	**Phone #:**			
Scope of Work:	**Email:**			
Select Only One: ☐ MBE ☐ WBE ☐ Other:	**Start Date:**			
Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	**Completion Date:**			
Full Contract Amount: $				
Name:	**Fed. Employer ID#:**			
Address:	**Phone #:**			
Scope of Work:	**Email:**			
Select Only One: ☐ MBE ☐ WBE ☐ Other:	**Start Date:**			
Select Only One: ☐ Broker __% ☐ Supplier ☐ N/A	**Completion Date:**			
Full Contract Amount: $				

SIGNATURE	
Electronic Signature of Contractor: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and that all MWBE subcontractors will perform a commercially useful function. **Name** (Please Type)**:**	**Date:**

Attachment 4
NYS Environmental Facilities Corporation
Minority- & Women- Owned Business Enterprise (MWBE) Utilization Plan

Attachment 5
New York State Environmental Facilities Corporation
Minority & Women Owned Business Enterprise (MWBE) Waiver Request Form

Instructions for Contractors & Service Providers:
Contractors and Service Providers must complete Sections 2, 3, and 4. **Submit the completed, signed (electronic signature box checked and dated) form in Microsoft Word format to the Recipient's designated Minority Business Officer (MBO).** Incomplete forms will be found deficient.

See the Bid Packet at www.efc.ny.gov or consult your designated MBO for further guidance.

Instructions for Minority Business Officers (MBO):
The MBO must complete Section 1. **Submit the completed, signed (electronic signature box checked and dated) form in Microsoft Word format via e-mail to your EFC MWBE Representative.** The subject heading of the e-mail to the EFC MWBE Representative should follow the format "Waiver Request, Project Number, Contractor." EFC will review and notify the MBO via e-mail of its acceptance or denial.

If a partial MWBE waiver is requested, an MWBE Utilization Plan must also be submitted for the amount of proposed MWBE participation.

SECTION 1: MUNICIPAL INFORMATION			
Recipient/Municipality:		**County:**	
Project No.:	**GIGP/EPG No.:**	**Contract ID:**	**Registration No. (NYC only):**
Minority Business Officer (MBO):		**Email:**	**Phone #:**
Address of MBO:			
Signature of MBO: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge and belief.			**Date:**

SECTION 2: PRIME CONTRACTOR / SERVICE PROVIDER INFORMATION			
Firm Name:			**Contract Type:** ☐ Construction ☐ Other Services
Prime Firm is Certified as: ☐ MBE ☐ WBE ☐ N/A ☐ Other:			
Address:		**Phone #:**	**Fed. Employer ID #:**
Contact Information of Firm Representative Authorized to Discuss Waiver Request: **Name:** **Title:** **Phone #:** **E-mail:**			
Description of Work:			**EFC MWBE GOAL Total**
Award Date:	**Start Date:**	**Completion Date:**	**MBE:** % $
Total Contract Amount: $ **MWBE Eligible Contract Amount:** $ (MWBE Goals are applied to this amount and includes all change orders, amendments, & waivers)			**WBE:** % $
			Total: % $

Attachment 5
New York State Environmental Facilities Corporation
Minority & Women Owned Business Enterprise (MWBE) Waiver Request Form

SECTION 3: TYPE OF MWBE WAIVER REQUESTED
1. ☐ **Full Waiver** (No MWBE participation) 2. ☐ **Partial Waiver** (Less than the MWBE goals; indicate below the proposed MWBE participation) **PROPOSED MWBE Participation** **MBE:** % $ **WBE:** % $ **Total:** % $ 3. ☐ **Specialty Equipment/Services Waiver** (Must be of SIGNIFICANT cost - list of equipment and cost must be attached in addition to the supporting documentation outlined below)

SECTION 4: SUPPORTING DOCUMENTATION
To be considered, the Request for Waiver Form must be accompanied by the documentation requested in items 1 – 9, as listed below. If a Specialty Equipment Waiver is requested, it must be accompanied by the documentation requested in items 1 - 13. If a Specialty Services Waiver is requested, it must be accompanied by the items requested in items 1 – 9 and item 14. Copies of the following information and all relevant supporting documentation must be submitted along with the request. Please contact EFC for assistance, including sample documentation.
1. A letter of explanation setting forth your basis for requesting a partial or total waiver and detailing the good faith efforts that were made. 2. Copies of advertisements in any general circulation, trade association, and minority- and women-oriented publications in which you solicited MWBEs for the purposes of complying with your participation goals, with the dates of publication. 3. Screenshots of search results (by business description or commodity code) from Empire State Development Corporation's (ESD) MWBE Directory of all certified MWBEs that were solicited for purposes of complying with your MWBE participation goals. 4. Copies of faxes, letters, or e-mails sent to MWBE firms to solicit participation and their responses. 5. A log of solicitation results, consisting of the list of MWBE firms solicited for the contract and the outcome of the solicitations. The log should be broken out into separate areas for each task that is solicited (e.g., trucking, materials, electricians) and clearly provide a rationale for firms included on the completed Utilization Plan as well as for those not chosen. The log should show: that each MWBE firm was contacted twice by two different methods (e.g., fax and phone); who was spoken to; what was said; and the final outcome of the solicitation. 6. A description of any contract documents, plans, or specifications made available to MWBEs for purposes of soliciting their bids and the date and manner in which these documents were made available. Specifically, include information on the scope of work in the contract and a breakout of tasks or equipment, such as

a schedule of values for a construction contract or a proposal or excerpt from a professional services agreement.

7. Documentation of any negotiations between you, the Contractor, and the MWBEs undertaken for purposes of complying with your MWBE participation goals.

8. Any other information you deem relevant which may help us in evaluating your request for a waiver. Examples may include sign-in sheets from any pre-bid meetings where MWBE firms were invited, attendance at MWBE forums, etc.

9. EFC and the MBO reserve the right to request additional information and/or documentation.

Additional Documentation for Requests for Specialty Equipment Waivers:

10. Copies of the appropriate pages of the technical specification related to the equipment showing the choices for manufacturers or other information that limits the choice of vendor.

11. Letter, e-mail or screenshot of website from the manufacturer listing their distributors in NYS and the locations.

12. Screenshots of ESD's MWBE Directory searches for the manufacturer and distributor showing that they are not found in the Directory.

13. An invoice or purchase order showing the value of the equipment.

Additional Documentation for Requests for Specialty Service Waivers:

14. A letter of explanation containing information about the scope of work and why no MWBE firms could be subcontracted to provide that service.

Note: Unless a Total Waiver has been granted, Firms will be required to submit all reports and documents pursuant to the provisions set forth in the procurement and/or contract, as deemed appropriate by EFC, to determine MWBE compliance. In cases where EFC accepts a full or partial waiver of MWBE participation goals, the waiver request will be posted to EFC's website.

SIGNATURE	
Electronic Signature of Contractor: ☐ I certify that the information submitted herein is true, accurate and complete to the best of my knowledge. **Name:** (Please Type)**:**	**Date:**

United States Environmental Protection Agency

OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Participation Form

An EPA Financial Assistance Agreement Recipient must require its prime contractors to provide this form to its DBE subcontractors. This form gives a DBE[1] subcontractor[2] the opportunity to describe work received and/or report any concerns regarding the EPA-funded project (e.g., in areas such as termination by prime contractor, late payments, etc.). The DBE subcontractor can, as an option, complete and submit this form to the EPA DBE Coordinator at any time during the project period of performance.

Subcontractor Name	Project Name	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact
Address		
Telephone No.	Email Address	
Prime Contractor Name	Issuing/Funding Entity:	

Contract Item Number	Description of Work Received from the Prime Contractor Involving Construction, Services , Equipment or Supplies	Amount Received by Prime Contractor

[1] A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

[2] Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

United States Environmental Protection Agency

OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Participation Form

Please use the space below to report any concerns regarding the above EPA-funded project:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Subcontractor Signature	Print Name
Title	**Date**

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

United States Environmental Protection Agency

OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form

This form is intended to capture the DBE[1] subcontractor's[2] description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name	Project Name	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact
Address		
Telephone No.	Email Address	
Prime Contractor Name	Issuing/Funding Entity:	

Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services , Equipment or Supplies	Price of Work Submitted to the Prime Contractor

DBE Certified By: ☐ DOT ☐ SBA ☐ Other: _____	Meets/ exceeds EPA certification standards? ☐ YES ☐ NO ☐ Unknown

[1] A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

[2] Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

United States Environmental Protection Agency

OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Performance Form

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	**Date**

Subcontractor Signature	Print Name
Title	**Date**

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

United States Environmental Protection Agency

OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Utilization Form

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE[1] subcontractors[2] and the estimated dollar amount of each subcontract. An EPA Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

Prime Contractor Name		Project Name
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact
Address		
Telephone No.		Email Address
Issuing/Funding Entity:		

I have identified potential DBE certified subcontractors	○ YES	◉ NO
If yes, please complete the table below. If no, please explain:		

Subcontractor Name/ Company Name	**Company Address/ Phone/ Email**	**Est. Dollar Amt**	**Currently DBE Certified?**

Continue on back if needed

[1] A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

[2] Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

United States Environmental Protection Agency

OMB Control No: 2090-0030
Approved: 8/13/2013
Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program
DBE Subcontractor Utilization Form

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	**Date**

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Attachment 9
New York State Environmental Facilities Corporation
CERTIFICATION REGARDING LOBBYING
FOR
CONTRACTS, GRANTS, LOANS, AND
COOPERATIVE AGREEMENTS
40 CFR Part 34

SRF Project No.: _____

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

By: _____
Name: _____
Title: _____
Date: _____
Contract ID: _____

Attachment 10
New York State Environmental Facilities Corporation
Contractor's American Iron and Steel (AIS) Certifications

To be completed by prime contractors for all construction contracts

AIS CONTRACTOR CERTIFICATION

FOR CONSTRUCTION CONTRACTS PAID FOR WITH FUNDS FROM

THE NYS CLEAN WATER STATE REVOLVING FUND OR

THE NYS DRINKING WATER STATE REVOLVING FUND VIA THE

NYS ENVIRONMENTAL FACILITIES CORPORATION

Project Title: _____

Contractor's Name: _____

Contract ID: _____

SRF Project #: _____

SRF Recipient Name: _____

I certify that the iron and steel products that will be permanently incorporated into the public water system or wastewater treatment works project under this construction contract will have been produced in the United States, in accordance with the requirements of the US Environmental Protection Agency. I will also develop and maintain at the project location the necessary documentation to demonstrate that the iron and steel products incorporated into the project were produced in the United States, and make such documentation available to The NYS Environmental Facilities Corporation or their authorized representatives, upon request.

Signature: _____

Name (print): _____

Title: _____

Date: _____

Attachment 11
New York State Environmental Facilities Corporation
Manufacturer's American Iron and Steel (AIS) Certifications

1. The following information is provided as a manufacturer's sample letter of **step** certification for AIS compliance. Documentation must be provided on company letterhead.

   Date

   Company Name

   Company Address

   City, State Zip

   Subject: American Iron and Steel Step Certification for Project (XXXXXXXXXX)

   I, (company representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

   Item, Products and/or Materials:

   1. Xxxx

   2. Xxxx

   3. Xxxx

   Such process took place at the following location: _____

   If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

   [Signed by company representative]

2. The following information is provided as a manufacturer's sample letter of certification for AIS compliance. Documentation must be provided on company letterhead.

   Date

   Company Name

   Company Address

   City, State Zip

   Subject: American Iron and Steel Certification for Project (XXXXXXXXXX)

   I, (company representative), certify that the following products and/or materials shipped/provided to the subject project are in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

   Item, Products and/or Materials:

   1. Xxxx

   2. Xxxx

   3. Xxxx

   Such process took place at the following location: _____

   If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

   [Signed by company representative]

U.S. Department of Labor
Wage and Hour Division

PAYROLL

(For Contractor's Optional Use; See Instructions at www.dol.gov/whd/forms/wh347instr.htm)

Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

U.S. Wage and Hour Division

Rev. Dec. 2008

OMB No.: 1235-0008
Expires: 02/28/2018

NAME OF CONTRACTOR ☐ OR SUBCONTRACTOR ☐	ADDRESS	
PAYROLL NO.	FOR WEEK ENDING	PROJECT AND LOCATION / PROJECT OR CONTRACT NO.

(1) NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	(2) NO. OF WITHHOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	OT. OR ST.	(4) DAY AND DATE — HOURS WORKED EACH DAY	(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS: FICA	WITH-HOLDING TAX			OTHER	TOTAL DEDUCTIONS	(9) NET WAGES PAID FOR WEEK
			O											
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While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that is will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

(over)

Date _____

I, _____ _____
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the
(Contractor or Subcontractor)

_____; that during the payroll period commencing on the
(Building or Work)

_____ day of _____, _____, and ending the _____ day of _____, _____,

all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

_____

_____

_____

_____

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

☐ – in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

☐ – Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.

1.0 - INDEMNITY

The Contractor and all subcontractors performing work in connection with this Contract shall HOLD HARMLESS, INDEMNIFY and DEFEND the Owner and Engineer, their consultants and each of their officers, agents and employees from any liability, claims, losses or damage including reasonable costs of defense arising out of or alleged to arise from the Contractor's or subcontractor's negligence in the performance of the work described in the Contract Documents, but not including liability that may be due to the sole negligence of the Owner, the Engineer or their officers, agents and employees.

2.0 - LIMITATION OF LIABILITY

The Contractor and all subcontractors agree to limit the liability of the Owner and the Engineer due to the Engineer's professional negligent errors or omissions such that the total aggregate liability of the Engineer to those named shall not exceed Fifty Thousand Dollars ($50,000) or five percent (5%) of the Contract award amount, whichever is greater.

3.0 - NO CLAIM FOR DELAY

The Contractor and all subcontractors agree to HOLD HARMLESS from any and all claims for loss or damages of any nature against the Owner or Engineer for delays in commencement, performance or completion of the Contract, regardless of whether said delays are, or may be, caused by the Owner, Engineer or any governmental agency.

It is the Contractor's responsibility to inform the Engineer in advance when a situation arises that forces the Contractor to cancel work for a given day. For example, if the Contractor informs the Engineer that he will be on the job on a certain day and then has to cancel the appointment because he cannot obtain certain labor, materials or equipment, it is the Contractor's responsibility to inform the Engineer of these latest developments and to let him know that construction observation services will not be needed for that day.

In the event that the Engineer is not given ample warning of such a cancellation and, as a result, unnecessary time is spent sending field personnel out to the project site to observe the previously scheduled construction, sufficient funds will be deducted from monies due the Contractor to reimburse the Engineer for this wasted time.

Similarly, sufficient funds will be deducted from monies due the Contractor to reimburse the Engineer for any services rendered in the field or in the office regarding work that had to be performed a second time due to substandard work on the part of the Contractor on the original work.

PART 1 - GENERAL

1.01 - BRIEF PURPOSE OF PROJECT / GENERAL

A. The purpose of the project is to eliminate the existing surface water outfall to the Peconic Estuary and relocate it for disposal on land of the Calverton Sewer District, which is located north of the groundwater divide, so as to comply with the recommendations of the Peconic Estuary Comprehensive Management Plan and the 2007 Total Maximum Daily Load (TMDL) requirements issued by USEPA, by upgrading the existing Calverton Sewer District sewage treatment plant to achieve groundwater discharge standards so that the plant can be permitted by NYSDEC to discharge to new recharge beds constructed within the Sewer District boundary.

B. This Section provides an abbreviated summary of the work for the Construction Contracts associated with the Owner's program to construct the project.

C. Each Contractor has been provided with copies of all relevant construction technical specifications and drawings for all related construction contracts whose work may directly effect and impact the work under this Contract.

1. Each Contractor shall provide a complete and operational project in anticipation of these affects and impacts.

2. It is each Contractor's responsibility to investigate the work that will be performed by others and consider such in the conduct of his/her work.

1.02 - NOMENCLATURE

A. The terms "Contractor" and/or "Prime Contractor" where used within the body of a specific Construction Contract, (i.e.; Contract G, Contract P, Contract E, & Contract S), shall refer to the individual or company who has entered into an agreement with the Owner to perform the work contained within those Contract Documents. The lack of word capitalization shall be incidental.

B. The GENERAL CONSTRUCTION CONTRACTOR may be referred to as the "General Contractor", "Prime General Contractor", "Contract G Contractor" or similar wording. The lack of word capitalization shall be incidental. This Construction Contract shall be known as Contract G.

C. The PLUMBING CONSTRUCTION CONTRACTOR may be referred to as the "Plumbing Contractor", "Prime Plumbing Contractor", "Contract P Contractor" or similar wording. The lack of word capitalization shall be incidental. This Construction Contract shall be known as Contract P.

D. The ELECTRICAL CONSTRUCTION CONTRACTOR may be referred to as the “Electrical Contractor”, “Prime Electrical Contractor”, “Contract E Contractor” or similar wording. The lack of word capitalization shall be incidental. This Construction Contract shall be known as Contract E.

E. The SEWER CONSTRUCTION CONTRACTOR may be referred to as the “Sewer Contractor”, “Prime Sewer Contractor”, “Contract S Contractor” or similar wording. The lack of word capitalization shall be incidental. This Construction Contract shall be known as Contract S.

1.03 - ABBREVIATED SUMMARY OF CONTRACT G WORK

A. Furnish all labor, equipment, materials, tools, means, methods, and incidentals necessary to complete the Work as required by the Contract Documents for this Construction Contract. Each contractor shall coordinate, through the Owner/Engineer, the work of their contract with the work by others.

B. This abbreviated work summary is provided to briefly describe the work covered by the Contract Documents for this Construction Contract. It is not all inclusive of the work under the Contract.

C. The work includes, but is not limited to, the following:

1. Portions of tree removal, site clearing, grubbing, sheeting, bracing, excavation, soil erosion protection, slope protection, earth movement, subgrade preparation, removal of excess and/or unsuitable excavated material, dewatering, and import of suitable material, as necessary to install and construct all the work defined within the Contract Documents, as noted.

2. Portions of site work for the sewage treatment plant including, but not limited, drainage control, rough and final grading, curbing, paving, and fences, as noted.

3. Construction of cast-in-place concrete for new process tanks, slabs, chambers, and wet wells.

4. Demolition and removals as noted and shown on the Drawings.

5. Tank pressure washing, cleaning, disposal of liquid waste materials generated during pressure washing and cleaning activities and process tank conversions.

6. Conversion of existing building usage and equipment.

7. Stormwater collection system piping, inlets, manholes and drainage basins.

8. Portions of exposed process piping, valves, fittings and appurtenances, as noted.

9. Yard piping, buried valves and fittings.

10. Potable and/or reuse water service within the facility to the extent shown on the Drawings.

11. Installation of natural gas piping to the extent shown on the Drawings for new emergency generator.

12. Portions of manholes, flow control boxes and associated piping, as noted.

13. Portions of air piping, headers, diffusers, and pipe insulation, as noted.

14. Portions of aeration valves, fittings and appurtenances.

15. Installation of all process equipment including, but not limited to: headworks fine screen equipment, MBR system equipment, aeration blowers, misc. pumps, portions of primary level elements as noted.

16. Furnish and install pressure and flow primary elements and aeration blower intake filters, unless noted for installation by the Prime Plumbing Contractor.

17. Portions of pipe support systems for exposed piping and thrust blocks for buried piping, as noted.

18. Furnish and install wall exhaust fans, louvers, (with and without motorized operators), ductwork, registers, and thermostats.

19. Furnish and install new climate control for new electrical room.

20. Furnish and install electric unit heaters with connections to wall mounted thermostats for electric service connection to each unit heater by Contract E.

21. Miscellaneous metals including railing, grating, and supports.

22. Miscellaneous FRP including railing, grating and supports.

23. Erection of structural steel canopies and aluminum platforms, stairways and ladders.

24. Painting of misc. metals, concrete or masonry, as noted.

25. Leak testing and startup participation for the various equipment and systems of the project and provide complete service to troubleshoot and assist manufacturer service representatives in obtaining a completely functional installation.

26. Project closeout submittals.

D. All other work shown and specified within the Contract Documents for Contract G.

1.04 - ABBREVIATED SUMMARY OF CONTRACT P WORK

A. Furnish all labor, equipment, materials, tools, means, methods, and incidentals necessary to complete the Work as required by the Contract Documents for this Construction Contract. Each contractor shall coordinate, through the Owner/Engineer, the work of their contract with the work by others.

B. This following abbreviated summary is provided to briefly describe the work covered by the Contract Documents for this Construction Contract. It is not all inclusive of the work under the Contract.

C. The work includes, but is not limited to, the following:

1. Portions of air piping and headers, as noted.

2. Installation of process equipment provided by others including, but not limited to: pressure and flow primary elements and aeration blower intake filters.

3. Pipe support systems for exposed piping.

4. Potable and/or reuse water service within the facility control building to the extent shown on the Drawings.

5. Leak testing and startup participation for the various equipment and systems of the project and provide complete service to troubleshoot and assist manufacturer service representatives in obtaining a completely functional installation.

6. Project closeout submittals.

D. All other work shown and specified in the Contract Documents for Contract P.

1.05 - ABBREVIATED SUMMARY OF CONTRACT E WORK

A. Furnish all labor, equipment, materials, tools, means, methods, and incidentals necessary to complete the Work as required by the Contract Documents for this Construction Contract. Each Contractor shall coordinate, through the Owner/Engineer, the work of their contract with the work by others.

B. This following abbreviated summary is provided to briefly describe the work covered by the Contract Documents for this Construction Contract. It is not all inclusive of the work under the Contract.

C. The work includes, but is not limited to, the following:

1. Portions of tree removal, site clearing, grubbing, sheeting, bracing, excavation, soil erosion protection, slope protection, earth movement, subgrade preparation, removal of excess and/or unsuitable excavated material, dewatering, and import of suitable material, as necessary to install and construct all the work defined within the Contract Documents, as noted.

2. Portions of site work for the sewage treatment plant including, but not limited, drainage control and rough and final grading, as noted.

3. Demolition and removals as noted and shown on the Drawings.

4. Provide, install, maintain, and repair, if necessary, temporary power and light throughout the site and to the Owner/Engineer's field office. Temporary power shall be provided as needed at location(s) selected by the engineer based on input from the other Contractors.

5. Provide, install, maintain, and repair, if necessary, temporary power as needed to maintain existing treatment process systems and equipment during conversion and installation of new systems and reconnection of new power systems to existing process systems.

6. Arrange for and install new primary electric service.

7. Main secondary feeders, power distribution, and instrumentation control wiring. Provide, mount, and install electrical conduit, wire, fittings, boxes, panels, and electrical accessories.

8. All clearing, excavation, filling, and backfilling associated with the installation of underground conduit, duct bank, or wiring.

9. Emergency stand-by generators including the construction of foundations and concrete slabs, as noted.

10. Motor control centers, local control stations, transfer switches, power distribution panels, breakers, lights, and switches, as noted.

11. Furnish, install and power process equipment control panels, level and pressure monitoring equipment, and install interconnecting wiring as noted. Furnish and power primary flow element transmitters. Installation of primary flow elements shall be done by installing contractor of that pipeline.

12. Electrical connections (final termination) to all equipment, control panels, ventilating equipment and electrical devices.

13. Startup participation for the various equipment and systems of the project and provide complete service to troubleshoot and assist manufacturer service representatives in obtaining a completely functional installation.

14. Project closeout submittals.

D. All other work shown and specified in the Contract Documents for Contract E.

1.06 - ABBREVIATED SUMMARY OF CONTRACT S WORK

A. Furnish all labor, equipment, materials, tools, means, methods, and incidentals necessary to complete the Work as required by the Contract Documents for this Construction Contract. Each contractor shall coordinate, through the Owner/Engineer, the work of their contract with the work by others.

B. This following abbreviated summary is provided to briefly describe the work covered by the Contract Documents for this Construction Contract. It is not all inclusive of the work under the Contract.

C. The work includes, but is not limited to, the following:

1. Portions of tree removal, site clearing, grubbing, sheeting, bracing, excavation, soil erosion protection, slope protection, earth movement, subgrade preparation, removal of excess and/or unsuitable excavated material, dewatering, and import of suitable material, as necessary to install and construct all the work defined within the Contract Documents, as noted.

2. Removals as noted and shown on the Drawings.

3. Furnish and install sanitary sewer force main including all pipe, fittings, valves, and appurtenances as defined by the contract documents.

4. Testing off all force main components as indicated in the Contract Documents.

5. Site clearing, grubbing, grading, removal of excess fill materials and offsite disposal or excess fill materials to construct the new effluent recharge basins as shown on drawings.

6. Project closeout submittals.

D. All other work shown and specified in the Contract Documents for Contract S.

1.07 - PARTIAL LISTING OF SPECIFIC CONTRACT REQUIREMENTS

A. The Contract Documents detail the work included in the Contract. Related requirements and conditions covered by the Contract Documents include, but is not limited to, the following:

1. Adherence to work restrictions as specified in Section 011400. Such restrictions include, but is not limited to:

a. Guidelines and requirements of the “Owner”, Calverton Sewer District, in accordance with the Calverton Sewer District Sewer Use Oridinance.

b. Guidelines and requirements of the Suffolk County Department of Health Services (SCDHS)

c. Guidelines and requirements of the New York State Department of Environmental Conservation (NYSDEC)

d. Local laws and ordinances of the Town of Riverhead

2. Each Contractor shall comply with MBE/WBE requirements as contained in the Contract Documents.

B. The General, Electrical and Sewer Contractors shall comply with the requirements of Section 312333 – Trenching. The cost associated with test holes and utility mapping shall be as specified therein and is subject to change based on conditions existing at the time of construction.

1.08 - PARTIAL LISTING OF OVERALL CONTRACT REQUIREMENTS

A. The Contract Documents detail the work included in each Prime Contract. Related requirements and conditions covered by each Prime Contract include, but is not limited to, the following:

1. Debris removal and daily and final cleaning up.

2. Coordination with the Owner and other contractors who have been awarded work by the Owner.

3. Coordination with utility companies' necessary to schedule connection of services, and management of the installation as noted on drawings.

4. Site utilization and management so as not to disrupt the Owner's ability to operate the existing facilities in a safe and efficient manner.

5. Maintain the Owner's ability to operate the facility at all times during the construction period.

6. Facilities to be used during the contract period that are to be used by the Owner or his representatives and others involved with constructing the project.

7. Product and equipment storage and handling requirements.

8. Starting and adjusting of the equipment and systems required under the project.

9. Site safety in accordance with all applicable federal, state, and local regulations.

10. Project submittals, meetings, professional photographs, testing services, work plans, schedules, shop drawings, closeout procedures and documents, manuals, as-built drawings, and final commissioning of the work shall be provided as required by the Contract.

11. Provide and maintain, at all times, temporary roadways for site access to all parties involved with the project.

12. Sequence and schedule the construction so that new facilities come on-line before pre-existing facilities are demolished, dismantled or taken offline.

13. Temporary facilities and controls necessary to construct the project and to maintain permit levels of sewage treatment at all time.

14. Site utilization and management so as to allow other prime contractors to perform work in conjunction with this project and to afford them equal opportunity and space to complete their contractual obligations with the Owner as solely defined by the Engineer.

15. To not hinder the Owner's ability to maintain permit levels of sewage treatment at all times.

B. The Owner has or will award other construction contracts associated with this project.

C. It is anticipated that work of all the contracts will coincide with work of this Contract.

D. Each Contractor shall coordinate the work between the various construction contracts, through the Owner/Engineer, as required to complete the contract requirements in accordance with the requirements contained in Section 013100.

1.09 - OWNER SUPPLIED PRODUCTS AND UTILITIES

A. The Owner will not be supplying equipment, labor, or tools for the project.

B. The Owner will pay for electricity usage. The restrictions on electrical usage shall be as follows:

1. Power tool usage will only be permitted during specified working hours.

2. Power for dewatering, bypass pumping utilizing electric pumps with motors greater than 1/3 horsepower and portable heaters will not be permitted.

3. Sump pumps, if less than 1/3 horsepower will be allowed. Only two (2) sump pumps will be permitted to operate at the same time.

4. Power to the Owner/Engineer's office, if applicable.

5. Power to help cure concrete or painting systems will not be permitted.

6. Power to the Contractor's trailer will be permitted if suitable available from existing STP power distribution system is located as approved by the Owner. All connection costs shall be borne by the Contractor(s).

C. The Owner reserves the right to stop paying for electrical usage at any time if, in the opinion of the Owner/Engineer, the Contractor causes excessive electrical charges or does not conserve electricity to the maximum extent possible in the opinion of the Engineer. All Contractors shall conserve electricity during the course of construction.

1.10 - EXISTING CONDITIONS

A. The Drawings show certain information that has been obtained by the Owner regarding various pipelines, utilities, and structures that exist at the location of the project both below and at grade.

B. The Owner and the Engineer expressly disclaims all responsibility for the accuracy or completeness of the information given on the Drawings with regard to existing facilities.

C. In the case where the Contractor discovers an obstruction not indicated on the Drawings or not described via specification reference, then the Contractor shall immediately notify the Engineer of the obstructions' existence.

D. The Engineer will determine if the obstruction is to be relocated or removed.

E. Compensation for this extra work will be paid for in accordance with the provisions in the Contract for “Extra Work”.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Site access and control of areas outside of site.

B. Contractor use of premises.

C. Contractor storage, parking and deliveries.

D. Work hours, employee conduct and miscellaneous employee requirements.

E. Contract requirements related to maintaining Owner's current operations and excess inspection required.

F. Suggested construction sequence.

1.02 – SITE ACCESS AND CONTROL

A. The Contractor shall use the designated entrance to the site as shown on the drawings. If no site entrance is designated, the Contractor shall use an entrance designated by the Owner's Construction Representative.

1. The Owner may permit, solely at the Owner's discretion, the temporary use of another entrance for site access.

2. The Owner will only review requests made by the Contractor for an exception to the designated site entrance if made in writing at least 72 hours in advance of each of the times desired for use.

B. All contractors to maintain the entrance area clear of materials, vehicles and any other obstacle or debris. Failure to do so will result in a minimum back charge of $750 per occurrence.

C. The area around the site is a commercial neighborhood. The Owner intends to be a good neighbor. The Contractor shall not close any road for any period of time. The Contractor shall take whatever measures are necessary to not cause any inconvenience to the area's residents and businesses.

D. The Contractor is responsible to employ methods to prevent construction materials and/or debris from leaving the site. The Contractor is responsible to routinely monitor the areas surrounding the site during the day as well as at the end of the work-day and to immediately clean up any area to its previous condition.

E. The Contractor shall employ methods to prevent the transmission of dirt from vehicles driving on exposed areas of the site from reaching the surrounding roadways. The Contractor will be responsible to immediately clean the roadway, should the measures being taken by the Contractor be found to not satisfactorily control the transmission of any dirt to the roadway.

F. Any damages to areas outside the site, spills of soil, liquid, or any other material shall immediately be repaired, cleaned and restored to its previous condition.

G. The Contractor shall comply with all state and local requirements for allowable weight limits of vehicles on all roads.

H. The Owner reserves the right to back charge the Contractor for all costs associated with maintaining the grounds as well as maintaining areas outside the site, which may be disturbed by the Contractor should the Contractor fail to maintain or repair the aforementioned in a condition acceptable to the Owner.

1.03 - CONTRACTOR USE OF THE PREMISES

A. Premises, for the purpose of this Contract, shall mean the site, buildings and other structures located within the property line or in any temporary or permanent construction easements identified on the plans.

B. The Contractor shall use and manage the premises and the associated construction activities as follows:

1. To not hinder the Owner’s ability to operate their facilities,

2. To allow other Prime Contractors to install their work and complete their contractual obligations in the time period specified,

3. To allow for stockpiling of construction material and debris without any significant hardship, as defined by the Owner’s Construction Representative, on the Owner or other contractors,

4. To allow for the stockpiling of excavated soil and imported fill, when called for, without any significant hardship, as defined by the Owner’s Construction Representative, on the Owner or other contractors,

5. To allow utility companies to install their work,

6. To allow for the delivery of equipment and materials by independent trucking companies by leaving enough space for backing in and out of areas,

7. To allow for the safe, unimpeded travel way of the Owners vehicles, Owner's Construction Representative's vehicles, Architect's and Engineer's vehicles, construction vehicles and heavy construction equipment about the entire site.

C. Contractors shall maintain the premises in a safe condition throughout the construction period. Compliance with OSHA regulations and site safety shall be the responsibility of the Contractor as it relates to work of the Contract. The posting of all applicable OSHA safety signs shall be the responsibly of the Contractor.

D. Contractors shall provide temporary handrails, as required, for their work or for work put in place by their Contract that will require temporary handrails. Construction of temporary handrails shall be as specified in Section 015000.

E. Contractor(s) shall be responsible for protecting Owners property. All existing buildings, structures, shrubs, trees, lawn fixtures, sculptures and misc. equipment shall be protected at all times. Any removals or relocation of said objects, if allowed shall be as directed by Owner's Construction Representative.

F. Contractor shall protect all of the physical structures, property and improvements upon the site from damage by their Work and shall immediately repair or replace damage caused by construction operations, employees or equipment employed by the Contractor. All labor, materials and equipment and outside contractors that are employed by the Owner to repair damage caused by the Contractor shall be billed to the Contractor directly or withheld from money due the Contractor for work already completed.

G. Limit use of the site to the area(s) shown on the Contract Drawings and the adopted Site Utilization Plan. Confine operations to permit others working on the site easy access to all areas of Work.

H. Keep all existing operations areas, driveways, roads, and parking areas free and clear of materials and equipment. Do not unreasonably encumber the site with materials and equipment. Confine stockpiling of excess excavated material, materials and equipment to areas selected under the Site Utilization Plan or as designated by the Owner's construction representative. Locate storage sheds and trailers to areas designated in the plan or by the Owner's Construction Representative.

I. Immediately remove excess excavated material or relocate to areas on the site requiring placement of fill. Do not stockpile excess material on the site.

J. The construction site space is limited and it shall be the General Contractor's responsibility to manage the site during the entire construction period with input from all concerned parties as to

meeting their needs. Equal consideration of the needs of others with that of the Contractor's shall be provided as judged by the Owner.

K. The General and Sewer Contractors shall be required to mechanically sweep paved roadway surfaces along Burman Blvd and the access drive between the intersection of Grumman Blvd and Jan Way that are impacted by the installation of their work as well as daily access to the site. The General and Sewer Contractors shall perform this mechanical sweeping work at a minimum frequency of once per week and a maximum frequency of once per day, or as directed by the Owner's Construction Representative. This sweeping service is not to be considered an extra cost by the General and Sewer Contractors and must be an anticipated expense that shall be considered at the time of bid.

L. Due to the limited site area available for construction, staging areas shall be relocated several times during the various stages of construction. Additional compensation for relocating staging areas, equipment and material storage, and trailers are not to be considered an extra cost to the Contractor as this is an anticipated expense that shall be considered at the time of the bid.

M. Contractors are responsible for cleaning up their own materials and debris. Failure to maintain a clean work site daily, will result in other performing the work and contractor(s) being back charged for the cleaning cost plus construction administration fees.

N. Use of the existing building facilities during construction is prohibited including but not limited to: toilet rooms, telephone and water fountains. Contractor(s) shall be fined $250 per occurrence if their employee (or subcontractor's employee) is observed disregarding these rules.

O. Should it become necessary to access the existing building during construction hours for measurements or other non-disruptive work, the contractor shall be escorted by an Owner's Construction Representative.

P. Refer to Section 015000 - Temporary Facilities and Controls for minimum rubbish removal requirements.

Q. Do not discard or dispose of any waste on-site.

R. Open fires will not be permitted on the site.

S. Contractors shall employ erosion control measures to protect the work where shown on the Drawings and as required by regulatory agencies. The Contractors shall confine storm water runoff to the site.

T. Dewatering may be encountered. Comply with the requirements contained in Section 312319 – Dewatering.

U. The General Contractor shall be responsible for managing dust as specified in Section 015719.

1.04 - CONTRACTOR STORAGE, PARKING AND DELIVERIES

A. Contractors must provide exterior storage containers when required. Final location of storage container shall be determined by the Owner.

B. Do not unreasonably encumber the premises with materials and equipment. Do not store material in existing buildings. Store all equipment and materials to allow the Owner's employees to operate and conduct their business safely.

C. Confine premise storage areas to locations designated by the Owner. Immediately repair or replace damaged facilities to the satisfaction of the Owner and to a condition that existed before the damage occurred as determined by preconstruction photographs, or if photographs are unavailable, to that deemed by the Owner.

D. No storage materials will be permitted within the buildings at any time during construction.

E. Storage of chemicals and paint shall be outside the existing or new structures and shall follow manufacturer's guidelines.

F. Compressed gas containers shall be properly stored and secured per OSHA, to the satisfaction of the Owner. Failure to do so will result in a $250 back charge, per occurrence.

G. Contractor shall provide minimum of 48 hours advance written notice on working days to the Owners Construction Representative for deliveries of materials, site visits by inspectors, manufacturers representatives or any other occasion that impacts the use of the site. Contractor shall be responsible for any costs that are incurred by the owner, for failure to meet previously agreed upon appointments or work schedules.

H. Deliveries sent to the Owner will not be signed for or unloaded by the Owner. They will be directed to the construction site and if no employee is on site, the delivery will be rejected, at the contractor's expense.

I. Night deliveries of equipment (past the designated quitting time) will not be permitted. Do not schedule trucking companies to deliver equipment or wait for the job site to open. Delivery trucks shall not obstruct the site entrance, shall not sit within the neighborhood causing an obstruction or perceived nuisance, nor be left idling on or off the site for any period of time.

J. Parking shall be in the designated areas of the site only. All automotive type vehicles are to be locked when parked or unattended to prevent unauthorized use. Do not leave vehicles or equipment unattended with the motor running or the ignition key in place. Any vehicles or trucks in non-designated areas may be towed at contractor's expense.

1.05 – WORK HOURS, EMPLOYEE CONDUCT AND MISCELLANEOUS EMPLOYEE REQUIREMENTS

A. The Contractor will be permitted to schedule working days and hours as specified in the General Terms and Conditions, if no times are specified therein then the work hours shall be Monday – Friday 7:00 am - 3:30 pm.

B. Employees are to act in a professional manner. Any employee using inappropriate language or who is disruptive to the work environment will be banned from the site.

C. Proper work attire is required. Shirts are to be worn at all times and no short pants are permitted.

D. Employees shall not converse with local residents or Owner’s employees.

E. Any employee found under the influence of any drug or alcohol will be banned from the site.

1.06 - CONTRACT REQUIREMENTS RELATED TO MAINTAINING OWNER’S CURRENT OPERATIONS AND EXCESS INSPECTION REQUIRED

A. The Contractor shall schedule working days and hours as specified. The Contractor shall pay all excess costs for inspection services provided by the Owner/Engineer for working beyond the times specified.

B. The hourly rate paid for inspection services beyond normal working hours shall be at a maximum billing rate of $200 per hour, which shall be used to compute the overtime hourly charge.

C. It is the Contractor’s responsibility to determine the dollar amount to be included in the bid to pay for the services of one (1) inspector to be present during the entire time work is being performed beyond a normal 8-hour day. If the Owner elects to have more than one representative present, then the cost of the additional inspector(s) will not be paid for by the Contractor. The maximum hourly billing rate applies for all instances where excess engineering is performed beyond a normal 8-hour work day.

D. The Contractor will be allowed to work early morning hours if a planned tie-in must be performed. Early morning work is required since it is a low flow period. Provide 72 hours advanced notice to the Engineer for all early morning work together with a written plan as to the steps necessary to

construct the work. The overtime salary costs for early morning tie-in work associated with having the operations staff of the treatment facility present shall be paid by the Contractor. This cost will be eligible for reimbursement payment as specified in Section 012100 – Allowances.

E. Maintenance of Treatment:

1. The designated operator of the Treatment Plant is required by law to maintain the discharge limits specified in the SPDES permit. The permit levels of treatment shall be provided at all times during the construction of the facility.

2. The Contractor shall be responsible for all fines resulting from the discharge of inadequately treated sewage if the cause of the violation was due to the direct or indirect construction action of the Contractor or any of his/her employees, subcontractors, vendors or material suppliers.

3. When it becomes necessary to alter the existing plant operations in any way, the Contractor shall provide at least 72 hours working days advance written notice to the Engineer and Owner. The notice shall indicate the reason for altering the process together with measures necessary to maintain treatment.

4. The Contractor shall not open, close, start or stop any valve, piece of equipment or any other component at the existing facility without first providing written notice. Only licensed operators designated by the Owner shall be permitted to alter the operation of the plant.

5. The Contractor shall employ bypass pumping from one tank to another in order to take process tanks off-line, perform required modifications and demolitions and to complete the work. All equipment, labor, materials, and fuel or source of power used for bypass operations shall be furnished and installed by the Contractor.

6. Where existing electrical facilities require modifications or abandonment, then the electrical contractor shall first decommission them.

7. The Contractor shall conduct all physical work necessary to alter plant flows and install whatever measures are required to perform the work safely.

1.07 – SUGGESTED CONSTRUCTION SEQUENCE

A. The following is a suggested general, not all-inclusive, sequence of construction that may be used to complete all work under the Contract within the time specified. Since permit levels of treatment must be maintained during construction, certain existing process equipment and units cannot be taken offline until new facilities are placed into permanent, fault free operation.

B. Work restrictions may be noted throughout the suggested sequence provided below. The Contractor shall comply with all noted work restrictions that appear.

C. The following suggested sequence is provided for information only:

1. Establish site utilization - set up all required field offices and temporary utilities for construction.

2. Construct new/modified process treatment systems: The listed work must be completed, tested, checked out by equipment manufacturer and acceptable to the Resident Engineer/Owner prior to starting the next phase.

PHASE I

A. Maintain process with existing pump station Aeration Tank #1 and Settling Tank #1 while performing the following work of Phase 1:

1. Empty and clean Aeration Tank #2 and Settling Tank #2

2. Remove equipment from cleaned tanks.

3. Conversion of existing tanks:

a. Aeration Tank #2 to MBR/Anoxic Trains 1 and 2

i. Add new walls and piping.

ii. Install new equipment in MBR/Anoxic tanks.

b. Settling Tank #2 to Pre-Equalization Tank #1 and Pre-Equalization Pump Station

i. Add new walls and piping.

ii. Install new pumps and aeration diffusers.

c. Conversion of Influent PS

i. Remove Pump #3 from dry well and piping as necessary to create new wet well.

ii. Build divider wall and install new wet well equipment.

4. Concurrent to conversion of tanks, install new Screenings Channel and new discharge piping with valves in position to continue with flow to existing Influent Wet Well.

5. Conversion of Operations Building, including installation of all new blowers and permeate pumps, with temporary setup for existing blowers to maintain existing treatment process.

6. Install new Rotary Drum Screen #1 with successful startup prior to diverting flow to new Influent Wet Well, and prior to startup of Influent Pump Station and Pre-Equalization systems.

7. Complete Influent PS, Pre-Equalization Tank #1 and Pre-Equalization Pump Station. These systems must be online prior to introducing flow to new MBR/Anoxic tanks.

PHASE II

1. Complete installation and startup of Rotary Drum Screen #2

2. Complete new MBR/Anoxic systems and place online

3. Send effluent through Chlorine Contact Tank temporarily to maintain disinfection by diverting permeate effluent piping to existing settling tank effluent trough on east side of process tankage.

PHASE III

4. Clean and empty Settling Tank #1 and Aeration Tank #1

5. Convert Settling Tank #1 to Effluent PS and Pre-Equalization Tank #2

6. Convert Aeration Tank #1 to new Sludge Holding Tanks

7. Concurrent to all work, but should be complete before completion of Effluent Pump Station, install effluent force main and recharge beds (Contract S).

8. Place new Effluent Pump Station, Sludge Holding Tanks, and Pre-Equalization Tank #2 online.

PHASE IV

1. Final demolition including cleaning and emptying of existing Sludge Holding Tanks and decommissioning of existing Chlorine Contact Tank and outfall.

2. Site Rehabilitation

3. Complete all remaining contract work.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Site Utilization Plan requirements

1.02 – SITE UTILIZATION PLAN REQUIREMENTS

A. The General Contractor shall prepare a Site Utilization Plan (SUP) showing staging areas, parking areas, stockpile areas, debris container areas, unloading areas, and trailer areas for review by the Owner's Construction Representative, Architect, Engineer, and other prime contractors. The length and amount of meetings necessary to develop and adopt a SUP shall be as required.

B. Meeting(s) will be held at the site with all concerned parties to assist the General Contractor in developing the criteria for the plan. During these meeting(s), all parties will present their needs and requirements for site utilization. As a minimum, each Prime Contractor shall be allocated the same amount of staging/parking/material storage area regardless of the dollar amount of their construction contract. Representatives from the local municipality or utility companies may be attending. The requirements of the local municipality and utility companies shall be incorporated into the SUP.

C. The General Contractor shall then prepare a draft site plan that attempts to incorporate the needs of all concerned parties. Another meeting will then be held at the site to review and present the plan. The plan shall then be revised at that meeting and adopted for use if it is acceptable to all relevant parties. If all parties cannot agree on an acceptable plan, then the Owner's Construction Representative will establish the Site Utilization Plan without any claims from any contractor.

D. The Contractor, by submitting a bid, understands the importance of a workable Site Utilization Plan and also understands that the Owner's Construction Representative may be required to select a plan for all contractors to adopt that is not ideal to the planned construction activities anticipated before the bid was submitted. There shall be no claims for damages associated with site utilization.

E. If the General Contractor fails to prepare the Site Utilization Plan as stipulated above, then the Owner reserves the right to back charge the General Contractor for the costs associated with having a Site Utilization Plan developed.

F. If a Prime Contractor fails to participate or attend the meetings scheduled to develop the Site utilization Plan then the Prime Contractor will forfeit any right to comment on the plan that is developed.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - DESCRIPTION

A. Work under this Section specifies the procedures used to process partial and final payments. It also includes the procedure for issuance of the Certificate of Substantial Completion and the Final Payment.

B. If there are any discrepancies between this Section of the Contract Documents and the Contract, General Conditions, then the Contract and General Conditions shall govern.

1.02 - RELATED SECTIONS

A. Section 012973 - Schedule of Values

1.03 - TIME FOR COMPLETION

A. Since the provisions of the Contract relating to the time for performance and completion of the Work are for the purposes of enabling the Owner to proceed with the construction of a public improvement in accordance with a predetermined program, and in as much as failure to complete the Work within the period herein specified may result in damage or loss to the Owner, time is of the essence of the Contract.

B. Time for completion of the Work shall be in accordance with that stipulated in the Contract Documents.

C. The date for completion will be calculated from the date shown in the *Notice To Proceed*. The Contractor shall prosecute the Work with diligence from day to day, and complete it at the time fixed.

D. For the purpose of defining completion date, the Project will be considered complete when all work covered by the Contract has been performed.

1.04 - PARTIAL COMPENSATION

A. At the Owner's discretion, the Contractor may receive compensation for materials, equipment, and products delivered to the site yet not installed provided:

1. A cancelled check or paid bill from the supplier is submitted to the Engineer/Architect indicating that the Contractor has paid the supplier for the material or equipment.

2. A certificate of insurance is provided specifically insuring the piece of equipment for full value in the event of loss, vandalism, fire, and act of God.

3. A bill of material is delivered to the Engineer/Architect at the time of delivery itemizing the subject material or equipment.

4. The Engineer/Architect has agreed to the pre-purchasing of the materials.

B. Payment will be made for on-site material and/or equipment for 80% of the gross amount of the paid invoice, less the normal contract retainage.

C. The Contractor will not receive compensation for materials, equipment, and products stored in the Contractor's yard or shop.

D. The Contractor will not receive compensation for material, equipment, and products stored on site if it has not been stored in accordance with the manufacturer's requirements and the requirements specified elsewhere within these specifications.

E. Payment(s) made under this paragraph do(es) not relieve the Contractor from his/her responsibilities under the terms of this Contract.

1.05 - PAYMENT TO CONTRACTOR

A. Submit with each and every voucher for payment for work completed under this Contract, a statement as to the amounts due and owing by the Contractor to labor, subcontractors and materialmen and a certificate relative to payments now due.

1. All statements shall be signed by the Contractor's authorized representative and witnessed by a notary public.

2. A Specimen of the required statement is attached and made a part of this Section of the Contract Documents.

B. Every application for payment shall consist (and be in the order of) the following properly prepared and executed documents:

1. Transmittal letter or memo describing the exact contents of the payment application

2. Signed invoice on company letterhead

3. Owner's voucher executed by the Contractor (if required)

4. Schedule of Values showing derivation of the invoiced amount, consistent with the proposal form(s)

5. AIA Documents as specified in Section 012973

6. Certified payroll records prepared in accordance with standard accounting procedures in a form acceptable to the Owner

7. Payment affidavits (Specimen forms provided herein this Section and as specified above)

8. Invoices and required backup information for payment to be made out of cash allowance(s)

C. The Engineer/Architect will not process partial payment applications until the required documents are submitted in the prescribed form as may be discussed at the pre-construction conference or as may be required by the Owner.

D. Payment requests shall not be submitted more than once per month.

1.06 - SUBSTANTIAL COMPLETION AND FINAL PAYMENT REQUEST

A. Substantial Completion:

1. Upon Substantial Completion of the Work as defined herein and acceptance thereof by the Engineer/Architect/Owner, and as soon thereafter as practicable, the Engineer/Architect will prepare a Certificate of Substantial Completion.

a. The Engineer/Architect will establish the date of Substantial Completion when the project is accepted and ready for operation for the intended purpose, and no large, major or important items of work are as yet outstanding; thus the Owner has gained *Beneficial Use* of the project.

b. The Certificate of Substantial Completion will indicate the value of work performed, materials and equipment furnished, and otherwise show the exact aggregate amount equal to one hundred percent (100%) of the total compensation to which the Contractor is entitled for the performance of the Contract, less the amount of previous payments, less the sum as stipulated below for remaining Punchlist work.

c. All documents as specified in Sections 017800, 017823, and 017839 shall be submitted and approved prior to Substantial Completion.

d. The Certificate of Substantial Completion will be submitted to the Owner and a copy furnished to the Contractor.

e. Upon approval of the Certificate of Substantial Completion by the Owner, and as soon as practicable thereafter, the Owner will pay the Contractor.

2. Attached to the Certificate of Substantial Completion will be a Punchlist itemizing the items of work remaining.

a. The Punchlist will include "minor" items only, as so defined solely by the Engineer/Architect.

b. Any prior punchlists, which include "major" or significant items, as defined by the Engineer/Architect, shall not be criteria in establishing the date of Substantial Completion.

c. This Punchlist shall not be considered all-inclusive and any outstanding contract requirements discovered by the Owner or the Engineer/Architect shall be installed, repaired, replaced and corrected prior to the final inspection. The Engineer/Architect will provide written notice of such additional outstanding work items.

d. The Engineer/Architect will calculate and itemize, in the Certificate of Substantial Completion, the value of the Punchlist work as being the larger sum of either:

1) Two times the sum of money which, in the Engineer/Architect's opinion, would be necessary to expend if the Owner were to contract with others for the final completion of the work and satisfaction of all Punchlist items, *or*

2) The sum of money represented in the Contractor's bid schedule or Schedule of Values for the Punchlist items.

3. The Certificate of Substantial Completion shall fix the time for the Contractor to finish all Punchlist work.

4. The Contractor shall prepare a Substantial Completion partial payment application as specified in paragraph 1.05 herein, which shall be made a part of the Certificate of Substantial Completion.

5. The warranties/guarantees for all equipment, products and services required by the Contract Documents shall commence on the date that the Owner accepted/executed the Certificate of Substantial Completion.

6. The warranties/guarantees for all equipment, products and services represented on the Substantial Completion Punchlist will begin on the date that the Owner accepted the Final Payment Request as hereinafter specified.

7. Removal of the Contractor's plant and equipment and other inconsequential adjustments which do not prevent *Beneficial Use* of the Project, will not be a factor in establishing the date of Substantial Completion.

8. Only the Final Payment Request will be processed after Substantial Completion has been reached.

B. Final Completion:

1. Upon receipt of written notice that the work of the Contract is ready for final inspection and upon receipt of a Final Payment Request, the Engineer/Architect will make a *formal inspection*.

2. An amount of **$1,000.00 (ONE THOUSAND DOLLARS AND ZERO CENTS)** will be deducted from the Contractor's Final Payment for each *formal inspection* where uncompleted work of the Contract was found by the Engineer.

3. All spare parts shall have been delivered prior to a final inspection.

4. Upon Final Completion of the Work in accordance with the Contract and acceptance thereof by the Owner, and as soon thereafter as practicable, the Engineer/Architect will process the Contractor's Final Payment Request.

   a. The Final Payment Request will indicate the value of the work performed, materials and equipment furnished, and otherwise the exact aggregate amount of compensation to which the Contractor will become entitled under the terms of the Contract.

   b. Upon approval of the Final Payment Request by the Owner, and as soon as practicable thereafter, the Owner will pay the Contractor an amount equal to one hundred percent (100%) of the total compensation to which the Contractor is entitled for the performance of the Contract, less the amount of all previous payments.

5. The issuance of the Final Payment Request and payment in full to the Contractor shall be contingent and conditioned upon submission by the Contractor of a *Maintenance Bond.*

    a. The Bond shall be in a form approved by the Owner and issued by a surety acceptable to the Owner in its sole and absolute discretion.

    b. The Bond shall remain in effect as specified elsewhere in the Contract Documents.

1.07 - ACCEPTANCE OF FINAL PAYMENT REQUEST

A. The Contractor shall be conclusively deemed to have accepted the Final Payment Request as a correct statement of the total liability of the Owner and of the compensation paid and to be paid to the Contractor by the Owner unless within seven (7) days after delivery of his copy of the Final Payment Request to him/her, the Contractor shall return such copy to the Owner together with a statement of his/her objections to such payment request and of any claim for damages or compensation in excess of the amounts shown on the Final Payment Request.

B. The acceptance by the Contractor of the Final Payment Request as approved by the Owner shall constitute a release and shall discharge the Owner and Engineer/Architect from all further claims by the Contractor arising out of or relating to the Contract, including but not limited to a release from all impact costs.

1.08 - RELEASE OF RETAINAGE & REINSPECTION OF WORK

A. Retainage will be released as specified in the Contract Documents.

B. During the last month of the *Maintenance Bond* period, the Owner may make, or cause to be made, a reinspection of the Work. If the Work is found satisfactory and in accordance with the Contract Documents, the Owner will approve the termination of the Contract.

C. In the event the inspection discloses the existence of defects in the materials, equipment or workmanship or other noncompliance with the Contract Documents, the Contractor shall be required to immediately make good and rectify all defects.

    1. Any item of equipment that has failed to maintain the performance or other salient requirements of these specifications, shows undue wear, or other deleterious defects, will be considered defective.

    2. If the Contractor shall fail or neglect to satisfy the requirements of the Owner with respect to making the necessary corrections, then the Owner may proceed to have the work

executed by others and the cost and expense thereof will be borne by the Contractor and his Sureties.

3. Correction of defects and noncompliance and payment for such by the Contractor or his Sureties shall terminate the Contract and release all parties hereunder.

1.09 - SCOPE OF PAYMENTS

A. The Contractor shall receive and accept the compensation as herein provided, in full payment for furnishing all materials, labor, tools, and equipment and for performing all work contemplated and embraced under the Contract, also for all loss or damage arising out of the nature of the Work or from the action of the elements, or from any unforeseen difficulties or obstructions which may arise or be encountered during the prosecution of the Work, and for all risks of every description connected with the prosecution of the Work, until its final acceptance by the Owner, also for all expenses incurred by, or in consequence of, the suspension or discontinuance of the said prosecution of the Work as herein specified, and for all actual or alleged infringements of patent, trademark, or copyright, and for completing the Work and the whole hereof, in an acceptable manner, according to the Plans, Specifications, and other Contract Documents.

B. The payment of any partial or final estimate shall in no way or in no degree prejudice or affect the obligation of the Contractor, at his own cost and expense, to renew or replace all defects and imperfections, or damages. The Engineer/Architect shall be the sole judge, and the Contractor shall be liable to the Owner for failure to do so.

1.10 - RIGHT TO WITHHOLD PAYMENTS

A. The Owner may withhold from the Contractor the amount of any payments due him as may in the judgment of the Owner be necessary:

1. To assure the payment of any lien, stop notice or claim filed with the Owner for work, labor or materials, done, performed, or delivered and used in the prosecution of the Work herein provided for (whether in strictly legal form or otherwise); or

2. To protect the Owner from loss due to defective work not remedied or through any improper or defective machinery, implements or appliances used by the Contractor or for failure of the Contractor to fully comply with all requirements of the Contract; or

3. To protect the Owner from loss due to injury to persons or damage to the work or property of other contractors, subcontractors, or others, caused by the act or neglect of the Contractor or any of his subcontractors.

B. The Owner shall have the right as agent for the Contractor to apply any amounts so withheld in such manner as it may deem proper to satisfy such claims or secure such protection. Such application of such money shall be deemed payments for the account of the Contractor.

C. Before release to the Contractor of any funds retained under this provision, the Contractor shall furnish satisfactory written evidence to the Owner that the claim or claims have been fully paid or satisfied.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used

This space left intentionally blank.

SPECIMEN

STATEMENTS AS TO AMOUNTS DUE AND OWING BY CONTRACTOR TO LABORERS, SUBCONTRACTORS AND MATERIALMEN. THIS DOCUMENT SHALL BE SUBMITTED WITH EACH AND EVERY VOUCHER.

STATE OF)
) ss.:
COUNTY OF)

_____, being duly sworn, deposes and say that he is an Officer of _____furnishing labor and materials in connection with a public improvement for **Calverton Sewer District Upgrade of the Sewage Treatment Plan – Enterprise Park at Calverton Module No. 1 (0.100 MGD)** project for _____ work and that to his knowledge all laborers for daily or weekly wages employed by _____ have been paid in full and to the best of his knowledge all laborers with daily or weekly wages employed by subcontractors of _____on such employment have been paid in full, except as follows:

_____

_____

And, that to his knowledge, all subcontractors for labor and/or materials engaged by _____and material dealers engaged by it have been paid by it in the amount of money due them or not less than the amount paid by the Owner to the Contractor on account of their labor and/or materials in accordance with previous requisitions.

This statement is made pursuant to all applicable provisions of the Labor Law of the State of New York.

By: _____

Note: The Contractor shall retype this document on company letterhead or use the form provided by the Owner.

STATE OF)
) ss.:
COUNTY OF)

_____, being duly sworn, deposes and says that deponent is an Officer of _____ the corporation named in this action; that deponent has read the foregoing Statement and knows the contents thereof; and that the same is true to deponent's own knowledge, except as to the matters therein stated to be alleged upon information and belief and to those matters deployment believes it to be true. This verification is made by deponent because _____ is a corporation. Deponent is an officer of the company.

By:_____
Officer

Sworn to before me this_____
day of _____, 20___

_____
Notary Public

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Allowance pricing for the following items:

1. Overtime Salary Account.

2. Independent Laboratory Testing Allowance.

3. Contingency Account.

4. Utility Installation of Primary Electric Service Feeders Allowance

5. Telephone and Internet Utility Allowance

B. This Section covers the requirements for use of the cash allowances listed above contained in the proposal (Bid Forms, Price Schedule) and included in the Contract Price bid by the Contractor and defines and stipulates the charges that will be paid for out of the stipulated allowances.

C. The Contractor shall include the cash allowances stipulated in this Section in the amount bid (Base Bid).

D. Eligible costs described in this Section, and Sections referenced herein, will be the only costs paid for out of the stipulated allowances.

E. All other costs associated with the project as specified and/or shown, including but not limited to the delivery, installation and all Contractor overhead and/or collateral expenses are to be distributed among the other portions of the work and shall be included in the lump sum base bid.

1.02 - SUBMITTALS

A. Make all submissions under the provisions of **Section 013300**.

B. For each type of product/material specified to be furnished under allowance pricing provide documentation of the unit pricing on manufacturer’s letterhead certifying pricing of the product/material.

C. Submit additional backup information to substantiate the invoiced amount(s) as the Engineer/Architect may require for review and approval, prior to order or payment of item.

D. Provide written breakdowns for extra work as the Owner may require.

1.03 - CHANGES TO STIPULATED (CASH) ALLOWANCE

A. If the actual cost of services differs from the cash allowance, then the Contract Price will be adjusted accordingly.

1.04 - PAYMENTS TO BE MADE OUT OF OVERTIME SALARY ACCOUNT

A. Include the cash allowance of **$10,000.00 (TEN THOUSAND DOLLARS AND ZERO CENTS)** in the amount bid for use upon the Owner's instructions.

B. Funds will be drawn from this account to pay for overtime hours worked by Owner's operations staff associated with project required after hour tie-in and tank bypass work as specified in **Section 011400**.

1. Overtime hours worked by the Contractor's employees are not eligible for payment under this allowance item.

2. Overtime hours worked by the Architect/Engineer's representative(s), as a result of the Contractor's operations, shall be paid for by the contractor as provided under other terms and conditions contained in the Contract and General Conditions at the Engineer/Architect's billing rate as specified in **Section 011400 – Work Restrictions**.

C. Funds remaining at project closeout shall be credited to the Owner.

1.05 - PAYMENTS TO BE MADE OUT OF TESTING ALLOWANCE

A. Include the cash allowance of **$5,000 (FIVE THOUSAND DOLLARS AND ZERO CENTS)** in the amount bid for independent testing laboratory services specified in **Section 014500**.

B. The actual invoiced charges of the testing laboratory, including toning companies where called for, incurred for field and laboratory tests, as specified *only* in **Section 014500 - Quality Control**, shall be paid for out of the cash allowance.

1. Any other requirement specified herein throughout these specifications for providing the services of an independent testing laboratory, underground utility location company, or similar outside independent service are to be borne by the Contractor.

2. All costs for quality control services are to be included as part of the Contract Price (as-bid).

C. One (1) week prior to each partial payment, submit a certified invoice from each company listing and detailing the total costs incurred since the last invoice.

1. The invoice shall be on company letterhead signed by an authorized representative of the company and shall include man-hours, tests conducted, date of tests and associated costs and fees.

2. Payment for costs will not be made unless the information is provided and certified. Payment for costs will not be made unless the typed test data reports have been received by the Engineer.

3. In the case of pipe toning, flags must be set to delineate the route of underground pipes and utilities prior to submission of partial payment request.

D. If in the event test results (provided by the independent testing laboratory) show non-compliance with these specifications, then at the option of the Contractor and only with the approval of the Owner, he may re-test samples to verify the original test results at his/her own expense.

E. Costs for re-testing failed components of the work, when ordered by the Engineer/Architect, will not be paid for out of the cash allowance and will be directly borne by the Contractor.

1.06 - PAYMENTS TO BE MADE OUT OF CONTINGENCY ACCOUNT

A. Include the cash allowance of **$15,000 (FIFTEEN THOUSAND DOLLARS AND ZERO CENTS)** in the amount bid for use upon the Owner's instructions.

B. The Owner will draw funds from the contingency account only upon prior approval by the Owner's Construction Field Representative and Architect/Engineer.

C. Funds remaining at project closeout shall be credited to the Owner.

1.07 - ELECTRIC SERVICE FEEDERS ALLOWANCE

A. Include the cash allowance of **$25,000 (TWENTY-FIVE THOUSAND DOLLARS AND ZERO CENTS)** in the amount bid for PSEG charges associated with the installation of the new primary electric service.

B. The actual invoiced charges of PSEG incurred in connection with relocating existing service(s) and the installation of new services shall be paid for out of the cash allowance.

C. Funds remaining at project closeout shall be credited to the Owner.

1.08 - PAYMENTS TO BE MADE OUT OF TELEPHONE AND INTERNET UTILITY ALLOWANCE

A. Include the cash allowance of **$10,000 (TWENTY THOUSAND DOLLARS AND ZERO CENTS)** in the amount bid for telephone company charges associated with the installation of new cable internet wires for cable and telephone at location selected by the Owner within existing control building.

B. The actual invoiced charges of the utility incurred in connection with this item shall be paid for out of the cash allowance. This item applies only to the labor, materials and equipment furnished and installed by the utility for installing telephone sets about the plant site. Labor, materials, equipment and services provided by the contractor are not eligible under this allowance.

C. All costs associated with arranging, providing, and installing the telephone service for the Engineer's use shall not be eligible under this cash allowance. Monthly telephone usage bills for the Engineer's telephone shall be eligible for payment under this cash allowance.

D. Funds remaining at project closeout shall be credited to the Owner.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Submission procedures.

B. Documentation of changes to Contract Sum/Price and Contract Time.

1.02 - RELATED SECTIONS

A. Proposal Form.

B. Other sections referencing this section.

C. All contractual requirements outlined in the documents.

1.03 - SUBMISSION REQUIREMENTS

A. Submit Alternates on Proposal Forms identifying the effect on adjacent or related components.

B. Alternates will be reviewed and accepted or rejected at the Owner's option.

C. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.04 - SELECTION AND AWARD OF ALTERNATES

A. Indicate variation of Bid Price for Alternates listed on the PROPOSAL FORM. This form requests a "difference" in Bid Price by adding to or deducting from the base Bid Price.

B. Alternates quoted on PROPOSAL FORM will be reviewed and accepted or rejected at Owner’s option.

C. Accepted alternates will be identified in Owner-Contractor Agreement.

D. Bids will be evaluated on the base bid price, plus any combination of alternate items.

1.05 - WORK FOR ALTERNATES

A. Work for alternate items selected shall include all related materials, labor, equipment and operations necessary to conduct and complete the alternate work and all other affected work or adjacent areas.

B. There shall be no change in time or completion date for the selected alternates, unless specified herein or approved in writing by the Engineer/Architect and Owner.

C. Alternates and associated work shall meet all standards and specifications delineated in the Contract Documents.

D. Contractor shall coordinate pertinent related Work and modify surrounding Work as required to complete the project under each alternate selected by the Owner.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

A. Work for each alternate, related items and collateral work shall be completed in their entirety.

B. If alternate items are not selected, work for the base bid and collateral work shall be completed in their entirety.

END OF SECTION

PART 1 – GENERAL

1.01 – SECTION INCLUDES

A. This Section includes the requirements for substitution of specified products during construction.

B. The Engineer/Architect will consider requests for substitutions only within thirty (30) days from the date of the Notice to Proceed.

C. Only products not specifically named in the bid are eligible for substitution in accordance with the requirements contained herein these specifications.

D. Products named by the Bidder, at the time of bid, shall be furnished and installed and substitutions will not be considered by the Owner/Engineer/Architect for those products named in the bid.

1.02 - CONTRACTOR'S OPTIONS

A. For products specified only by reference standard, select any product meeting that standard.

B. For products specified by naming several products or manufacturers, select any one of the products or manufacturers named which complies with the Specifications.

C. Where products are not named, then submit products that meet the specifications.

PART 2 - PRODUCTS

2.01 - SUBSTITUTIONS

A. Name - The Drawings and Specifications list acceptable manufacturers, commercial names, trademarks, brands and other product, material and equipment designations. Such names are provided to establish the required type, quality and other salient requirements of procurement.

B. Equals - An item equal to that named or described on the Drawings or in the Specifications may be provided by Contractor if accepted by the Engineer/Architect.

C. A request for product substitution constitutes a representation that the Contractor:

1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.

2. Shall provide the same warranty for the Substitution as for the specified Product.

3. Shall coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.

4. Waives claims for additional costs or time extension that may subsequently become apparent.

5. Shall reimburse the Owner and the Engineer/Architect for review or redesign services associated with re-approval by authorities.

6. Shall reimburse the Owner for all additional engineering and/or architectural services claimed by the Engineer/Architect for extra services associated with the review of the Contractor's substituted item since it could not have been originally included in the Engineer/Architect's professional services agreement. Reimbursement shall be based on the man-hours expended, at current billing rates.

D. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

E. Substitution Submittal Procedure:

1. The Contractor shall submit three (3) copies of the Request for SUBSTITUTION FORM for consideration including all required information.

2. The Contractor shall use the form included within this Section.

3. All forms shall be type written.

4. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence.

F. The burden to prove product equivalence rests on the Contractor.

G. The Engineer/Architect will notify Contractor in writing of decision to accept or reject request and at that time the Contractor can make a formal submittal in accordance with the requirements in Section 013300.

H. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.

PART 3 - EXECUTION

Not Used

This space left intentionally blank.

REQUEST FOR SUBSTITUTION FORM

Project:	Substitution Request Number:
Contractor:	
Address:	
To:	Date:
H2M Project Number:	Owner:
Contract Name:	Contract No.

Specification Title:		
Section:	Page:	Article/Paragraph:
Drawing No(s):		

Proposed Substitution:		
Manufacturer:	Address:	
Trade Name:	Phone #: ( )	
Installer:	Address:	
Phone #:		

History: □ New product □ 2-5 years old □ 5-10 years old □ More than 10 years old

Differences between proposed substitution and specified product:

☐ Point-by-point comparative data attached

Reason for not providing specified item (Attach separate sheet if necessary):

Typical Similar Installation:

Project:

Engineer/Architect:

Address:

Owner:

Date Installed:

Submit complete installation list on separate sheets.

Proposed substitution affects other parts of Work: ☐ No ☐ Yes

Explain:

Gross Savings to Owner for accepting substitution: $_____

Proposed substitution changes Contract Time: □ No □ Yes

Add / deduct (circle): _____days

Supporting data attached for evaluation of the proposed substitution:

□ Product Data □ Photos □ Drawings □ Tests □ Reports □ Samples

□ Other
(explain):_____

Attached data includes description, specifications, drawings, photographs, performance and test data adequate for evaluation of request; applicable portions of data are clearly identified.

Attached data also includes a description of changes to Contract Documents that proposed substitution will require for its proper installation.

The undersigned certifies that the following paragraphs, unless modified by attachments, are correct:

1. Proposed Substitution has been fully checked and coordinated with Contract Documents.

2. Proposed Substitution does not affect dimensions shown on Drawings.

3. The undersigned will pay for changes to building design, including Architectural and Engineering design, detailing, and construction costs caused by requested Substitution.

4. Proposed Substitution will have no adverse affect on the construction schedule, or specified warranty requirements.

5. Maintenance and service parts will be locally available for proposed substitution.

6. The undersigned further states that the function, appearance, and quality of proposed Substitution are equivalent or superior to specified item.

This request for product substitution also constitutes a representation that I, as the Contractor:

1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.

2. Shall provide the same warranty for the Substitution as for the specified Product.

3. Shall coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.

4. Waives claims for additional costs or time extension that may subsequently become apparent.

5. Shall reimburse the Owner and the Engineer/Architect for review or redesign services associated with re-approval by authorities.

6. Shall reimburse the Owner for all additional engineering/architectural services claimed by the Engineer/Architect for extra services associated with the review of the Contractor's substituted item since it could not have been originally included in the Engineer/Architect's professional services agreement. Reimbursement shall be based on the man-hours expended, at current billing rates.

Contractor's Authorized Representative
(Typewritten):

Authorized Signature:

Date:

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Schedule of Values

1.02 – SCHEDULE OF VALUES

A. Submit for approval prior to the start of the work a Schedule of Values that indicates a breakdown of the labor, materials and equipment and other costs used in the preparation of the bid. This schedule shall be in sufficient detail to indicate separate figures for such items as excavation, concrete, equipment and all other items making up the lump sum price. The cost breakdown shall be separately itemized for each lump sum bid item in the project.

B. Where the cost breakdown includes items for bond payment, insurance payment, job set-up, or job mobilization, these items will be paid based on paid invoices and copies of cancelled checks.

C. Submit a Schedule of Values to the Engineer/Architect for review and approval within thirty (60) calendar days from the date shown on the Notice to Proceed.

1.03 - FORM OF SUBMITTAL

A. Submit typewritten Contract Cost Breakdown on AIA Form G703 - Application and Certificate for Payment Continuation Sheet or EJCDC 1910-8-E. The Engineer reserves the right to revise the form or provide a form prepared by the Engineer.

B. Use the Table of Contents of the Contract Specifications as a basis for format for listing costs of work for Sections under Divisions 1-48 as sections apply to work. Not all Sections need be assigned a breakout price as determined by the Engineer/Architect.

C. Identify each line item with number and title as listed in Table of Contents.

D. Provide dollar values for each line item for labor, overhead, profit, material, and equipment components for each category of work if requested by the Engineer.

E. List quantities of materials specified under unit price allowances.

F. The Schedule of Values, after approval by the Engineer/Architect, shall be the basis for the Contractor's Application for Payment.

G. The first Application for Payment will not be reviewed prior to an approved breakdown.

1.04 - PREPARATION OF SCHEDULE OF VALUES

A. In addition to the above, provide a separate line item cost for each of the following items which shall be supported by proof where specified below:

1. Performance and payment bonds. (Submit proof of this amount.)
2. Insurance. (Submit proof of this amount.)
3. Mobilization and Demobilization (Amounts shall be equal in value).
4. Temporary facilities and measures as specified in Section 015000.
5. Project Coordination Meetings as specified in Section 013100.
6. Preparation of the Project Construction Schedule, and updates, as specified in Section 013300.
7. Preparation of Weekly Schedules as specified in Section 013100
8. Rubbish removal and daily cleaning up.
9. Construction photographs as specified in Section 013233. (Submit proof of this amount.)
10. All Cash Allowance items as contained in Section 012100.
11. On-site, full time superintendent starting on the date of the Notice To Proceed and ending on the date that all punch list items are completed, which for the purposes of the Schedule of Values, shall be the contract completion date.
12. Exploratory digging as specified in Section 312333.
13. Underground utility mapping services as specified in Section 312333.
14. Engineer's Office Equipment. (Submit proof of this amount.)
15. Surveyor used for layout. (Submit proof of this amount.)
16. Record Drawing retainage amount specified in Section 017839.
17. Final cleaning.

B. Show total costs including overhead and profit.

C. Provide additional details and data to substantiate the cost breakdown as requested by the Engineer.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Work of this Section includes:

1. Requests for Interpretation or for information
2. Coordination between contractors, if applicable
3. Administration of subcontracts
4. Coordination of work with other Contractors, utility companies, and the Owner/Engineer
5. Communication and coordination requirements
6. Qualifications of Contractor's job site superintendent

B. Site staffing requirements for the Contractor's superintendent are also specified herein, the costs for which shall be included in the Contract price.

1.02 - REQUEST FOR INTERPRETATION OR INFORMATION

A. The Contractor shall use the Request for Interpretation/Information Form included within this Section when the Contractor feels that additional information is needed to perform the work of the Contract.

B. The Engineer/Architect may not respond to any requests unless the form is used.

C. The Engineer/Architect's verbal response(s) to the Contractor's formal requests, if provided, shall not constitute an official response and if acted upon by the Contractor are done so at the Contractor's own risk and liability and shall not be subject to claims for additional compensation.

D. A signed facsimile of the form will be accepted. The original of the form must be signed and provided to the Engineer/Architect's project manager.

E. The Engineer/Architect will respond in writing to the request as soon as possible.

1.03 - COORDINATION BETWEEN CONTRACTORS

A. During the progress of the Work, other Contractors may be engaged in performing other work or may be awarded other contracts for other work on this Project. Each Contractor shall coordinate all the work to be done with the work of each Contractor(s) through the Owner.

B. Each Contractor shall fully cooperate with each other Contractor(s) and carefully fit its own work to that provided under other contracts as shown or specified in the Contract Documents and as may be coordinated by the Owner/Engineer/Architect.

C. Each Contractor shall not commit or permit any act that will interfere with the timely performance of work by any other Contractor.

D. The Contractor shall conduct his/her own operations, and to cooperate with such other parties, so as to cause as little interference as possible with the work by others.

E. The Contractor agrees to make no claim against the Owner/Engineer/Architect for additional payment due to delays or other conditions created by the operation of others.

F. If there is a difference of opinion as to the respective project rights of each Contractor doing the work, within the limits of or adjacent to the Project, the Owner/Engineer/Architect shall decide as to the respective rights of the various parties involved in order to secure completion of the work in a satisfactory manner. The Owner/Engineer/Architect's decision shall be final and binding on each Contractor.

G. If any portion of the work of the Contractor, or any of his/her subcontractors, depends upon the proper execution of the work by others, the Contractor shall promptly give written notice to the Engineer/Architect of all purported defects in the installed work as renders it unsuitable for proper execution and completion of his own work. The Contractor shall further notify the Engineer/Architect of all supposed delays, in the performance of his/her work, as will affect the timely performance of his own work or the project.

H. The Contractor's lack of notice shall constitute an acceptance by him/her that the work of others is fit and proper for the reception of the Contractor's own work, except as to defects developing in the work that could not have been reasonably foreseen.

I. The Contractor's lack of notice shall also constitute an acceptance by him/her and an acknowledgement of the timely performance of work by other Contractors or the Owner and that no claims for additional compensation may result.

J. If the Owner/Engineer/Architect determines that the Contractor is failing to coordinate his own work with the work of others, then the Owner shall have the right to enforce the provisions of the Contract as related to non-performance.

K. The Owner/Engineer/Architect shall not be liable for any damages suffered by this Contractor by reason of any other Contractor's failure to comply with the directions so issued by the Owner/Engineer/Architect, or by reason of another Contractor's default in performance; it being

understood that the Owner does not guarantee the continued efficiency or work production of any Contractor and by execution of the Contract, the Contractor fully understood the potential coordination problems associated with projects involving multiple prime construction contracts.

L. The Contractor's attention is specifically directed to the fact that he may not have exclusive occupancy of the work area within the limits of the Contract. Each Contractor shall afford the Owner, other Contractors, and utilities reasonable opportunity for the storage of their materials and equipment, and the execution of their work, and shall connect and coordinate his work with theirs as required by the Contract Documents.

1.04 - SUBCONTRACTOR ADMINISTRATION AND COORDINATION

A. Terms and conditions of the Contract shall be binding upon each subcontractor.

B. Furnish each subcontractor and major equipment vendor at least one (1) copy of the Plans and Technical Specifications.

C. Provide at least one (1) copy of each approved shop drawing to each subcontractor whose work may depend upon the contents of the shop drawing submittal. The Owner reserves the right to stop all work, without claims for delay, until such time as appropriate subcontractors are furnished with appropriate shop drawings.

D. Each Contractor shall sequence and schedule the work of subcontractors. Coordinate construction and administration activities of subcontractors. The Engineer and Owner will not accept telephone calls, facsimiles or office visits from any subcontractors on the project. Subcontractor and vendor questions and clarifications shall be directed to the Engineer by the Contractor.

E. The Contractor's on-site project superintendent shall inspect all the work of all of his/her subcontractors, as it is being constructed. The Contractor's subcontractor shall not be permitted to do any work on the site without the Contractor's job site superintendent also being there to inspect the work as it is being performed.

1.05 - UTILITY COORDINATION

A. Comply with the requirements of 16 NYCRR Part 753 – Protection of Underground Facilities. Submit a letter stating the case number.

B. Comply with the utility coordination requirements contained in the General Conditions.

1.06 - PUBLIC/PRIVATE UTILITIES

A. Notify all public and private utilities in accordance with Article 20, Section 322-a of the New York State General Business Law for location and markout of existing utilities in the vicinity of the work.

B. Repair all utilities damaged during the Work to the standards and approval of the respective utility at no cost to the Owner.

1.07 - SPECIFIC COORDINATION REQUIREMENTS

A. The Contractor shall sequence and schedule work so as not to interfere with the work by others and to afford each Contractor the time to complete their contractual obligations with the Owner. Coordinate the work of this Contract with the work by others. Coordination includes, but is not limited to, the following:

1. Schedule work with all trades throughout the project to prevent interference.

2. Accomplish work in coordination with the other Contractors in a manner that will allow each Contractor adequate time (at the proper stage of construction as determined by the Owner/Engineer/Architect) to perform and complete the work of their contract.

3. The Contractor shall annotate on each of his own shop drawings and submittals, information that is relevant to the work of others or where potential conflicts in the installed work may occur. The Contractor shall “bubble the area of potential conflict so as to alert the reviewer.

4. Each prime Contractor shall provide the Engineer/Architect with a list of shop drawings that they may require to properly coordinate the work. If a list is not provided to the Engineer within fifteen (15) calendar days from the date of the Notice to Proceed, then it shall be taken that shop drawings of other prime Contractors are not required. Each prime Contractor shall be responsible for providing the list within the time specified.

5. In case of conflicts due to improper coordination by any Contractor, the Owner/Engineer/Architect’s resolution will be final. No compensation will be awarded for extra work required to resolve conflicts or to coordinate the work of all contracts.

6. Coordinate space requirements, supports, and installation of mechanical, electrical and plumbing work which may be indicated diagrammatically on the Drawings. Follow routing shown for pipes, ducts, and conduit as closely as practicable. Place runs parallel with building lines. Utilize spaces efficiently to maximize accessibility for other installations, maintenance, and to facilitate repairs.

7. In finished areas, except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of all fixtures and outlets with finish elements and work by all other trades.

B. Shop Drawings and Submittals Coordination Procedure:

1. The Engineer/Architect will forward copies of relevant shop drawings to all prime Contractors, whose work may be subject to that of others, as solely determined by the Engineer.

2. The Contractor shall then, within five (5) calendar days of receipt, review said shop drawings provided by the Engineer/Architect for the purposes of resolving field and fabrication problems and as a way to coordinate the work.

3. Immediately notify the Engineer/Architect should a purported conflict in the work be discovered so that the Engineer/Architect can investigate and take appropriate action.

4. If a shop drawing was so provided by the Engineer/Architect and a conflict in the work was not brought to the attention of the Engineer/Architect, then the conflict shall be immediately corrected by the Contractor submitting the shop drawing.

C. Each Contractor shall also coordinate the work by complying with the following:

1. Construction Schedule: Each Contractor shall provide a construction schedule as specified in Section 013216 - Construction Schedules.

2. Weekly Schedule: By 3:00 PM of each Friday during the construction period, each Contractor shall fax or email a typed memo addressed to the Engineer/Architect/Owner's resident field engineer/inspector and designated office project manager summarizing the work for the following two weeks. The memo shall also be faxed or emailed to each Prime Contractor's home office and the Owner. The memo shall briefly itemize the planned activities for the coming weeks. The memo shall also include a summary of expected material/equipment deliveries, concrete pours, utility tie-ins, excavated material removals and other heavy construction traffic that may impact the work activities for the coming week.

3. Email Account: Each Contractor shall maintain an email account that shall be used to improve communication. An email shall not constitute a formal advisement regarding the terms and conditions of the contract. Email shall only be considered an informal way of notifying relevant parties of project related activities.

4. Email List: Each Contractor, within five (5) calendar days from the Notice To Proceed, provide a list of email addresses for each major equipment supplier and local representative, if such exists. A contact person shall be provided for each email address.

5. W/MBE Utilization Plans: All Contractors shall provide a W/MBE Utilization Plan in accordance with the requirements contained in other portions of the Contract Documents, but in no case more than thirty (30) calendar days from the date of the Notice To Proceed.

6. Work Plan: All Contractors shall within fifteen (15) calendar days from the date of the Notice to Proceed, submit to the Engineer a type written work plan in bullet format of the sequence of construction activities from start to finish of construction. A facsimile will not be accepted. All work plans shall include a description of the different major phases of construction as pertaining to the individual construction contract. As a minimum each work plan shall include the tasks and subtasks specified in Section 013216 for the project schedule.

   a. Each Prime Contractor's work plan shall be complete and shall address every phase of the scope of the Contract.

   b. The Engineer/Architect will forward all work plans to all other Prime Contractors.

   c. Each Prime Contractor shall then prepare a construction schedule as specified below using the work plans prepared by others and his/her own.

7. Equipment and Startup Schedule: All Contractors shall also submit a preliminary equipment delivery schedule and a preliminary startup schedule for all equipment and systems being furnished under the Contract. This schedule shall be submitted within 30 calendar days from the date of the Notice To Proceed.

   a. Include an early and late date for each item.

   b. Indicate the time necessary to physically install and ready each item so that other work can be completed by other Prime Contractors.

   c. The Engineer/Architect may waive this schedule if the Contractor has adequately shown the information on the construction schedule, in the opinion of the Engineer/Architect.

D. Project Coordination Meetings: All Contractors shall participate in and attend the Project Coordination Meetings as specified below:

1. Up to five (5) project coordination meetings will be held at the Engineer/Architect's or Owner's office as specified herein and in Section 013216.

2. The meetings will be held when so called for by the Engineer/Architect.

3. Each meeting may last up to eight (8) hours with one hour for lunch.

4. The Engineer/Architect will prepare the final agreed version of the schedule and distribute it to all Contractors.

5. The Engineer/Architect reserves the right not to hold these meetings if in his/her opinion they are not needed.

6. All Prime Contractors shall be required to attend the meetings.

7. The time associated with attendance at the meetings shall be included in the lump sum bid and be subject to a credit of $150 per hour for each unused hour that the Contractor does not attend.

1.08 - CONTRACTOR'S JOB SITE SUPERINTENDENT

A. Each Contractor shall employ an on-site superintendent as specified herein below. He/She shall be a full-time employee of the Contractor.

B. Each Contractor shall name the job site superintendent within five (5) days of the Notice To Proceed. A letter to the Engineer/Architect shall be provided.

C. He/She shall have the authority to sequence and schedule the work, and to staff the project, so as not to interfere with the work by others and to complete the work daily within the time so required.

D. Each Superintendent shall have a minimum of five (5) years of experience as a job site superintendent for projects of equal size and complexity.

E. Contract G superintendent shall not be a foreman or crew supervisor and shall be qualified and experienced person who shall act to schedule and sequence the work on a daily basis.

F. Contract E superintendent may be a foreman or crew supervisor.

G. Contract S superintendent shall not be a foreman or crew supervisor and shall be a qualified and experienced person who shall act to schedule and sequence the work on a daily basis.

H. Contract P superintendent shall not be a foreman or crew supervisor and shall be qualified and experienced person who shall act to schedule and sequence the work on a daily basis.

I. Each superintendent shall be qualified to perform the duties so required to successfully complete the work in accordance with the Contract Documents.

J. The superintendent for Contract G, P & S shall be on the site for each work day, full time, starting within twenty-one (21) calendar days from the date of the Notice To Proceed or initial site mobilization, based on which occurs last, through the date of Final Completion, ***including*** all punch list items.

K. All other construction superintendents shall be on the project site while work under his/her contract is being performed, either by direct forces or by subcontractors as stipulated above for subcontractor coordination.

L. Each superintendent shall also visit the site daily when work is not being performed under their Contract for coordination purposes, through the Owner/Engineer. He/She shall remain on the site for a minimum of one (1) hour, if work is being performed by others. He shall telephone the Engineer/Architect's designated field representative to advise him/her that they are on the site to discuss matters related to coordination.

M. Each superintendent shall speak English. If required by the Engineer/Architect, provide a resume for the proposed superintendent that shall be typed and shall list the qualifications of the superintendent. Prior to the Contractor assigning a superintendent to the project, he may wish to arrange an interview with the Engineer/Architect to determine the proposed superintendent's ability to properly coordinate the work through the Owner/Engineer. The Contractor shall employ a superintendent acceptable to the Owner.

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REQUEST FOR INTERPRETATION/INFORMATION (RFI)

TOWN OF RIVERHEAD/CALVERTON SEWER DISTRICT
UPGRADE OF THE SEWAGE TREATMENT PLANT – ENTERPRISE PARK AT CALVERTON MODULE NO. 1 (0.100 MGD)
CONSTRUCTION CONTRACT NO. CASD 1602

Product, Item, or System:			
Request Date:		**RFI No.:**	
Specification Section:		**Paragraph Reference:**	
Contract Drawing Reference(s):			
Describe Request:			
Signed:	☐ See Contractor's Attachments for Additional Description for Information		
Owner/Engineer Response:			
Engineer (Printed):	☐ See Engineer/Architect's Attachments for Additional Information		
Engineer's Signature & Date		*Response Accepted By Contractor Contractor's Signature & Date*	

The Work shall be carried out in accordance with these supplemental instructions without change in Contract amount or Contract time for completion. Prior to proceeding with these instructions, indicate your acceptance of these instructions by signing where indicated and returning this form to the Engineer.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Work of this Section includes the requirements for progress meetings.

1.02 - PRE-CONSTRUCTION CONFERENCE

A. The Contractor is required to attend the pre-construction conference at a location, date, and time selected by the Owner.

B. The owner, a partner, or a corporate officer representing the Contractor shall attend the conference. The job site superintendent and office project manager for the Contractor shall also attend.

C. The Engineer will prepare an agenda for the conference.

1.03 - PROGRESS MEETINGS

A. Progress meetings will be held approximately once every one (1) month during the project. The Owner may elect to hold meetings more or less frequently.

B. At least seven (7) calendar days advance notice will be given by the Engineer or the date for the next upcoming meeting will be set during an on-going progress meeting.

C. Attendance at progress meetings shall be mandatory for the Contractor. An amount of $1,000 shall be deducted from the Contract Amount for each announced meeting not attended by the Contractor.

D. The Contractor shall be represented at each announced progress meeting by either an owner, partner, or corporate officer representing the Contractor. The job site superintendent and office project manager for the Contractor shall also attend.

E. Subcontractors shall attend when requested by the Owner or Engineer at no cost to the Owner.

F. Meetings will be conducted by Engineer at a location selected by the Owner, normally at or adjacent to the project site.

1. The minimum agenda will cover Review minutes of previous meetings.

2. Identify present problems and resolve them.

3. Plan work progress during next work period.

4. Review the status of off-site fabrication and delivery schedule.

5. Review shop drawings and submittal schedules.

6. Review change order status.

7. Review status of construction progress schedule.

8. Coordinate access requirements.

9. Other business related to the work.

1.04 - OTHER MEETINGS

A. The Contractor shall attend special meetings which may be required or called for by Federal, State or Local authorities, utility companies, Owner, Engineer or any other firm, person or organization related to the project.

1.05 - CONDUCTING MEETINGS

A. General - This paragraph covers Owner and/or Engineer meetings with Contractor and/or his subcontractors. Neither Owner nor Engineer wishes to meet solely with a subcontractor and requests for such meetings will be discouraged. If a meeting is deemed necessary, every effort will be made to have Contractor attend. If, for some reason, circumstances do not allow such, the meeting may be held, minutes of the meeting will be sent to contractor and decisions on any major questions will be reserved until contractor has been consulted. Subcontractors may accompany contractor to meetings provided contractor notifies Engineer in advance.

B. Chairman - When Engineer or Engineer and Owner attend meetings, Engineer, or his duly authorized representative, will act as chairman. Should Owner-Contractor meetings be necessary, Owner will chair such meetings.

C. Notices - Engineer or Owner will issue notices of meetings to all parties concerned and will note, thereof, who must attend and who may attend if they so desire. When Contractor desires a formal meeting, make a request through Engineer. Except when Engineer determines that a prompt meeting is essential, all notices will be issued at least one week in advance of the meeting date.

D. Agenda - All parties shall inform Engineer of items desired to be discussed and Engineer will notify all parties of all items to be considered. This is to allow each party to fully prepare for the meeting. This shall not be construed to mean that other items cannot be brought up at the meetings.

E. Time Limits - It is the intent to hold productive and efficient meetings and to keep them as short as is reasonably possible. The Chairman will be the sole judge as to whether or not further discussion on any matter is warranted and all discussions shall cease when he so orders.

F. Minutes - Minutes of meetings will be kept, written and distributed by the Chairman or his duly authorized representative. Minutes of all meetings will be available upon request to the Chairman.

G. Conduct - It is the intent to conduct all meetings in an orderly manner, to reasonably discuss all items and to hear and observe the rights and opinions of all parties. The Chairman will allow each party to speak; however, he reserves the right to order any individual to leave the meeting at any time for any reason.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. This Section specifies the requirements for preparing construction schedules and for keeping them up to date.

B. All schedules shall be submitted in accordance with the requirements contained herein in Section 013300.

C. Refer to Section 013100 regarding the requirements for attendance at Project Coordination Meetings and additional requirements concerning the submission of other project coordination and sequencing information.

1.02 - SCHEDULE PREPARATION MILESTONE DATES & REQUIREMENTS

A. Each Contractor shall prepare Draft #1 Construction Schedule for presentation and discussion during *Project Coordination Meeting No. 1*.

1. The Engineer/Architect will provide at least seven (7) calendar days written notice regarding the date of the first meeting.

2. At the Engineer/Architect's discretion, *Project Coordination Meeting No. 1* may immediately take place on the same date and directly following the *Pre-Construction Conference*. The *Notice To Proceed* will contain information regarding the *Pre-Construction Conference* and *Project Coordination Meeting No. 1* should it be so decided by the Engineer.

3. Draft #1 Construction Schedule shall be prepared as specified hereinafter.

a. The schedule shall show all the major and subordinate tasks necessary to complete the project in the specified time and interim milestones.

b. It shall allow adequate time for other Prime Contractors to complete their related work as best estimated by the Contractor. It being understood that the Contractor's allotted time for others to perform their work is non-binding and does not relieve the Contractor from completing all the work in the specified contract completion time in accordance with the Contract Documents. It also being understood that this is the Contractor's realistic best estimate of the time needed for others to complete their related work.

c. The schedule shall also show the dependencies and time allocated for each task.

4. The date, place, and time for *Project Coordination Meeting No. 2* shall be established at the first meeting, but in no case be more than fourteen (14) calendar days from the date of the first meeting.

B. As a result of the first meeting, a better understanding of each Contractor's time requirements will have been achieved. Within five (5) working days of the date of *Project Coordination Meeting No. 1*, each Contractor shall prepare Draft #2 Construction Schedule and submit it to the Engineer/Architect and each other Prime Contractor for review. Each Contractor shall mail his/her schedule to all parties via Overnight Mail with a Return Receipt Requested.

1. *Project Coordination Meeting No. 2* shall be attended by all Prime Contractors for the purpose of jointly developing a Combined Construction Schedule. The meeting shall focus on the time needed to complete each task and subordinate task and for establishing task dependencies.

2. All Contractors shall deliver to the Engineer and General Contractor the electronic file of his/her Draft #2 Construction Schedule at the meeting. The General Contractor will use the data files to prepare the Draft Combined Construction Schedule.

3. The date, place, and time for *Project Coordination Meeting No. 3* shall be established at the meeting.

C. The purpose of *Project Coordination Meeting No. 3* is to review the General Contractor's Draft Combined Construction Schedule and to make minor adjustments as are needed.

D. The Engineer/Architect, after the third meeting and as soon as possible, will make the agreed upon changes and provide final versions to all other Prime Contractors for adoption as the Final Combined Construction Schedule.

1. The final schedule shall be implemented by all Prime Contractors on a daily basis. All tasks and subordinate tasks shall be completed on schedule.

2. Each Contractor shall increase resources as are needed to comply with the established milestone dates should the schedule start to lag.

E. The decisions regarding the time allotted for a given task shall be final and each Contractor shall apply necessary resources to accomplish the work. Submission of a bid shall be intended to mean that the Contractor agrees that the determination is binding.

1.03 - PRIME CONTRACTOR(S) SCHEDULE TYPES

A. The General Contractor shall prepare a Gantt Chart type schedule as specified hereinafter.

B. Contractor P shall prepare a Gantt Chart type schedule as specified hereinafter.

C. Contractor E shall prepare a Gantt Chart type schedule as specified hereinafter.

D. Contractor S shall prepare a Gantt Chart type schedule as specified hereinafter.

1.04 - CONSTRUCTION SCHEDULE - GENERAL

A. Coordinate the work and maintain the construction schedule. In the event actual progress begins to lag the schedule, promptly employ additional means and methods of construction to make up the lost time.

B. Keep the construction schedule current and revise and resubmit as often as necessary to accurately reflect the conditions of the work, past progress and anticipated future progress.

C. Each construction schedule shall be properly coordinated with all Contracts, completed, submitted, and deemed received by the Engineer prior to the first payment application.

D. The schedule, when approved by the Engineer/Architect and the Owner, shall establish the dates for starting and completing work for the various portions of the Contract. It shall be the duty of the Contractor to conform to his/her own schedule and to perform the work within the time limits indicated. Failure to adhere to the approved schedule shall expose the Contractor to disputes, claims and additional costs incurred by others.

E. Coordinate letting of subcontracts, material purchases, shop drawing submissions, delivery of materials, and sequence of operations, to conform to the schedule.

F. Coordinate the construction schedule with the proposed schedules of the equipment suppliers and subcontractors.

G. The schedule shall be plotted out in color and shall be 36-inch by 40-inch. It shall contain as many sheets as are necessary to show all rolled down tasks. Partially printed schedules will not be accepted. Each Contractor shall arrange to have it plotted on a color plotter suitable for the intended application.

H. Prepare the schedule in a manner so that the actual progress of the work can be recorded and compared with the expected progress.

I. The schedule shall use the following convention:

1. Tasks for the General Contractor in blue ink.

2. Task links/task dependency in blue ink.

3. Tasks for the Plumbing Contractor in green ink.

4. Tasks for the Electrical Contractor in red ink.

5. Tasks for the Sewer Contractor in black ink.

6. Milestone dates (zero duration) by a red diamond.

7. The end date for each task and subtask at the end of a bar.

8. The description of all major tasks within the bar. The bar shall be red.

9. Critical path.

J. The construction schedule shall also show the following:

1. Critical sequence items where new units must come on-line before existing facilities go off-line, if applicable to the project.

2. Engineer's construction office set up, as specified.

3. Computer delivery, if so specified elsewhere.

4. Telephone service and high speed internet cable installation.

5. Lead time for control panels that are packaged as systems.

1.05 - CONSTRUCTION SCHEDULE - GANTT CHART TYPE

A. The schedule shall show, in detail, the proposed sequence of the work and the estimated date of starting and completing each stage of the work in order to complete the project within the contract time.

B. Prepare the schedule in a manner so that the actual progress of the work can be recorded and compared with the expected progress.

C. Coordinate the construction schedule with the proposed schedules of the equipment suppliers and subcontractors.

D. The schedule shall be plotted out in color and shall be 36-inch by 40-inch. It shall contain as many sheets as are necessary to show all rolled down tasks. Partially printed schedules will not be accepted. Each Contractor shall arrange to have it plotted on a color plotter suitable for the intended application.

1.06 - REVISION OF PROJECT PROGRESS SCHEDULE

A. Each Prime Contractor shall evaluate, coordinate with other Contractors, and provide updated construction schedules monthly in accordance with job requirements. Each update shall be submitted to the Engineer/Architect for information purposes and be provided by the last Friday of every month.

B. Each Contractor shall modify his construction schedule to accommodate coordination of the construction contracts by the Owner/Engineer/Architect without claims for additional compensation or delay.

C. The General Contractor will provide an electronic version of the Final Combined Construction Schedule for use in keeping the schedule up to date.

D. From time to time, and at stages deemed appropriate by the Engineer/Architect, the Engineer/Architect may request updated schedules to reflect the project's status. The percent complete for each task may be shown, as determined by the Engineer/Architect.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Project record documents shall be prepared as specified herein.

1.02 - QUALITY ASSURANCE

A. The Contractor shall employ a land surveyor licensed in the State where the project is located. The surveyor shall be acceptable to the Engineer in terms of experience and qualifications.

1. Submit evidence of the surveyor's errors and omissions (professional liability) insurance coverage in the form of an insurance certificate.

2. The surveyor shall maintain a minimum coverage of $1,000,000 for professional liability.

3. The Owner, Engineer, and Contractor shall be named as insurance certificate holders.

4. A thirty-day cancellation notice shall be provided.

5. Physical work shall not be performed until the certificate is provided and approved by the Owner.

B. All instruments used on the project shall be of professional quality and in first class condition.

1. All instruments shall have been calibrated by a manufacturer’s service station within the last month from the date of first use on the job site.

2. Submit certificate of calibration or paid invoice showing that the unit has been calibrated, if so required by the Engineer/Architect.

1.03 - SUBMITTALS FOR REVIEW

A. Submit name, address, and telephone number of Surveyor before starting survey work.

B. Surveyor’s professional liability insurance certificate.

C. On request, submit documentation verifying accuracy of survey work.

D. Submit a copy of the site drawing signed by the land surveyor showing locations of other benchmarks set by the surveyor, baseline location and offset hubs. If requested, the Engineer will provide a reproducible drawing or a drawing in digital format for use by the surveyor.

1.04 - EXAMINATION

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Engineer/Architect of any discrepancies discovered.

1.05 - SURVEY REFERENCE POINTS

A. The Contractor's surveyor shall locate and protect survey control and reference points located throughout the project site.

B. Control datum for survey is that indicated on the Drawings or will be provided by the Engineer.

C. The Contractor shall protect survey control points prior to starting any site work. Preserve permanent reference points during construction.

D. Promptly report to the Engineer/Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

1. The surveyor shall replace dislocated survey control points based on original survey control when directed by the Engineer/Architect.

2. Make no changes without prior written notice to Engineer/Architect.

E. The surveyor shall set control lath for rough and final grading purposes. Lath shall be placed at sufficient intervals to control grade or as directed by the Engineer/Architect.

F. All new structures, pits, chambers, drainage pools, curbs, roads, swales, and other physical elements shall be located by survey control.

G. Underground pipelines need not be located using survey control but shall be located using standard survey equipment operated by persons experienced in their operation.

1.06 - SURVEY REQUIREMENTS

A. The Engineer/Architect will provide one (1) benchmark.

B. The Contractor shall, with his own forces, obtain working or construction lines or grades as needed subject to the check of the surveyor. The surveyor shall set offsets.

C. Establish elevations, lines, offsets and levels. Locate and lay out by instrumentation and similar appropriate means:

1. Site improvements including pavements, stakes for grading, curbs, fill and topsoil placement, utility locations, slopes and invert elevations.

2. Grid or axis for structures.

3. Building foundation, column locations, ground floor elevations, and equipment foundations.

D. Provide tie distances on record drawings to all underground structures, valves, pipes, and utilities installed as work of this Contract.

E. General Contractor's surveyor shall locate all proposed new structures to be constructed or installed on the treatment plan site for all of the project contracts (Contract E, P & S) as required by each Prime Contractor. Contract S shall be responsible for the complete survey of all off-site installations, including but not limited to, force main, cleanouts, recharge bed, etc.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Pre and post-construction photography.

B. Aerial photography.

1.02 – PHOTOGRAPHY

A. Provide color photographs of the site (pre and post-construction) produced by a professional photographer acceptable to the Engineer who is regularly engaged in this type of service. Photographs taken by the Contractor will not be accepted.

B. Preconstruction Photographs: Provide photographs, taken within the limits of the work, to document existing conditions. Engineer will designate the date and location of the exposures that will generally be taken just prior to the construction operations. The minimum number of photographs required shall be sixty-four (64). Two (2) duplicate CD sets of all photos in JPEG format shall be provided.

C. Progress Photographs: The Engineer will take progress photographs for the Owner's record. Each Contractor shall secure his/her own progress photographs that can be requested by the Owner or Engineer at any time throughout the duration of Contract work.

D. Final Photographs: Provide post-construction photographs, taken within the limits of the work, to document the final project and the conditions at final payment and issuance of the Final Certificate. The Final Payment will not be processed until such time as the photographs are provided and are of an acceptable quality to the Engineer. Engineer will designate the date and location of the exposures that will be taken. The minimum number of photographs required shall be sixty-four (64). Two (2) duplicate CD sets of all photos in JPEG format shall be provided

E. Annotate the following in each photo file:

1. Project name and number.

2. Photographer's identification, address, and telephone number.

3. Date and time picture was taken.

4. Location of picture relative to a specific location on the site, (for example, "10 ft. southeast of Operations Building").

5. Direction in which camera was aimed.

6. Description of what is depicted in each photo.

1.04 - PHOTO FILES

A. Minimum 5 mega pixel resolution, JPEG format.

B. Landscape frame position.

C. JPEG files shall be turned over to the Owner with all rights for use and reproduction of the photos files for the Owner's own use.

1.05 - TECHNIQUE

A. Provide factual presentation. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.

1.06 - SUBMITTALS

A. Deliver prints within seven (7) working days after exposure with transmittal letter in accordance with the requirements of Section 013300.

1.07 – AERIAL PHOTOGRAPHY (CONTRACT G ONLY)

A. Provide pre- and post-construction aerial color photographs of the site, effluent force main route and recharge bed location produced by an aerial photography company who is professionally and regularly engaged in this type of service. Photographs taken by the Contractor will not be accepted.

B. Preconstruction Photographs: Provide aerial photographs, taken of the limits of the work, to document existing conditions separately of the Calverton STP site and the effluent recharge bed site. Photograph shall be oriented directly over the center of the project site at an elevation such that the limits of the project site shall fill the frame at suitable detail resolution. Submit a minimum of 12 aerial photos for selection by the Engineer/Owner. The Engineer shall be permitted to request cropping and/or enhancement of the selected photo as suited the final posters printing. Provide three (3) poster board size aerial photographs mounted on foam board; the same photo with 3 prints. One photograph shall be framed. The minimum size of the photograph shall be approximately 24" by 36".

C. Post-construction Photographs: Provide aerial photographs, taken of the limits of the work, to document existing conditions separately the Calverton STP site, and effluent recharge bed site.

Photograph shall be oriented directly over the center of the project site at an elevation such that the limits of the project site shall fill the frame as suitable detail resolution. Submit a minimum of 12 aerial photos for selection by the Engineer/Owner. The Engineer shall be permitted to request cropping and/or enhancement of the selected photo as suited the final posters printing. Provide five (5) poster board size aerial photographs mounted on foam board; may select up to three different photos with 5 prints total . All prints shall be framed in plastic. The minimum size of the photograph shall be approximately 24” by 36”.

D. Take pre-and post-construction aerial photographs at the same elevation. The scales shall be the same.

E. JPEG files shall be turned over to the Owner with all rights for use and reproduction of the photos files for the Owner’s own use.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. This Section specifies the requirements for making submissions for the project. Electronic submissions will be required unless expressly noted otherwise.

B. Refer to Section 013216 - Construction Schedule for the requirements concerning the submission of construction schedules and for making updates thereto.

1.02 - IDENTIFICATION OF SUBMITTALS

A. Each and every submission shall be provided by the Contractor and shall be accompanied by a SUBMISSION TRANSMITTAL FORM. The Contractor shall use the specimen form made a part of this Section. *Submittals not containing the form will be returned to the Contractor un-reviewed*. The Engineer/Architect will not review project submissions until such time as the form is competed in its entirety. Identify each submittal and resubmittal using the form.

B. Each individual submittal shall be identified with a 'submission log number' as specified here in this example: 03300.01-1

1. The Section number for which the submittal applies, followed by a period, shall be indicated, "03300.".

2. The submittal within the Section shall be indicated by the next grouping "01". For instance and in this example, the concrete design mix may be submission "01", the waterstop catalog cut may be "02", and so on. Submittals shall be sequentially numbered within the Specification Section, i.e. 01, 02, etc.

3. The number of times the submission was made shall be preceded by a dash and a numerical suffix as follows: "-1". In this example, the concrete design mix is being submitted for the first time. Use the number "1" for the first time it is being submitted.

4. Subsequent submissions of the concrete design mix shall utilize the original number and a sequential numeric suffix, i.e. "2" for a resubmission, "3" for the second resubmission, and so on. Substitute the new number for the original "1".

C. Where a layout drawing, containing different elements of the project, is being submitted and there is a question as to what the log number might be, then the Contractor shall contact the Engineer/Architect so that an agreed upon log number can be assigned.

D. It is incumbent on the Contractor to initially assign the submission log number designation to each submission. Submissions not containing a log number, as specified above, will be returned to the Contractor un-reviewed by the Engineer/Architect.

E. Every submittal shall also be accompanied by a Transmittal Letter (or "Speed Form") addressed to the Engineer/Architect's Project Manager as hereinafter defined.

1.03 - COORDINATION OF SUBMITTALS

A. Prior to submitting to the Engineer/Architect, fully coordinate all interrelated work. As a minimum, do the following:

1. Determine and verify all field dimensions and conditions by field measuring existing conditions and the installed work of this Contract and work by others.

2. Coordinate with all trades, subcontractors, vendors, system and equipment suppliers and manufacturers, public agencies, and utility companies and secure all necessary approvals, in writing.

B. Make submittals in groups containing all associated items that in some way depend upon each other.

1. This also applies to color charts, as one color may not be able to be selected without the selection of other colors so as to form a color-coordinated group.

2. The Engineer/Architect may elect not to review partial or incomplete submissions, whereupon he will notify the Contractor of the additional submissions that are required before a review can be made.

1.04 - TIMING OF SUBMITTALS

A. Make submittals far enough in advance of scheduled dates of installation to provide time for reviews, for securing necessary approvals, for possible revisions and re-submittals, and for placing orders and securing delivery. The Engineer/Architect will review submittals in a manner as expedient as possible, and will generally send a written response to the Contractor within ten (10) calendar days of receipt of submittals.

B. Submissions may be returned reviewed, unreviewed, rejected, returned conditioned upon submission of related items, or for other reasons set forth in the Contract Documents.

C. Make submissions well in advance as the returning, rejecting or disapproval of submissions or other similar circumstances are possible and are deemed "avoidable delays". Costs for these

delays or those attributed to Contractor's tardiness in making submittals shall be borne by the Contractor.

D. ***All*** equipment and materials submittals requiring Engineer/Architect's review (except operations manuals and coordination shop drawings) as required under the technical specifications of these documents shall be submitted within **NINETY (90)** consecutive calendar days after the date of the Notice to Proceed. An amount of **$250** per calendar day shall be deducted from payment due the Contractor for ***each*** day that an outstanding submittal exists, said amount being the cost associated with the Engineer/Architect's review.

E. Operation and maintenance manuals shall be submitted at least **THIRTY (30)** consecutive calendar days prior to scheduled startup of the unit or system.

F. If material or equipment is installed before it has been deemed to be in general compliance with the Contract Documents, as determined by the Engineer/Architect, the Contractor shall be liable for its removal and replacement at no extra charge and without an increase in contract time.

1.05 - DESTINATION OF SUBMITTALS

A. Each submission of documents shall be accompanied by a transmittal form containing the name of the project, the contract name, the Engineer/Architect's project manager, a submittal ID number, and a description of content for the submitted items.

B. A copy of the TRANSMITTAL FORM shall also be provided to the Engineer/Architect's resident engineer/inspector at the job site.

C. Electronic submittals shall be transmitted through the Newforma® Project Center website or by email, pending instruction by the Engineer. H2M architects + engineers. is using a project information application called Newforma® Project Center. One of its components is Newforma Info Exchange, a web application that facilitates sending and sharing transmittals, and file sharing.

As an external team member on this project the Contractor will be required to access the H2M architects + engineers/Newforma Info Exchange website for information related to the project, including file transfers, RFI, Submittals, Action Items, and project Calendar information. You will have access to this website using any internet-capable computer running Internet Explorer or Firefox. All data transmitted through the H2M architects + engineers/Newforma Info Exchange website is encrypted and logged. Further instructions will be provided to the Contractor after the contract is awarded.

D. Two (2) hard copies of each submittal and other submissions, such as material samples or other items as instructed by the Engineer, shall be sent to the Engineer/Architect's office as follows:

H2M architects + engineers
538 Broad Hollow Road, 4th Floor East
Melville, New York 11747 - 5076
Attention: H2M Project Manager (Named at Pre-Construction Conference or in the Notice to Proceed)

1.06 - CLARITY OF SUBMITTALS

A. All printed materials shall be neat, clean, professionally drafted by hand or by computer, clear, legible, and of such quality that they can be easily reproduced by normal photocopying or blueprinting machines.

B. All electronic submittals shall be AutoCAD or Adobe Acrobat files produced with a minimum resolution of 400 dpi.

C. Groups of information shall be separated into groups, subsystems, or similar equipment/function. Copies not conforming to this paragraph will be returned to the Contractor without the Engineer/Architect's review.

1.07 - CONTRACTOR'S REPRESENTATION

A. By making a submission, the Contractor represents that he has determined and verified all field measurements and dimensions, field construction criteria, site and building constraints in terms of limitations in moving equipment into an enclosed space, materials, catalog and model numbers and similar data and that he has checked and coordinated each submission with other work at or adjacent to the project site in accordance with the requirements contained in Section 013100 - Project Management and Coordination and the Contract Documents.

B. Every SUBMISSION TRANSMITTAL FORM shall contain the Contractor's approval stamp and date showing that the submittal has been approved by the Contractor. The Engineer/Architect will not review submittals that have not yet been reviewed and approved by the Contractor.

1.08 - ENGINEER/ARCHITECT'S REVIEW

A. Engineer/Architect will review and comment on each submission conforming to the requirements of this Section.

1. Engineer/Architect's review will be for conformance with the design concept of the project and will be confined to general arrangement and compliance with the Contract Documents only, and will not be for the purpose of checking dimensions, weights, clearances, fittings, laying lengths, tolerances, interference's, for coordinating the work by others or subcontractors.

2. The Engineer/Architect's review of a separate item, or portion of a system, does not represent a review of an assembly or system in which the item functions.

B. The Engineer/Architect will mark submittals as follows:

1. NO EXCEPTION TAKEN ***(A)*** - No corrections, no marks. The content of this submittal has been reviewed by the Engineer/Architect and been found to be in general compliance with the Contract Documents. No further submission of this submittal is required and the information contained in the submittal may be built into the work in accordance with the Contract Documents.

2. MAKE CORRECTIONS NOTED ***(B)*** - Minor amount of corrections. The content of this submittal has been reviewed by the Engineer/Architect and has been found in general to be in compliance with the Contract Documents. The notations made on the submittal by the Engineer/Architect shall be incorporated into the work in accordance with the terms and conditions of the Contract Documents. No further submission of this submittal is required.

3. AMEND AND RESUBMIT ***(C)*** - The content of this submittal has been reviewed by the Engineer/Architect and this review has determined that additional data and/or modification to the submitted data or other changes are required to bring the work represented in this submittal into compliance with the Contract Documents. This submittal shall be reviewed and revised in accordance with the Engineer/Architect's comments and resubmitted to the Engineer/Architect for review. The information contained on the resubmittal shall not be incorporated into the work until the submittal is returned to the Contractor marked "NO EXCEPTION TAKEN" or "MAKE CORRECTIONS NOTED".

4. REJECTED ***(D)*** - The content of this submittal has been reviewed by the Engineer/Architect and has been determined not to be in accordance with the requirements contained in the Contract Document and requires too many corrections or other justifiable reason. The submittal shall be corrected and resubmitted or a submittal of an alternate shall be provided. No items are to be fabricated under this mark.

5. SUBMIT SPECIFIED ITEM ***(E)***- The content of this submittal has been reviewed by the Engineer/Architect and this review has indicated that the work displayed in the submittal is not in compliance with the Contract Documents. The Contractor shall submit another submittal for this portion of the work, which complies with the Contract Documents.

6. RECEIVED ***(R)*** - This submittal is accepted on the project and filed for record purposes only, in accordance with the terms and conditions of the Contract Documents. Documents marked “RECEIVED” will not be returned.

C. No payment will be made on any item for which a submission is required if such submission:

1. has not been made,

2. has been made but was not stamped “No Exceptions Taken” by Engineer/Architect,

3. has been made and stamped “Make Corrections Noted”, but contractor has not complied with Engineer/Architect’s notes marked on the submittal,

4. has been made and stamped “No Exceptions Taken”, but item provided does not conform to the shop drawing nor to the Contract Documents.

D. Submittals not required by these specifications will not be recognized or processed.

E. Provide a 3-inch by 5-inch space for the Engineer/Architect’s review stamp.

1.09 - RESUBMISSIONS

A. Prepare new and additional submissions, make required corrections, and resubmit corrected copies until found in compliance with the Contract Documents.

B. On, or with, re-submittals, clearly describe revisions and changes made, other than the corrections requested by Engineer/Architect, which did not appear on the previous submissions.

1.10 - CONTRACTOR’S RESPONSIBILITIES

A. Engineer/Architect’s review of submittals shall not relieve the Contractor of his/her responsibility for any deviation from the requirements of the Contract Documents nor relieve the Contractor from responsibility for errors or omissions in the submittals.

B. No portion of the work requiring a submission shall be commenced until the Engineer/Architect has found the submission in general compliance with the Contract Documents.

C. The Contractor shall provide written notification of any specification or drawing deviation.

1.11 - EXCESS COSTS FOR ENGINEERING/ARCHITECTURAL SERVICES

A. The Owner will charge to the Contractor, and will deduct from the partial and final payments due the Contractor, all excess engineering and architectural expenses incurred by the Owner for extra services (work) conducted or undertaken by the Engineer/Architect as stipulated below:

1. Services and other similar charges because of the Contractor's errors, omissions, or failures to conform to the requirements of the Contract Documents as related to administrative charges associated with non-compliance with the requirements for making project submissions.

2. Services and other similar charges required to examine and evaluate any changes or alternates proposed by the Contractor and which may vary from the Contract Documents.

3. Services and other similar charges as a result of the Contractor's proposed substitution of materials, equipment or products which require a redesign of any portion of the project, as contained in the Contract Documents at the time of bid.

4. Services and other similar charges as a result of the Contractor's proposed substitution of products which require an engineering and/or architectural evaluation, beyond the time stipulated in Section 012500, to determine if the substituted product is equal to that specified.

5. Services and other similar charges as a result of changes by the Contractor to dimensions, weights, sizes, voltages, phase, horsepower, materials of construction, and similar physical or operating characteristics of the product furnished which require redesign of the project in any way.

6. Services and other similar charges for the review of resubmissions of shop drawings that have been marked as "No Exceptions Taken" or "Make Corrections Noted".

7. Services and other similar charges for the review of shop drawings submitted more than two (2) times for the same product or portion of the work.

1.12 - MISCELLANEOUS SUBMITTALS

A. Provide a Submittal Schedule within seven (7) calendar days from the date of the Notice to Proceed. The Submittal Schedule shall list all submittals for the project referenced by draft log number. Provide the estimated date that the submittal will be transmitted to the Engineer/Architect for review.

B. Within seven (7) calendar days from the date of the Pre-Construction Meeting, submit a Proposed Products List. This list shall be a complete listing of all products proposed for use, with name of manufacturer, service headquarters, trade name and model number of each product. Partial listings will not be accepted.

C. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.13 - SUBCONTRACTOR LIST

A. The Contractor shall submit, on AIA Form G805, within THIRTY (30) calendar days after the date of the Notice to Proceed, a list of all subcontractors, including the names of the major subcontractors that were submitted at the time of the bid.

1.14 - SAFETY DATA SHEETS (SDS)

A. Comply with “Right to Know” requirements of Chapter 551 of Laws of New York, 1980, concerning notification of the use of toxic substances.

B. Any product or substance used by the Contractor or its subcontractors which is listed in Subpart Z of OSHA Part 1910 Title 29 of the Code of Federal Regulations entitled “Toxic and Hazardous Substances” shall be identified to the Owner/Engineer/Architect by the Contractor’s submission of a standard Safety Data Sheet (SDS) in accordance with “Right To Know” requirements.

C. Products will not be permitted to be kept on site without a SDS.

1.15 - SHOP DRAWINGS

A. Submit shop drawings for all fabricated work, for all manufactured items and for items specifically required by the specifications.

B. Submit each shop and layout drawing to Engineer/Architect in the form of two (2) prints.

1. After the submittal has been reviewed by the Engineer/Architect, the transparency will be annotated, prints will be made for Engineer/Architect’s and Owner’s use, records, and distribution.

2. Engineer/Architect will return the transparency to the Contractor.

3. Send one print to the Owner as specified above.

C. **Submit one (1) electronic copy, in PDF format, of each standard drawing, catalog cut, or other material and two (2) hard copies of each shop dwg. Samples shall be delivered directly to the office of the Engineer/Architect. The Engineer/Architect will return an electronic copy only of each submittal once reviewed.**

D. Subcontractors shall submit shop drawings directly to the Contractor for checking. Thoroughly check subcontractors' shop drawings for measurements, sizes of members, details, materials, and conformance with the Contract Documents.

1. Return submittals which are found to be inaccurate or in error.

2. Do not submit to the Engineer/Architect until all corrections have been made.

E. Clearly show the relationship of the various parts of the project and where the information provided on the submission depends upon field measurements and existing conditions.

F. The Contractor shall make all measurements, confirm existing conditions, and include them on the shop drawings before making a submission to the Engineer/Architect. All costs associated with correcting errors in the field due to negligence in confirming existing conditions or obtaining correct measurements prior to installation shall be borne solely by the Contractor.

G. Submissions for a single item, or group of related items shall be complete.

H. When submitting manufacturers' catalogs, pamphlets or other data sheets, in lieu of prepared shop drawings, clearly mark the items being submitted for review.

I. If the shop drawings contain any departures from the contract requirements, specifically describe them in the letter of transmittal.

1. Where such departures require revisions to layouts, structural, architectural, electrical, HVAC or any other changes to the work as shown, Contractor shall, at his own expense, prepare and submit revised drawings accordingly.

2. Make drawings the same size as the Contract Drawings and to the same scale.

1.16 - SAMPLES

A. Where required, or where requested by the Engineer/Architect, submit sample or test specimens of materials to be used or offered for use.

1. Samples shall be representative, in all respects, of the material offered or intended, shall be supplied in such quantities and sizes as may be required for proper examination and

tests, and shall be delivered to Engineer/Architect, prepaid, along with identification as to their sources and types of grades.

2. Submit samples well in advance of anticipated use to permit the making of tests or examinations.

B. Samples will be checked for conformance with the design and for compliance with the Contract Documents.

C. Work shall be in accordance with the approved sample. The use of materials or equipment for which samples are requested or required to be submitted is not permitted until such time that the Engineer/Architect has completed his review.

1.17 - MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Engineer/Architect.

B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation. Provide manufacturer’s instructions with shop drawings.

1.18 - CERTIFICATIONS

A. Submit certifications of compliance indicated in the Contract Documents.

B. Certifications shall be complete and exact, they shall be properly authenticated by the written signature, in ink, of an owner, officer or duly authorized representative of the person, firm or organization issuing such certification and they shall guarantee that the materials or equipment are in complete conformance with the requirements of these specifications.

1.19 - COLORS AND PATTERNS

A. Unless the precise color and pattern are specified, whenever a choice of color or pattern is available in a specified product, submit accurate color and pattern charts for Engineer/Architect’s and Owner’s review and selection.

1.20 - MANUFACTURER’S SERVICE CENTER

A. The product of a manufacturer who does not maintain an adequate nearby service center and a sufficient stock of spare parts are subject to rejection by Engineer/Architect solely on that basis.

B. With each submission, submit information on manufacturer's facilities and give complete details of his service policies and capabilities, and a general idea of the stock of spare parts available. Submit this information in the form of a certification. Also include names, addresses and telephone numbers of at least three of the service center's present customers who are in the area of the project.

1.21 - TEST RESULTS AND INSTALLATION

A. Whenever field startup services are specified, the Contractor shall obtain from the manufacturer and submit to the Engineer/Architect Manufacturer Startup Reports (MSR's). The report shall detail the results of the field visit and all special conditions resulting from the startup.

B. Whenever field or factory tests are required on materials, equipment and systems, such tests shall be performed and the test results submitted to Engineer/Architect in the form of a MSR.

C. Do not deliver to the project or incorporate into the work any materials or equipment for which Engineer/Architect has not completed his review and found same to be in general conformance with the Contract Documents.

D. Submit MSR's within thirty (30) calendar days after the date of the startup or factory test.

1.22 - SPARE PARTS LIST

A. Prepare a list of all spare parts specified to be provided in other Sections. Compile the total list for the purposes of reviewing actual spare parts delivered versus spare parts specified to be provided. The list shall reference the Section, model number, and quantity to be provided.

1.23 - WAIVER OF CERTAIN SUBMITTAL REQUIREMENTS

A. Unless otherwise specified, the requirement to submit data and samples for products specified for approval will be waived for products specified by brand name if the specifically named products are furnished for the work. In such cases, the Contractor shall submit two (2) copies of required Product Data directly to the Engineer/Architect's field representative for information and verification during its incorporation into the work. The SUBMISSION TRANSMITTAL FORM shall always be used.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

CONTRACTOR'S COMPANY NAME:_____
ADDRESS:_____

SUBMITTAL TRANSMITTAL FORM – CONTRACT G/P/E/S

TOWN OF RIVERHEAD / CALVERTON SEWER DISTRICT
UPGRADE OF THE SEWAGE TREATMENT PLANT
AT CALVERTON MODULE NO. 1 (0.100 MGD)
CONTRACT NO. CASD 1602

Contractor Submittal No.:	
Name of Item Submitted:	
General Location Point of Use:	
Date of Submission:	
Number of Times Submitted (incl. this one):	
Date of Previous Submission:	
Name of Subcontractor:	
Supplier Name and Number:	
Manufacturer Name and Number:	
This Item is a Substitution (Y/N):	
Specification Section No.:	
Drawing Sheet No.:	
Remarks/Deviations:	

CONTRACTOR'S CERTIFICATION STATEMENT:

By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers, and similar data and I have reviewed and approved this submittal and checked and coordinated each item with the other applicable approved Shop Drawings and all Contract requirements.

Contractor's Approval Stamp	H2M Shop Drawing Review Stamp

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Codes

B. Governing agencies

C. Permits

1.02 - CODES

A. Comply with the requirements of the various codes referred to in these Specifications. Such codes shall be the date of the latest revision in effect at the time of receiving bids.

B. If there is a conflict between local, state, and/or Federal regulatory requirements, seek a consultation with the State Department of Labor. Resolve conflicts to the satisfaction of the State Department of Labor prior to commencing work.

C. Electrical Work: Conform to the requirements of the National Electrical Code (NEC) unless otherwise shown or specified. Conform to the requirements of the Electrical Code of the City of New York unless otherwise shown or specified. The Owner will be the sole judge of the interpretation of these rules and requirements.

1.03 - GOVERNING AGENCIES

A. All work shall conform to and be performed in strict accordance with all governing agencies such as, but not limited to:

1. Occupational Safety and Health Act - OSHA

2. State Department of Environmental Conservation

3. State Building Code

4. State Fire Code

5. National Fire Protection Association - NFPA

6. National Electrical Code

7. State Plumbing Code

8. New York State Energy Code

9. County Department of Health

10. Town Codes, Rules, Laws and Ordinances

11. Sewer District Sewer Use Code

12. Local Water District

13. Electric utility

14. Gas Utility

1.04 – PERMITS AND INSPECTIONS

A. Representatives of the Owner shall have access to the work for inspection purposes. The Contractor shall provide facilities suitable to the Owner to facilitate inspections of the installed work.

B. Obtain and pay for all permits, fees, licenses, certificates, inspections and other use charges required in connection with the work.

C. Such permits include, but are not limited to:

1. Dewatering Permit

2. Water service permits

3. Clearing and tree removal

4. Transportation and disposal of construction debris

5. Building permits that are required by the municipality where the work is located. Arrange for inspections of the work by the municipal building department before closing in the installed work, if so required. Work will not be accepted for payment until such inspections are performed and accepted by the building department.

6. Obtain a New York Board of Fire Underwriters inspection and certificate.

1.05 – LISTINGS

A. Equipment and materials for which Underwriters' Laboratories, Inc. (UL) provides product listing service, shall be listed and bear the listing mark. Alternately, ETL Testing Laboratories, Inc. Product Safety Testing Listing is acceptable if the listed product has been tested to the applicable UL Standard.

1.06 – FIRE RESISTANT CONSTRUCTION MATERIALS AND ASSEMBLIES

A. Conform to the fire rating classifications based upon the test methods and acceptance criteria in the Standard, Fire Tests of Building Construction and Materials for which Underwriters' Laboratories, Inc. (UL) provides listings.

B. Materials and assemblies shall comply with the acceptance criteria, detailed description of the assembly, its performance in the fire test and other pertinent details such as specification of materials, Classification coverage, and alternate assembly details.

C. Alternatively, fire resistance rating classifications by other issuing organizations listed in the Fire and Building Codes are acceptable.

1.07 – COORDINATION WITH ELECTRIC UTILITY COMPANY

A. Comply with the utility company requirements for the incoming electric service.

B. Pay the utility company's charges in connection with the installation of the incoming service.

C. An allowance for the utility company's charges is included in Section 012100.

D. Comply with the utility company requirements for the incoming electric service.

1.08 – COORDINATION WITH GAS UTILITY COMPANY

A. Comply with the utility company requirements for the incoming gas service.

B. Pay the utility company's charges in connection with the installation of the incoming service.

C. An allowance for the utility company's charges is included in Section 012100.

D. Comply with the utility company requirements for the incoming gas service.

1.09 – COORDINATION WITH WATER UTILITY

A. Comply with the water utility requirements for water and fire service connections. Obtain and pay for all necessary permits from the water utility. Obtain authority to connect to the existing water mains.

B. Make necessary connections to existing public water mains under supervision of the water utility representative. Connections to existing public water mains will be made by the water utility.

C. Pay the water department's charges for the connections.

1.10 – COORDINATION WITH SANITARY SEWER UTILITY

A. Comply with the public utility requirements for the connection of sanitary sewer lines to the public utility services. Obtain and pay for all necessary permits from public sewer department. Obtain authority to connect to their existing sanitary sewers.

B. Make necessary connections to existing public sewer lines under the supervision of sewer department's representative. Connections to the existing public sanitary sewer will be made by the public sewer department.

C. Pay the sewer department's charges for the connections.

1.11 – COORDINATION WITH TELEPHONE UTILITY COMPANY

A. Comply with the utility company requirements for the incoming telephone service. Pay the utility company's charges in connection with the installation of the incoming service. An allowance for the utility company's charges is included in Section 012100.

B. Contact the local telephone company and arrange for the removal and relocation of existing telephone equipment.

C. Pay charges associated with relocation of telephone equipment by the utility.

PART 2 – PRODUCTS
Not Used

PART 3 – EXECUTION
Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - ABBREVIATED SUMMARY

A. This Section explains the format of the specifications.

1.02 - SPECIFICATION FORMAT

A. The Specifications are generally arranged according to the Construction Specifications Institute (CSI) format. Most of the technical requirements are specified in the technical specifications of the document, which are grouped into forty-eight (48) major divisions (Not all divisions used). Most of the legal and administrative requirements are included in Division 1, General Conditions, Information For Bidders, and the Contract (agreement).

B. Technical sections are arranged in numerical order, however section numbers may not be consecutive from section to section.

C. Page numbering is subordinate to each section.

D. Most sections are generally broken down into three (3) parts:

1. PART 1 - GENERAL

2. PART 2 - PRODUCTS

3. PART 3 - EXECUTION

E. Not all these parts may be used and in some cases, the title of some of the parts may be different than listed above. Paragraph numbers are subordinate to each part.

F. The Contractor is advised that the format described here is flexible in nature.

1. There is some overlapping of specified information between various portions of the Specifications.

2. In all cases, the entire requirements of the Contract Documents for the project shall apply.

G. Explanations:

1. Many technical sections begin with a paragraph titled “SECTION INCLUDES”, “DESCRIPTION”, or similar wording.

a. In these paragraphs, a brief listing of the specified products may appear or a brief description of the work generally specified in that section is presented.

b. These descriptions or listings are not all inclusive, but merely are provided as an aid in locating subject matter.

c. In some cases special cost related items of work are called to the attention of the Contractor in these opening paragraphs.

2. "RELATED SECTIONS" or "RELATED WORK" or similar wording paragraphs list or reference related work specified elsewhere in the Contract Documents. Such listing is not all inclusive, rather, they are merely an aid to the Contractor in locating some of the other Specification Sections wherein work is specified which has a particularly close interrelationship with the work specified in that section.

a. It shall be understood that all of the Work, and all of the Specifications and other portions of the Contract Documents, are interrelated, and that the total of all requirements set forth in all of the Contract Documents shall be met.

b. Equipment suppliers and manufacturers shall be advised of the requirements for making submittals and delivering products, as specified in Division 1 sections, even if said sections are not referenced therein that section.

3. "REGULATORY REQUIREMENTS" or "REFERENCES" or similar wording paragraphs describe standards, laws, guidelines, regulations, and standards related to workmanship and installation of the products specified which shall be followed by the Contractor in completing the work specified therein that section as if it was written there in that section. All such requirements and references shall be latest issue in effect at the time of the bid opening.

4. When a "GUARANTEE" or "WARRANTY" paragraph appears in the section it is calling attention to a guarantee which extends beyond the period of the Contractor's Guarantee called for in the administrative portion of the Contract Documents or it states special requirements specific to the equipment, systems or products specified in that section.

H. Multiple Contract Book Format.

1. A single contract book has been prepared for this project that incorporates all the specifications sections for all four (4) prime contracts. Each section is designated as pertaining to one or more of the prime contracts, (i.e CONTRACT – G; or ALL CONTRACTS; etc.).

2. If the section indicates multiple contract references then each prime contract has all, or partial responsibility of items/work as stipulated within that section. Partial responsibility will be detailed specifically. If partial responsibility is not specifically noted, then each prime contract contractor is to assume all portions of the specification section pertain to the work of their contract equally.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Work of this Section includes the requirements for pre-installation meetings.

1.02 – PRE-INSTALLATION MEETINGS

A. The Contractor shall convene a pre-installation meeting at the site prior to commencing work of the installing new equipment.

B. Pre-installation meetings are to be convened at least one week prior to commencing work on the section. The contractor shall arrange and require attendance of Owner/Engineer and parties directly affecting, or affected by, work of the specific section.

1. At least seven (7) calendar days advance notice is to be given.

2. The contractor shall prepare agenda and preside at meeting. At a minimum the following items are to be discussed:

a. Review conditions of installation, preparation and installation procedures.

b. Review coordination with related work.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Requirements for monitoring the quality of the constructed project.

B. Work of this Section also includes services of an independent testing laboratory for quality assurance testing.

C. The services of the testing laboratory will be paid for out of the cash allowance included by the Contractor in the price as bid in accordance with the requirements contained herein and in Section 012100 – Allowances.

1.02 - REFERENCES

A. ASTM C1077 - Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.

B. ASTM D3740 - Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.

C. ASTM D4561 - Practice for Quality Control Systems for an Inspection and Testing Agency for Bituminous Paving Materials.

D. ASTM E699 - Practice for Criteria for Evaluation of Agencies Involved in Testing, Quality Assurance, and Evaluating Building Components in Accordance with Test Methods Promulgated by ASTM Committee E6.

1.03 - QUALITY ASSURANCE - CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

B. Comply with specified standards as a minimum quality for the work except when more stringent tolerances, codes, or specified requirements indicate higher standards or workmanship that is more precise.

C. Perform work by persons qualified to produce workmanship of specified quality.

D. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

E. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

1.04 - QUALITY ASSURANCE - TESTING LABORATORY

A. In order to establish compliance with the Contract Documents, materials shall be tested, examined and evaluated before they are incorporated into the work. During and after installations, additional tests, examinations, and evaluations shall be made to determine continued compliance throughout the course of the work.

B. Testing laboratory shall be a reputable, experienced firm that is capable of performing all of the required testing and authorized to operate in the state in which the project is located.

C. Perform all sampling and testing in accordance with specified procedures and use the materials, instruments, apparatus, and equipment required by the codes, regulations and standards. Where specific testing requirements or procedures are not described, perform the testing in accordance with all pertinent codes and regulations and with recognized standards for testing.

D. In the event that samples and test specimens are not properly taken, handled, stored or delivered or if other requirements of this Section are not complied with, Engineer reserves the right to delegate any or all of this work to others, or to take whatever action deemed necessary to ensure that sampling and testing are properly accomplished, for which all costs shall be borne by Contractor.

E. Engineer reserves the right to disapprove the use of a specific testing laboratory, even after prior approval, if the laboratory fails to meet or comply with the requirements of this Section. If this should occur, immediately discharge the testing laboratory and retain the services of a different laboratory acceptable to Engineer/Architect.

F. The testing laboratory shall meet the following criteria:

1. Be capable of performing all of the required tests.

2. Be regularly engaged in performing the types of services required.

3. Have adequate facilities, materials, equipment, and personnel to perform the services.

4. Have an adequately trained, experienced and qualified staff.

5. Have at least one registered professional engineer licensed in the state in which the project is located who shall be capable of performing field tests, supervising laboratory

testing and interpreting test results. The professional engineer shall be thoroughly knowledgeable in materials, soils, asphalt paving and concrete.

6. Shall be able to be on the Project site within two hours after being notified.

7. Comply with the requirements of ASTM C1077, ASTM D3740, ASTM D4561, ASTM E548 and ASTM E699.

8. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants.

1.05 – REFERENCE STANDARDS

A. Conform to reference standards by date that the project was last bid.

B. Obtain copies of standards when required by Contract Documents.

C. Should specified reference standards conflict with Contract Documents, request clarification from Engineer/Architect before proceeding.

D. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.06 - SUBMITTALS

A. Within fifteen (15) calendar days from the date of the Notice to Proceed, submit documentation from three (3) testing laboratories that clearly indicates experience, location, qualifications of staff, and descriptions of any limitations or restrictions of the firm.

1. Include a price schedule for standard tests and a billing rate schedule for technician classifications, including half day rates.

2. Based upon this information, the Engineer will select one firm to be the primary testing laboratory and one firm to act as a standby.

B. Certified copies of each test report shall be mailed directly to the Engineer. The Contractor shall arrange with the laboratory to secure copies.

C. Each report shall be in writing and shall include the testing method used, the test results, the specified results, the exact location of where the test specimens were taken, the date taken,

Project identification, Contractor's name and other pertinent information required for a complete and meaningful test report.

D. Each report shall be signed and certified by a responsible officer of the testing laboratory.

E. Mail reports directly to Engineer/Architect within 24 hours after the sample is taken, except in those instances when tests cannot be immediately performed because of required curing, incubation periods, or lengthy testing procedures.

F. The laboratory shall verbally communicate test results when requested by the Engineer. This does not eliminate nor replace the requirements for a written report.

1.07 - SCHEDULING - LABORATORY SERVICES

A. Except where otherwise specified, the Engineer/Architect will determine the number of samples to be taken, the date and time samples will be taken and tests made, the number and type of tests to be performed, who will collect the samples, how they will be handled and stored and when laboratory personnel are required on site.

B. Engineer will notify Contractor of his decision to take samples and/or have tests made and provide him with the pertinent information. Contractor is responsible for notifying the testing laboratory and for having the testing performed, on schedule.

C. In addition to the above, Contractor shall make his own arrangements for the sampling and testing of materials he proposes to incorporate into the work. This shall not be paid for out of the cash allowance.

D. Notify Engineer/Architect at least 72 hours in advance of the times at which scheduled samples or tests will be conducted.

E. If samples and/or tests cannot be taken or performed when required, delay the work until such time that they can be accomplished. Where possible, any work that has been installed but has not been sampled or tested as required, shall be tested by other means. Upon Engineer's request, uncover any work, which has been buried or covered, and perform special tests designated by Engineer/Architect. If the work cannot be tested by other means, Engineer may declare the work unacceptable. All costs associated with noncompliance and for special testing shall be borne by the Contractor and not be paid for out of the cash allowance.

F. Should the testing laboratory be scheduled to take or collect samples or to perform tests, and finds that it is unable to do so as a result of delays in construction, inclement weather, or any other reason, reschedule the tasks for a date acceptable to Engineer/Architect. Costs associated with

times testing laboratory is unable to perform scheduled services shall be borne by the Contractor and will not be paid for under the allowance.

G. Plan all work and operations to allow for the taking and collection of samples and allow adequate time for the performance of tests. Delay the progress of questionable work until the receipt of the certified test reports.

1.08 - TESTING REQUIREMENTS

A. Dry Paint Thickness Measurement: Perform dry paint thickness using calibrated SSPC Type 2 fixed probe gages.

B. Compaction Testing - Soil:

1. Perform compaction testing in accordance with ASTM D2922, Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth) or ASTM D1556 Density and Unit Weight of Soil In Place by the Sand Cone Method.

2. Perform tests and analysis of fill material in accordance with ANSI/ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5-lb. Rammer and 12-inch Drop.

C. Compaction Testing - Asphaltic Concrete Pavement:

1. Perform asphaltic concrete compaction testing in accordance with ASTM D2950 - Standard Test Method of Density of Bituminous Concrete in Place by Nuclear Methods.

2. Calibrate nuclear density measurement equipment based on theoretical maximum specific gravity of asphaltic concrete pavement material.

3. Perform test to determine theoretical maximum specific gravity in accordance with ASTM D2041 Theoretical Maximum Specific Gravity of Bituminous Pavement Mixtures. Perform test on mix at plant prior to delivery. Collect sample at plant in accordance with ASTM D979 - Sampling Bituminous Paving Mixtures and perform test in approved laboratory if plant does not have necessary equipment.

D. Concrete Testing:

1. Collect samples in accordance with ASTM C172, Practice for Sampling Freshly Mixed Concrete.

2. Make test cylinders in accordance with ASTM C31, Standard Practice for Making and Curing Concrete Test Specimens in the Field.

3. Test concrete cylinders in accordance with ASTM C39, Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

4. Test slump and air entrainment.

E. Asphalt Testing:

1. Collect samples at point of delivery in accordance with ASTM D979, Standard Practice for Sampling Bituminous Paving Mixtures.

2. Perform extraction test in accordance with ASTM D2172, Standard Test Methods for Quantitative Extraction of Bitumen from Bituminous Paving Mixtures.

3. Perform gradation test in accordance with ASTM C136, Method for Sieve Analysis of Fine and Coarse Aggregates.

1.09 - TESTING SCHEDULE

A. Dry Paint Thickness Measurement:

1. Make five (5) separate spot measurements spaced evenly over 100 square feet of area.

2. For structures exceeding 1000 square feet of finished surface, three 100 square feet areas shall be randomly selected by the engineer plus one 100 square foot area for each additional 1000 square feet of finished surface. This requirement shall be subject to change as required by the Engineer.

B. Compaction Testing of Soil:

1. Pipe Installation: As directed by the Engineer/Architect.

2. Concrete flatwork: As directed by the Engineer/Architect.

3. Pavement subgrade: As directed by the Engineer/Architect.

C. Concrete Testing: Make six (6) concrete test cylinders for each 50 c.y. or fraction thereof.

1. Test two (2) cylinders at 7 days.

2. Test two (2) cylinders at 28 days.

3. The remaining cylinders shall be tested at a time to be determined by the Engineer. This requirement shall be subject to change as required by the Engineer.

D. Asphalt Testing: As directed by the Engineer/Architect.

E. Compaction Testing of Pavement: As directed by the Engineer/Architect.

1.10 - FIELD OBSERVATION OF CONTRACTOR'S WORK

A. The Engineer will provide periodic observation of the Contractor's work in accordance with the General Conditions of the Contract.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 - EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions. Verify that the existing substrate is capable of structural support or attachment of new Work being applied or attached. Examine and verify specific conditions described in individual specification sections. Verify that utility services are available, of the correct characteristics, and in the correct locations.

3.02 - PREPARATION

A. Clean substrate surfaces prior to applying next material or substance. Seal cracks or openings of substrate prior to applying next material or substance.

B. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 - FIELD QUALITY CONTROL

A. Allow representatives of the testing laboratory access to the work at all time. Provide all equipment, labor, materials, and facilities required by the laboratory to properly perform its functions. Cooperate with and assist laboratory personnel during the performance of their work.

B. Test specimens and samples shall be taken by the person(s) designated in other Sections, or as directed by Engineer/Architect. Conduct field sampling and testing in the presence of Engineer.

Provide all materials, equipment, facilities and labor for securing samples and test specimens and for performing all field-testing.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. This Section supplements the General Conditions.

B. The Work of this Section includes temporary facilities, utilities, and controls to be furnished by the Contractors for this project as it is specified herein.

C. This Section is made a part of all Construction Contracts associated with the project. It contains specific references to the particular Contractor supplying said product or service. If no reference is provided then the requirement applies to all Prime Construction Contractors.

1.02 - CARE AND PLACEMENT

A. All temporary and permanent facilities and controls and all other elements on the project site shall meet all standards of the Occupational Safety and Health Act of 1970 and subsequent revisions. Each Contractor shall comply with all requirements of the Act.

B. Each Contractor shall take every precaution and shall provide such equipment and facilities as are necessary or required for the safety of its employees and persons at the site.

C. In the event of damage to existing and/or temporary facilities, the Contractor shall immediately make all repairs and replacements to an equal condition prior to the event.

1.03 - QUALITY PERFORMANCE

A. Comply with and perform all work in accordance with the requirements of local authorities and utility companies having jurisdiction, and all applicable codes, regulations and ordinances.

B. Secure approvals from the appropriate jurisdictions and utility companies on all repairs, relocations, connections, disconnections and the Work.

C. All barricades, warning signs, lights, temporary signals and other protective devices shall conform with “Manual on Uniform Traffic Control Devices for Streets and Highways”, US Government Printing Office.

1.04 - SUBMITTALS

A. Each Contractor shall provide a list of contact numbers as follows:

1. Contractor’s superintendent and office project manager (home, beeper, cellular, office, fax, trailer, and email address).

2. All subcontractors.

3. All utility companies.

4. Emergency services such as fire department, police, and ambulance.

5. Each Contractor shall also submit the following:

   a. Name and qualifications of person or persons who shall be available to render first aid.

   b. Names, addresses and telephone numbers of at least (2) other personnel who can be telephoned and act on behalf of Contractor in the event of emergencies or other problems requiring prompt attention during winter shutdown, holidays, nights and other periods when the Contractor's superintendent may be absent from the project site.

B. The General Contractor shall provide a sketch showing routing of temporary water service for construction purposes and for exfiltration tank testing. Provide cuts and plumber's certification for backflow device(s).

C. Update contact list and provide to Engineer for any changes throughout the course of the project.

1.05 - CONTRACTOR'S RESPONSIBILITY

A. Each Contractor shall be responsible for the installation, performance, maintenance, and repair of all temporary facilities and controls specified herein this Section as originally provided.

B. The Owner reserves the right to immediately correct a Contractor caused action, if in the opinion of the Owner, the situation may result in the immediate loss of life, property, and degradation of the environment. The costs for actions taken by the Owner shall be deducted from money due or to become due to the Contractor. Amounts in excess shall be paid by the Contractor.

C. If the Contractor caused situation is not deemed immediate, then the Contractor shall, within 24 hours of receipt of written and/or verbal notice, correct the defect or unsatisfactory condition.

D. The Owner may repair, correct, replace, or install temporary facilities to correct the situation if the Contractor fails to perform within the allowed time. The costs to make the corrections shall be deducted from money due or to become due to the Contractor. Amounts in excess shall be paid by the Contractor.

PART 2 - PRODUCTS

2.01 - GENERAL

A. The Owner may use temporary power lines, pipes, roadways or other facilities that each Contractor furnishes, installs, and maintains (then removes at the completion of the work), during the period of construction.

B. The location of all temporary power lines, roadways, and other necessary temporary facilities shall be subject to the approval of the Engineer, and these shall be located and operated so as not to interfere with the operation of the facilities.

2.02 - WATER FOR CONSTRUCTION PURPOSES

A. Each Contractor shall obtain water from the nearest potable water source as designated by the Owner.

B. The Owner will pay for water usage for general construction activities such as dust control and for sanitary purposes, like hand washing.

C. Potable water process tank exfiltration testing will not be paid for by the Owner. The General Contractor shall include the costs for all water for this purpose in the price as-bid.

D. Each Contractor shall provide material and labor and secure necessary permits to install his or her own backflow prevention device at the supply point where it is connected to the Owner's system.

1. The water purveyor shall approve the device.

2. The device shall be tested and certified as functioning properly.

3. Post the certification in a location acceptable to the water purveyor.

E. A water meter shall also be installed on any water service lines used to supply water for exfiltration testing.

F. Each Contractor shall exercise measures to conserve water.

G. Provide insulation and heat tracing to prevent freezing of temporary piping. Drain hoses at the end of each use.

H. All Contractors, subcontractors, and personnel involved in the project shall be permitted to use water for construction purposes as provided under this paragraph.

2.03 - SANITARY FACILITIES

A. The General Contractor shall provide and maintain temporary toilet facilities and enclosures for the duration of the project for use by all other Prime Contractors.

B. These facilities shall be maintained in a strictly sanitary manner and be screened from the general public.

C. All facilities shall be in accordance with the Occupational Safety and Health Act (OSHA) standards and all other applicable local codes.

D. The locations of such facilities shall be determined by the Engineer or the Owner and be shown on the General Contractor's Site Utilization Plan.

E. All applicable codes and regulations regarding the maintenance and method of waste disposal for these facilities will be strictly enforced. These facilities shall be of the portable type.

F. The Owner's sanitary facilities will not be available for use by any Contractor.

G. Comply with the requirements also contained in Section 015719 – Temporary Environmental Controls

2.04 - HEAT

A. Each Contractor shall provide and pay for heating devices and fuel as required to maintain adequate heat for specific construction operations; i.e. painting, application of coatings, etc., where so specified elsewhere in these specifications.

B. The General Contractor shall heat buildings/structures to properly apply paint in accordance with Section 099100 requirements of Contract G.

C. The Plumbing Contractor shall heat buildings/structures to properly apply paint to piping in accordance with Section 099100.

D. Each Contractor shall maintain minimum ambient temperature of 40 degrees F in areas where construction is in progress, unless indicated otherwise in specifications or as required by proposed working conditions and manufacturer's installation/application instructions.

2.05 - VENTILATION

A. Each Contractor shall ventilate enclosed areas to assist in the curing of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors or gases.

B. The General and Plumbing Contractors shall ventilate buildings to safely apply paint in accordance with Section 099100 requirements.

2.06 - BARRIERS AND PROTECTION

A. Each Contractor shall provide railings, barricades, signs, fences and other protective devices to prevent unauthorized entry to construction areas, to allow for the Owner's safe use of the site and to protect existing facilities and adjacent structures from damage from the work.

B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing buildings.

C. Provide protection for plant life designated to remain.

D. Protect vehicular traffic, stored materials, public utilities, site and structures from damage.

E. Provide warning signs, detour signs and other traffic control devices to insure the safety of plant operators and to adequately direct traffic around the work. Illuminate barricades, obstructions, and warning signs from sunset to sunrise.

2.07 - TEMPORARY FENCING

A. Each Contractor is responsible for performance compliance with OSHA standards.

B. Each Contractor shall provide temporary safety fence around all open excavations or other dangerous conditions on the construction site.

1. All temporary safety fencing shall be designed and erected in compliance with OSHA standards, but in no case less stringent than these specifications for fencing.

2. Fence is to be bright orange in color, a minimum of 4 feet high, and properly secured using 1” diameter steel pipe at 4’-0” on-center as support posts.

3. Stake each support post to a depth of 18” and tamp securely into place.

4. Each post shall be plumb.

5. Secure fencing to posts using heavy-duty 12” long cable ties or tie wire.

6. The fence and supports shall remain the property of the Contractor and be promptly removed at the appropriate time.

2.08 - TEMPORARY HANDRAILS AND SCAFFOLDS

A. All temporary handrailing and scaffolds shall be designed and erected in compliance with OSHA standards. Each Contractor is responsible for performance compliance with OSHA standards.

B. Handrails shall be securely installed and maintained in accordance with OSHA regulations until the permanent railing or grating has been permanently installed and approved by the Engineer.

C. All scaffolding and platforms shall be erected in a safe and substantial manner complying with OSHA requirements.

D. All temporary handrails and scaffolds shall be designed by a professional engineer licensed in the state where the project is being constructed.

1. The design drawings and details shall be stamped by the licensed engineer and submitted for record purposes.

2. The Contractor's design engineer shall visit the site to certify that the handrailing and/or scaffolds have been erected pursuant to the stamped design.

E. The General Contractor shall protect all openings in building/structures of any type such as shafts, deck openings, and other building related chases.

2.09 - EROSION CONTROL

A. Each Contractor shall provide measures to keep the ground surface well drained, but avoid erosion of embankments, excavations, the project site, and adjacent areas.

B. Each Contractor shall comply with all local codes, rules, and regulations concerning soil erosion.

1. Use hay bales or silt fences to control erosion to the satisfaction of the Engineer and regulatory agencies. Use hay bales or silt fences to stop silt and sediment from reaching surface waters, parking lots and roads.

2. Leave erosion control methods in place until ground cover is established or until date of substantial completion.

C. The General Contractor shall install and maintain erosion control measures as shown on the Drawings.

D. Comply with the requirements also contained in Section 015719 – Temporary Environmental Controls.

2.10 - DUST CONTROL

A. Each Contractor shall provide measures to control dust resulting from the work.

B. Control dust at locations and in such quantities and frequencies as required to prevent dust from becoming a nuisance to the surrounding area.

C. In the event the Contractor does not adequately provide for dust control, or should insufficient quantities of dust control agents be placed and Contractor fails to place additional quantities within 4 hours after Engineer's direction, Owner will perform the required work by whatever means deemed expedient and all expenses incurred by Owner will be charged to and paid by Contractor.

D. Take care in selecting and applying dust control agents so as not to make roadways or walkways slippery, muddy or hazardous. Dust control agents shall be acceptable to the Engineer.

E. The General Contractor shall provide general dust control all roadways and construction areas throughout the project site.

F. The Sewer Contractor shall provide general dust control all roadways and construction areas throughout the project site.

2.11 - RUBBISH REMOVAL

A. The General Contractor shall be responsible for overall rubbish removal.

B. Burning of rubbish and trash will not be permitted.

C. The General Contractor shall clean up trash as specified in Section 011400 - Work Restrictions or more often if the trash interferes with the work of others, presents a hazard or if directed by the Engineer.

D. Dispose of rubbish and waste materials in accordance with state regulations and local ordinances.

E. The General Contractor shall also place rubbish containers at locations selected by the Engineer.

1. Furnish adequately sized rubbish containers from the date of initial mobilization to the date of final payment.

2. As a minimum, the Contractor shall furnish ten (10) 55-gallon general trash containers. Secure the top of each container to the container.

3. Secure the container itself so that it does not get blown about the site.

F. The General Contractor shall be responsible for maintaining the site free of trash.

G. Each Contractor shall assist the General Contractor in maintaining the site free of trash and debris.

1. It shall be the sole responsibility of the General Contractor to prevent trash from being blown about the site.

2. Provide a worker to police the site at least for 1 hour at the end of each day that work is being undertaken by the General Contactor.

2.12 – SNOW REMOVAL

A. The General Contractor shall be responsible for maintaining roads, walkways, sidewalks, and parking areas/lots free of snow.

B. Provide snow plowing during and after each snow fall equal to or greater than 1.0 inch as reported by the local weather service.

C. Any damage resulting from the Contractor's snow clearing operations shall be immediately repaired at no additional cost to the Owner.

2.13 - ENCLOSURES

A. Each Contractor shall provide and maintain temporary enclosures, sheds, or fenced-in areas to accommodate protection for products, material and equipment.

B. Store equipment that cannot be exposed to outdoors in accordance with Section 016500 - Product Delivery, Storage and Handling.

2.14 - SECURITY

A. Each Contractor shall provide security and facilities to protect work from unauthorized entry, vandalism and theft.

B. Coordinate with Owner's security program, if applicable.

C. Each Contractor has full responsibility for the working area until final acceptance and payment.

D. The General Contractor shall maintain the perimeter fence that pre-existed prior to the start of construction. A temporary perimeter fence shall be required at all times during the construction and until the new perimeter fence is installed, or until the project is accepted by the Owner.

2.15 - PARKING

A. The General Contractor shall provide an area suitable for parking at least three (3) vehicles adjacent to each field office by leveling the surface and installing 3 inches of QPS over the level surface.

B. Do not allow heavy construction vehicle parking on existing pavement, if existing pavement is not scheduled for replacement or restoration.

C. Provide and maintain access to fire hydrants, building entrances, process tanks, doors and the work in general.

D. Each Contractor shall have his or her employees and subcontractors park in areas designated by the Owner/Engineer/Architect.

E. If designated on the Contract Drawings, then only use those areas for parking.

F. Where trades work from their trucks, then coordinate the parking of trucks with other prime contactors.

G. If a Site Utilization Plan has been specified, then parking shall be as sited in the plan.

2.16 - DAMAGES

A. Each Contractor, with the prior approval of the Owner/Engineer/Architect, shall promptly repair any damage, directly or indirectly caused by the Contractor's operations.

B. All repairs shall be to the complete satisfaction of the Owner and equal in quality to that which pre-existed.

2.17 - FIRST AID FACILITIES & EMERGENCY TELEPHONE NUMBERS

A. Each Contractor shall provide and maintain adequately equipped first aid facilities in a location or at locations that are readily accessible to workmen, Engineer and visitors to the site.

B. Provide at least one on-site employee who is properly trained in first aid and who shall be available to render first aid whenever construction is in progress.

C. Provide a list of emergency telephone numbers as specified above.

D. Post the list of emergency telephone numbers as directed by the Engineer and provide updates as necessary for any changes.

2.18 - POLLUTION CONTROL

A. Do not permit pollutants, such as chemicals, fuels, lubricants, calcium chloride, sewage, water containing sediments and other deleterious, poisonous, toxic or oxygen demanding substances to enter or leach into streams, lakes, wetlands, other surface waters, into groundwater, or into the air.

B. In waters used for public water supply or used for trout, salmon or other game or forage fish spawning or nursery, control measures must be adequate to assure that turbidity in the receiving water will be increased not more than 10 standard turbidity units (s.t.u.) in the absence of other more restrictive locally established limitations, unless otherwise permitted by the State.

C. In no case shall the classification for the surface water be violated, unless otherwise permitted by the State.

D. In water used for other purposes, the turbidity shall not exceed State limits.

2.19 - REMOVALS

A. Remove all items provided under this Section except as otherwise specified.

PART 3 - EXECUTION

3.01 - PROTECTION OF EXISTING UTILITIES AND PUBLIC WORKS

A. Maintain and protect existing utilities and public works including, but not limited to, conduits, sewers, water mains, electric and telephone conductors or conduits, and gas mains encountered during the construction.

B. In the event that it is not possible to cross over, under, around or otherwise avoid the existing utility, the owner of the utility shall be notified that the utility must be altered or moved.

C. In the event that damage shall result to any service pipe for water or gas, or any private or public sewer or conduit, the Contractor shall immediately, and at its own expense, repair same to the satisfaction of the Engineer/Architect.

D. Any contents from the pipes, sewers or conduits shall be immediately removed and disposed in accordance with applicable laws.

3.02 - REMOVAL OF UTILITIES, FACILITIES AND CONTROLS

A. Remove temporary above grade or buried utilities, equipment, facilities and materials, immediately following substantial completion and prior to release of retainage.

B. Remove underground installations to a minimum depth of 2 feet.

C. Regrade site to restore to existing slope and elevation, and restore the surface.

D. Clean and repair damage caused by installation or use of temporary work.

E. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

F. Remove temporary parking and access roads.

G. Regrade area to existing slope and elevation and restore the surface to its existing condition.

H. Final payment will not be processed until all removals have been completed to the satisfaction of the Owner/Engineer/Architect.

3.03 - PROTECTION OF EXISTING PROPERTY

A. Protect existing structures and finishes during performance of the work.

B. Protect existing trees and plants during performance of the work.

C. Do not deposit excavated materials or store materials around trees or plants or attach guy wires to trees.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. The Prime Electrical Contractor shall install and maintain temporary light and electricity for use by others.

B. Temporary electricity shall be installed within fifteen (15) calendar days from the date of the pre-construction conference to all areas of the site where new work is planned or where temporary electric facilities are shown on the Contract Drawings, except as specified herein below.

1. Temporary electric shall be installed to the Engineer/Architect's office within two (2) weeks from the date of the Notice to Proceed.

2. Temporary light and electric for all buildings being constructed or renovated as work of this project shall be installed required and within 2 days of notification by the Engineer/Architect.

3. Temporary electric shall be installed to all areas where tanks are being constructed as soon as the subgrade elevation has been reached and prior to the start of slab construction.

1.02 - SERVICE

A. Provide 100-amp temporary electrical services for **each** area requiring electric for construction of the contract work.

B. Furnish means for connection of small power tools.

C. Furnish five (5) 100 foot high capacity, heavy-duty power extension cords for use throughout the site by others.

D. Applications for electrical service shall be completed by the Contractor.

E. The cost for installations, including labor, material, tools, removals, and supplies shall not be eligible for payment under any cash allowance and shall be included in the price as bid.

F. Provide 100-amp temporary power to the Engineer's office.

1.03 - TEMPORARY LIGHT AND ELECTRICITY

A. The Prime Electrical Contractor shall make all necessary arrangements for temporary electric service at the site of the Work.

B. Install and maintain all temporary light and power in accordance with the National Electrical Code.

C. At the Contractor's option, a properly sized generator may be provided during this period with all costs associated with its operation and maintenance being paid for by the Contractor.

D. Provide wiring and other equipment for temporary light and power in accordance with recognized industry standards.

1. Wiring for temporary light and single-phase power shall, in general, consist of 3 wire, 120/240 volt with branch circuits of #12 conductors minimum.

2. Provide branch circuits with weatherproof medium base type lamp holders for temporary lighting as required to maintain a minimum of 10 foot candles in the work areas of all buildings being constructed or renovated as work of this project.

3. Provide branch circuits with fused ground type receptacle outlet for single-phase power.

4. Provide lamps and fuses, including replacements.

5. Provide new materials for temporary light and power, except that transformers need not be new if they are in satisfactory operating condition.

6. Provide ground fault protection (such as portable plug-in type ground fault circuit interrupters) on single-phase 15 and 20 amp receptacle outlets.

7. Provide receptacle outlets, portable cord connectors and attachment plugs with standard NEMA configurations.

E. Upon completion of the project, remove all temporary electric light and power work and restore all affected finishes and connections.

F. Include the costs in the bid price to relocate the temporary electric service at least four (4) time during the course of construction. The electric service shall be relocated within two (2) days notice by the Engineer/Architect.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. The Work of this Section includes the furnishing of the Engineer/Architect's Field Office (Trailer).

1. The Engineer/Architect's Field Office shall be furnished by the General Contractor.

2. It shall be provided within the time period specified hereinafter.

B. The General Contractor shall also furnish the following to the Owner/Engineer all in accordance with the specifications contained herein as follows:

1. Miscellaneous equipment and supplies

2. Materials

3. Computer system with associated peripheral computer related equipment

4. Services as may be specified herein.

C. This Section also specifies the requirements for Field Offices to be established by all Prime Contractors for the exclusive use of the respective Prime Contractor.

1.02 - CARE AND PLACEMENT

A. Field offices shall be placed where directed by the Engineer/Architect in accordance with site utilization requirements.

B. All field offices shall be installed to meet all standards of the Occupational Safety and Health Act of 1970 and subsequent revisions.

C. In the event of damage to existing facilities, including but not limited to: tanks, driveways, walks, pavement, buildings, pipes, conduits, valves, and electrical facilities then immediately make all repairs and replacements to an equal condition prior to the event.

1.03 - QUALITY PERFORMANCE

A. Comply with and perform all work in accordance with the requirements of local authorities and utility companies having jurisdiction.

1.04 - SUBMITTALS

A. The General Contractor shall submit the following:

1. Computer system quotation for Engineer/Architect's approval prior to placing order.

a. The Engineer will provide the specifications for all components of the computer system, including model number and manufacturer, prior to the submission of this item.

b. Submit two quotations if so required by the Engineer/Architect.

2. Catalog cuts of miscellaneous equipment and supplies if they are different from that specified.

B. The Contractor shall also provide a listing of the companies providing specified services with telephone number and contact name. Provide references for each company when requested.

PART 2 - PRODUCTS

2.01 – TEMPORARY LIGHT AND ELECTRICITY (CONTRACT E)

A. Provide100-amp temporary power to the Engineer's trailer.

2.02 - SANITARY CONNECTION

A. Each Contractor shall install an approved Suffolk County Department of Health Services on-site sanitary disposal system for their trailer, if required.

B. The on-site system shall have a minimum capacity of 300 gallons per day.

C. The restroom facilities provided, as part of the trailer shall be connected by a licensed plumber to the on-site sewage disposal system.

2.03 - OFFICE OF PRIME CONTRACTORS

A. The General, Plumbing and Electrical Contractors shall provide and maintain during the life of this contract separate and suitable offices at the site that shall be used as the Contractor's superintendent office.

B. Provide adequate facilities for maintaining record documents, for holding small meetings and a telephone upon which calls may be received from Owner, Engineer/Architect and others. The telephone shall be equipped with a fax machine and an answering machine.

C. Each Contractor shall install, maintain, and repair if necessary, temporary electric and telephone to their own field office.

2.04 – MATERIALS, EQUIPMENT AND SERVICES FURNISHED TO THE OWNER BY THE GENERAL CONTRACTOR

A. The General Contractor shall provide the following computer system, to be paid for out of the cash allowance stipulated herein, consisting of the following:

1. Computer

2. Printer

3. Scanner

4. Digital camera

5. Tablet Computer

B. The Engineer/Architect will provide specifications for each component of the computer system that shall then be ordered by the General Contractor after the various quotations have been submitted for Engineer's review.

C. The computer shall be furnished to the Owner within 30 days from the date the Engineer provided the computer system specifications.

D. The General Contractor shall include the cash allowance as specified in Section 012100 in the lump sum bid for the computer and computer accessories to be provided under this paragraph.

1. The initial equipment purchase shall be paid for out of this cash allowance.

2. Paper for the printer shall not be eligible under this cash allowance.

3. Printer replenishable supplies shall not be eligible under this cash allowance.

E. The General Contractor shall also furnish the following equipment and services that shall not be eligible under any cash allowance. All items specified herein shall be new and remain the property of the Owner unless otherwise stated. The following shall be furnished:

1. Two (2) Texas Instruments advanced scientific calculators equal to TI-36X Pro or equal.

2. One (1) new digital answering system with two (2) cordless handsets by AT&T model CRL82212 or equal.

3. 36 inch x 48 inch new plastic sheet protectors designed specifically for protecting contract drawings, Quantity: Twenty four (24)

4. Three (3) 23-gallon plastic wastepaper basket.

5. One large set of triangles and one each of engineer's scale and architect's scale.

6. New 50-person industrial first aid station, OSHA approved, by Acme United or equal, order no. ACM-1403 (Huntington Business Products) or equal.

7. Thermometer, with indoor and outdoor sensing bulbs, and high, low instantaneous reading, with magnetic reset function by Radio Shack or equal.

8. Four (4) outdoor thermometers for recording curing temperatures of placed cold weather concrete (TAYLOR Model No. 6096-N)

9. One (1) infrared temperature thermometer (EXTECH Model #42509)

10. Two U.L. and F.M. approved fire extinguishers with a minimum rating of 4A-60B:C.

11. Dry type color photocopier with all necessary equipment and supplies.

    a. Model shall be capable of reproducing 8½" x 11", 8½" x 14" and 11" x 17" size papers.

    b. Two sided copy feeder and printer.

    c. Automatic original feeder

    d. Photocopier shall remain the property of the Contractor.

    e. Manufacturer support through project completion.

12. Standard manufacturer operating manuals for all equipment supplied.

13. Two (2) 30" x 60" desks with 4 side drawers and a locking center drawer.

14. Two (2) new swivel task chairs for use with desk equal to order no. ALEEL42ME10B by Alera (Huntington Business Products).

15. Four (4) guest chairs.

16. Two (2) drafting style stools for use with the drafting table.

17. One (1) new rolling stand with top, Model No.506 by Safco with six (6) 24”x36” clamps, or equal.

18. Two (2) 48” x 60” reference tables.

19. Five (5) folding chairs.

20. One (1) drafting tables constructed in the office.

21. One (1) new electronic professional labeler, model PT-D400AD with AC adapter by Brother.

    a. Supply ½ inch laminated, adhesive back TZ Series tape cartridges.

    b. Eight (8) each of the following shall be furnished:

        1) black on white,

        2) red on white,

        3) white on black.

22. One (1) adjustable, heavy-duty three hole punch, by Master, order no. MATMP40 (Huntington Business Products or equal).

23. One (1) 40 sheet capacity heavy-duty two hole punch, by Master, order no. MATMP250 or equal. (Huntington Business Products)

24. One electric (AC) pencil sharpener.

25. Three (3) rechargeable flashlights, Maglight® Magcharger model.

26. Bottled water cooler with hot water that shall remain the property of the Contractor.

27. Refrigerator that shall remain the property of the Contractor. Provide 10 cu.ft. unit with separate freezer section..

28. K-cup style coffee maker that shall remain the property of the Owner.

29. One 1200 watt microwave with turntable.

30. One (1) 3’x 5’ cork bulletin board with wall mounting hardware.

31. One (1) 3'x 5' white board with wall mounting hardware and dry erase marker set (Four (4) colors).

32. Two (2) 3 foot x 6 foot metal book shelves

33. Filing Cabinets - Provide three - four (4) drawer, legal size, fireproof filing cabinets with lock and keys.

    a. Cabinets shall be Global Business Furniture., or equal.

    b. Provide with legal size hangers and with 60 legal size-hanging folders all the same color.

34. Two (2) Boot brushes, mounted at exterior entrance staircases

35. One (1) Mud Mats, one at each office doorway

36. Three (3) clipboards

37. Five (5) coat hooks or coat rack

38. Three (3) Surge protection power strips, five receptacles minimum each

39. Two (2) chair mats, one for each desk area

40. One (1) 12 inch diameter wall clock, battery operated

41. Two (2) battery back-up units for desk top computer system: CyberPower Intelligent LCD Battery Backup, 825VA/450 Watts

42. Five (5) extension cords, minimum three plug each, three prong type

F. Cellular Service – Provide one (1) mobile telephone with unlimited calling and text messaging services until the date of substantial completion and submission of Record Drawings. Provide Apple model iPhone 8 cell phone with holster, protective case, station charger, and car charger or latest comparable model.

G. Janitorial Services - Provide janitorial services one (1) time each week. Thoroughly clean and dust entire office and leave in a condition satisfactory to Engineer. Provide this service through final completion.

H. Bottled Water Service – Provide bottled water service on a continuous basis through final completion.

I. Coffee Service – Provide coffee service including cups, stirrers, sugar, sugar substitute and non-dairy creamer on a continuous basis through final completion.

J. Supplies - Provide on a continual basis through substantial completion and release of retainage, as required: Paper for computer printer, copier and calculator and all required supplies for facsimile and copier, two (2) desk staplers and staples, large and small paper clips, two (2) tape dispensers and tape rolls, two (2) desk scissors pairs and necessary replacement batteries for all equipment supplied.

K. Ownership of Furnishings - All items to be provided by Contractor under this paragraph shall remain the property of the Owner unless otherwise stated.

L. Phone and Internet Access Service - The General Contractor shall also pay for monthly phone and internet access fees at a cost not to exceed $60.00 per month for the length of the contract up to the date of final completion.

1. This cost shall be included in the price as bid and shall be billed directly to the General Contractor.

2. The service provider shall be selected by the Engineer. The General Contractor shall arrange for the service.

3. Internet access will be used by the Engineer and the Owner to send email to manufacturers, vendors, Engineer's home office, the Contractor's home office, other prime Contractors, regulatory agencies and the like.

4. Cable high speed internet service shall be provided if available, the monthly service charge will be paid by the Contractor.

5. The Contractor may use this service at the discretion of the Engineer. Only project related transmissions will be allowed.

6. The Contractor may elect to combine the cable internet service with the required telephone service.

M. All items specified herein are subject to the approval of the Engineer.

N. Equipment shall be delivered to the site and turned over to the Engineer via a type written transmittal form.

O. All equipment that is to remain the property of the Contractor shall be new.

1. Equipment that is to remain the property of the Owner shall also be new and be provided in it's factory packaging, unopened until delivered to the Owner (Engineer).

2. Maintenance of all supplied equipment shall be the Contractor's responsibility up to substantial completion.

P. All items shall be delivered prior to the first application for payment, but no later than the day the Engineer's Trailer is delivered.

2.05 - TELEPHONE SERVICE

A. Provide on-site telephone line and service, answering machine, and fax machine in Contractor's field office.

2.06 - REMOVALS

A. Remove all items provided under this Section except as otherwise specified.

PART 3 - EXECUTION

3.01 - REMOVAL OF UTILITIES, FACILITIES AND CONTROLS

A. Remove temporary above grade or buried utilities, equipment, facilities and materials.

B. Remove underground installations to a minimum depth of 2 feet or as specified elsewhere.

C. Regrade area to existing slope and elevation and restore the surface to its existing condition or to the condition shown on the Contract Drawings.

D. The General Contractor shall inventory all equipment that has been turned back to the Contractor prior to agreeing to final payment.

E. All equipment and furnishings that require assembly shall be assembled for the Owner's/Engineer's use by the Contractor.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Control of environmental pollution and damage that the Contractor must consider for air, water, and land resources in preparing a bid and while constructing the project. This Section includes management of site aesthetics, noise, solid and liquid waste and wastewater, and other pollutants that may be generated by the Contractor.

B. Include all costs associated with environmental protection as specified herein and as specified in other Sections of these specifications in the total price bid.

C. General Contractor shall provide and install erosion control measures as detailed on the contract plans. All Contractors shall abide by the intent of this section to prevent environmental pollution and damage through the course of their work.

1.02 – DEFINITIONS

A. Environmental pollution and damage is defined as the presence of chemical, physical, or biological elements or agents which:

1. Adversely effect human health or welfare,

2. Unfavorably alter ecological balances of importance to human life,

3. Impact wetlands,

4. Effect other species of importance to man, or;

5. Degrade the utility of the environment for aesthetic, cultural, and historical purposes.

B. Definitions of Pollutants:

1. Sediment: Soil and other debris that has been eroded and transported by runoff water.

2. Solid Waste: Rubbish, debris, garbage, and other discarded solid materials resulting from industrial, commercial, and agricultural operations and from community activities.

3. Rubbish: Combustible and noncombustible wastes such as paper, boxes, glass and crockery, metal and lumber scrap, tin cans, and bones.

4. Debris: Combustible and noncombustible wastes, such as leaves, tree trimmings, ashes, and waste materials resulting from construction or maintenance and repair work.

5. Chemical Waste: Petroleum products, bituminous materials, salts, acids, alkalies, herbicides, pesticides, organic chemicals, and inorganic wastes.

C. Sanitary Wastes:

1. Sewage: Domestic sanitary sewage and human and animal waste.

2. Garbage: Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

1.03 - SUBMITTALS

A. Submit the following under provisions of Section 013300:

1. Environmental Protection Plan / Erosion Control Plan: After the Contract is awarded and prior to the commencement of the work, meet with the Engineer to discuss the proposed Environmental Protection Plan and to develop mutual understanding relative to details of environmental protection. Not more than twenty (20) days after the meeting, prepare and submit to the Engineer for approval, a written and/or graphic Environmental Protection Plan including, but not limited to, the following:

2. Methods for protection of features to be preserved within authorized work areas including trees, shrubs, vines, grasses, ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, and archeological and cultural resources.

3. Permits, licenses, and the location of the solid waste disposal area(s).

4. Drawings showing locations of any proposed temporary excavations or embankments for haul roads, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials.

B. Prepare an Erosion Control Plan describing and showing methods for erosion control that shall be employed by the Contractor to protect adjoining wetlands.

C. Prepare a Work Area Plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan shall include measures for marking the limits of use areas. This plan may be incorporated within the Erosion Control Plan.

D. Approval of the Contractor's Environmental Protection Plan / Erosion Control Plan will not relieve the Contractor of responsibility for adequate and continued control of pollutants and other environmental protection measures.

PART 2 – PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 - PROTECTION OF ENVIRONMENTAL RESOURCES

A. Protect environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire period of this Contract. Confine activities to areas defined by the Contract Documents.

B. Protection of Land Resources: Prior to construction, identify all land resources to be preserved within the work area. Do not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, top soil, and land forms without permission from the Engineer. Do not fasten or attach ropes, cables, or guys to trees for anchorage unless specifically authorized, or where special emergency use is permitted.

C. Work Area Limits: Prior to any construction, mark the areas that require work to be performed under this Contract. Mark or fence isolated areas within the general work area that are to be saved and protected. Protect monuments, works of art, and markers before construction operations begin. Convey to all personnel the purpose of marking and protecting all necessary objects.

D. Protection of Landscape: Protect trees, shrubs, vines, grasses, land forms, and other landscape features shown on the drawings to be preserved by marking, fencing, or using any other approved techniques.

1. Box and protect from damage existing trees and shrubs to remain on the construction site.

2. Immediately repair all damage to existing trees and shrubs by trimming, cleaning, and painting with antiseptic tree paint.

3. Do not store building materials or perform construction activities closer to existing trees or shrubs than the farthest extension of their limbs.

E. Reduction of Exposure of Unprotected Erodible Soils: Plan and conduct earthwork to minimize the duration of exposure of unprotected soils. Clear areas in reasonably sized increments only as needed to use. Form earthwork to final grade as shown. Immediately protect side slopes and back slopes upon completion of rough grading.

1. Temporary Protection of Disturbed Areas: Construct diversion ditches and berms to retard and divert runoff from the construction site to protected wetlands areas as defined in the Clean Water Act and federal, state and local regulations

2. Erosion and Sedimentation Control Devices:

   a. Construct or install all temporary and permanent erosion and sedimentation control features as shown or specified in the Contract Documents and as required by the Owner pursuant to direction of the regulatory authority.

   b. Maintain temporary erosion and sediment control measures such as berms, dikes, drains, hay bales, erosion control fencing, sedimentation basins, grassing, and mulching, until permanent drainage and erosion control facilities are completed and operative.

3. Manage borrow areas on and off Owner property to minimize erosion and to prevent sediment from entering nearby property, watercourses and local streets.

4. Manage and control spoil areas on and off Owner property to limit spoil to areas shown on the Environmental Protection Plan and prevent erosion of soil or sediment from entering nearby property, watercourses or streets.

5. Protect adjacent areas from degradation by temporary excavations and embankments.

F. Handle and dispose of solid wastes in such a manner that will prevent contamination of the environment.

1. Place solid wastes (excluding clearing debris) in containers that are emptied on a regular schedule.

2. Transport all solid waste off Owners' property and dispose of waste in compliance with Federal, State, and local requirements.

3. Store chemical waste away from the work areas in corrosion resistant containers and dispose of waste in accordance with Federal, State, and local regulations.

4. Handle discarded materials other than those included in the solid waste category as directed by the Engineer.

G. Protection of Water Resources: Keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters and sewer systems. Implement

management techniques to control water pollution by the listed construction activities that are included in this Contract.

H. Washing and Curing Water: Do not allow wastewater directly derived from construction activities to enter water areas. Collect and place wastewater in retention ponds allowing the suspended material to settle, the pollutants to separate, or the water to evaporate.

I. Control movement of materials and equipment during construction to prevent violation of water pollution control standards of the Federal, State, or local government.

J. Monitor water areas affected by construction.

K. Protection of Fish and Wildlife Resources:

1. Keep construction activities under surveillance, management, and control to minimize interference with, disturbance of, or damage to fish and wildlife.

L. Protection of Air Resources: Keep construction activities under surveillance, management, and control to minimize pollution of air resources.

1. Burning is not permitted on the job site. Keep activities, equipment, processes, and work operated or performed, in strict accordance with the State and Federal emission and performance laws and standards.

2. Maintain ambient air quality standards set by the Environmental Protection Agency and State, for those construction operations and activities specified.

M. Particulates: Control dust particles, aerosols, and gaseous by-products from all construction activities, processing, and preparation of materials (such as from asphaltic batch plants) at all times, including weekends, holidays, and hours when work is not in progress.

N. Particulates Control: Maintain all excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and all other work areas within or outside the project boundaries free from particulates which would cause a hazard or a nuisance. Sprinkle, chemical treatment of an approved type, light bituminous treatment, baghouse, scrubbers, electrostatic precipitators, or other methods are permitted to control particulates in the work area.

O. Hydrocarbons and Carbon Monoxide: Control monoxide emissions from equipment to Federal and State allowable limits.

P. Odors: Control odors of construction activities and prevent obnoxious odors from occurring.

Q. Reduction of Noise: Minimize noise using every action possible. Perform noise-producing work in less sensitive hours of the day or week as directed by the Engineer. Maintain noise-produced work at or below the decibel levels and within the time periods specified in accordance with OSHA and local ordinances, whichever is more restrictive.

1. Perform construction activities involving repetitive, high-level impact noise only between 8:00 a.m. and 5:00 p.m unless otherwise permitted by local ordinance or by the Engineer.

2. Repetitive impact noise on the property shall not exceed the following dBA limitations:

Noise Level (dBA)	Maximum Exposure Period per 24 hours
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 min
100	15 min
<140	NO EXPOSURE

3. Provide sound-deadening devices on equipment and take noise abatement measures that are necessary to comply with the requirements of this Contract, consisting of, but not limited to, the following:

a. Use shields or other physical barriers to restrict noise transmission.

b. Provide soundproof housings or enclosures for noise-producing machinery.

c. Use efficient silencers on equipment air intakes.

d. Use and maintain efficient intake and exhaust mufflers on internal combustion engines.

e. Line hoppers and storage bins with sound deadening material.

f. Conduct truck loading, unloading, and hauling operations so that noise is kept to a minimum.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. This Section includes the general requirements for products that are to be furnished, installed, or otherwise incorporated into the project.

1.02 - QUALITY ASSURANCE APPLIES TO ALL PRODUCTS

A. In addition to the Contractor's warrantees and guarantees on materials and equipment required under the General Conditions of the Contract and the Technical Specifications contained hereinafter, the Contractor shall also be responsible for all materials, equipment, and products that have or is planned to be incorporated into the work.

1. The Contractor shall be responsible for the finished work and that it accurately and completely complies with these Contract Documents.

2. The Contractor shall be responsible for work performed by subcontractors, equipment suppliers, and material vendors.

3. The Contractor shall be satisfied as to the product's performance before it is ordered for installation. At the Contractor's option, he/she shall have tested each product to determine compliance with these specifications.

B. The Engineer may check all or any portion of the work and the Contractor shall afford all necessary assistance to the Engineer/Architect in carrying out such checks.

1. Such checking by the Engineer/Architect shall not relieve the Contractor of any responsibilities for the accuracy or completeness of the work.

2. Such checking is a courtesy service being provided by the Owner and does not relieve the Contractor of his/her responsibilities under this Construction Contract.

C. If witnessed shop tests or inspections are required at the point of manufacture, the Contractor shall keep the Engineer/Architect advised as to the progress of the work to allow inspection at the proper time and place. Provide at least two (2) weeks advance notice before scheduled shop tests.

D. Should a dispute arise as to the quality of workmanship, equipment or material performance, then the final decision regarding acceptability with these Contract Documents shall be that of the Owner.

E. At the request of the Engineer/Architect, the Contractor shall promptly provide the services of a competent representative of the manufacturer at the project site, fully equipped and prepared to answer questions, perform tests, make adjustments and to prove compliance with the Contract Documents free of all additional charges. Proof of compliance shall be the responsibility of the Contractor, and such special visits to the project site by the manufacturer shall not be eligible under any cash allowances or stipulated man-hours necessary to startup the system and/or train the Owner as may be specified in the Technical Specifications.

1.03 - QUALITY ASSURANCE - EQUIPMENT

A. Erect and install products under the supervision of a competent and experienced superintendent. The method of installation, including anchorage, clearances, and tolerances for rotating assemblies, methods of support for equipment and adjacent piping, shall be as recommended by the equipment manufacturer unless detailed on the Drawings or specified.

B. All material furnished shall be new, and guaranteed free from defects in workmanship, installation, and design.

C. Design and fabricate equipment in conformance with ANSI, ASTM, ASME, ASHRAE, IEEE, NEC and NEMA Standards.

1. Equipment shall withstand the stresses that may occur during fabrication, testing, transportation, installation and conditions of operation.

2. Pumps shall conform to the requirements of the Hydraulic Institute.

3. Equipment shall comply with the latest OSHA regulations and the ANSI Safety Standards.

D. Equipment shall be products of manufacturers who produce evidence of their ability to promptly furnish any and all interchangeable replacement parts as may be needed at any time within the expected life of the equipment.

E. Manufacturers shall also have readily available access to suitable and accurate testing facilities for performing the required shop tests.

PART 2 - PRODUCTS

2.01 - MATERIALS AND EQUIPMENT

A. Equipment shall have been in successful regular operation under comparable conditions for a period of at least five (5) years.

1. This time requirement does not apply when the manufacturer posts an Owner/Engineer acceptable Performance Bond or Letter of Credit for the duration of the time period that will guarantee replacement of the equipment in the event of failure.

2. The bond shall be in a form that is acceptable to the Owner's legal council.

B. The Owner reserves the right to reject any material or equipment manufacturer who, although he appears to be qualified and meets the technical requirements, does not provide satisfactory evidence indicating adequate and prompt post-installation repair and maintenance service, as required to suit the operational requirements of the Owner.

C. Whenever it is required that the Contractor furnish materials or manufactured articles or shall do work for which no detailed specifications are set forth, the materials or manufactured articles shall be of the best grade in quality and workmanship obtainable on the market from firms of established good reputation, or, if not ordinarily carried in stock, shall conform to the usual standards for first-class materials or articles of the kind required.

D. Perform work in full conformity and harmony with the intent to secure the best standard of construction and equipment of the work as a whole or in part.

E. Items of any one type of material or equipment shall be the product of a single manufacturer.

1. For ease of the Owner in maintaining and obtaining service for equipment and for obtaining spare parts from as few places as possible, to the maximum extent possible, use equipment of a single manufacturer.

2. The Engineer reserves the right to reject any equipment from various manufacturers if suitable equipment can be secured from fewer manufacturers and to require that source of materials be unified to the maximum extent possible.

F. Substitute equipment shall not be fabricated nor installed until after written decision to accept request is received from the Engineer/Architect.

2.02 – CONTROL PANELS, MCC'S AND SWITCHBOARDS

A. All control panels, motor control centers, and switchboards shall be fabricated with pilot lights, selector switches, PLC, graphics display panels, elapsed time meters and other components that shall match.

1. This does not require that all components be one manufacturer, but does require that the like components be of the same manufacturer.

2. The Contractor shall coordinate the shop drawing submittals to indicate that all components have been selected on this basis.

3. This requires the Contractor to advise each control panel supplier that product options are limited in this regard.

B. Replacement of unlike products delivered to the job site shall be the responsibility of the Contractor.

C. All costs associated with the replacement shall be borne by the Contractor.

2.05 – PROGRAMMING SOFTWARE REQUIREMENTS

A. The Contractor shall require that ALL equipment suppliers that are providing equipment with microprocessor/PLC control systems provide a copy of the microprocessor/PLC programming software on CD/DVD for the Owner's use.

1. Minimum requirements:

a. Suitable for Microsoft windows based operating system laptop use.

b. Provide CD/DVD with write protected version of final accepted program after system start up and O & M training.

c. Provide CD/DVD with copy of programming software for the purpose of modifying the existing control logic as desired by the Owner. Provide software use manual in PDF format along with programming software.

d. Cable(s) required to connect laptop computer to microprocessor/PLC."

B. All control panels with UPS units shall provide programming as necessary to detect the UPS as the power source during a power failure and reinitiate/acquire all motor start signals from running motors when emergency power or normal power is activated. Adjustable loss of signal time delays may be utilized to cover the power transfer time only while the UPS is detected as the sole power source.

C. Manufacturer to verify that all I/O for the system shall not be protected via a single common fuse, such that one fuse failure would shut down the entire system operation.

D. Control panel supplier/manufacturer shall coordinate the programming of the PLC with the System Integrgator/SCADA programmer to provide access to the all system data residing therein as well

as access to adjust any operator adjustable set points via the SCADA system, as the Owner desires.

E. Control panels shall be provided with an Ethernet switch suitable for both copper and fiber optic connection for use by Owner's SCADA integration supplier. Fiber optic connection shall be SC type.

2.03 - NAMEPLATES

A. Each unit of equipment shall have the manufacturer's name or trademark on a stainless steel nameplate securely affixed in a conspicuous place.

B. The manufacturer's name or trademark may be cast integrally with stamp, or otherwise permanently marked upon the item of equipment.

C. Such other information as the manufacturer may consider necessary for complete identification shall be shown on the nameplate.

2.04 - FABRICATIONS

A. Insofar as possible, shop prefabricate all items complete and ready for installation.

B. Accurately fabricate all items to the details shown on the Drawings and on the shop drawings found in compliance with the Contract Documents.

PART 3 - EXECUTION

3.01 - PREPARATION

A. Prior to work under any Section, carefully inspect the work of all other prime trades and verify that all such work is in conformance with the Contract Documents and is complete to the point where the work under that Section may properly commence.

B. Avoid the need to remove and replace work and to avoid unnecessary cutting and patching.

C. Inspect all surfaces to be sure that they have been properly prepared before applying new work to such surfaces.

D. Verify that all work can be installed in strict accordance with the drawings and the approved shop drawings. Immediately report discrepancies to Engineer/Architect.

E. Do not proceed with the work under any Section until these conditions are obtained.

3.02 - INSTALLATION

A. Furnish and install materials and equipment in accordance with the instructions of the applicable manufacturer, fabricator or processors, except as otherwise provided in the Contract Documents.

B. All work shall be done in a workmanlike manner and set to proper lines and grades. The work shall be square, plumb and/or level as the case may be.

C. Where performance criteria are specified, do all work necessary to attain the required end results.

3.03 - FIELD QUALITY CONTROL

A. Neither observations by Engineer/Architect nor inspections, tests or approvals by other persons shall relieve the Contractor from his obligations to perform the work in accordance with the requirements of the Contract Documents.

B. If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any work to specifically be inspected, tested or approved by some public body, the Contractor shall assume full responsibility therefore, pay all costs in connection therewith, and furnish the Engineer/Architect with the required certificates of inspection, testing or approval.

C. The Owner reserves the right to independently perform laboratory tests on random samples of material or performance tests on equipment delivered to the site.

1. These tests, if made, will be conducted in accordance with the appropriate referenced standards or specification requirements.

2. The entire shipment represented by a given sample, samples or piece of equipment may be rejected on the basis of the failure of samples or pieces of equipment to meet specified test requirements.

3. All rejected materials or equipment shall be removed from the site, whether stored or installed in the work, and the required replacements shall be made, all at no additional cost to Owner.

3.04 - ADJUST AND CLEAN

A. Upon the completion of installations, and as a condition of its acceptance, visually inspect all work, adjust all components for proper alignment and touch-up abrasions and scratches to make them completely invisible.

B. Thoroughly examine all materials and equipment with protective or decorative finishes for defects and damage prior to being covered.

1. In the case of buried items of work, restore protective surface covers so as to conform to the Contract Documents prior to being backfilled, buried or embedded, as the case may be.

2. In the case of exposed items of work, for which a decorative finish is required, all scratches, discoloration's, unmatched colors, disfigurations and damages shall be repaired and touched-up so as to provide a neat, clean finish, and be uniform in color.

3.05 - UNCOVERING WORK

A. Unless otherwise specified or directed by Engineer/Architect, no work shall be covered until it has been observed, tested, photographed, measured, and authorized to be covered by Engineer.

B. Tie distances to above ground physical structures as reference points to all underground utilities, conduits, pits, manholes, valves, and pipelines shall be obtained by the Contractor prior to covering the work. Immediately comply with the Engineer/Architect's direction to uncover the work if tie distances were not obtained.

C. If any work has been covered with Engineer/Architect's consent and Engineer/Architect considers it necessary or advisable that covered work be observed or tested, the Contractor, at Engineer's request, shall uncover, expose or otherwise make available for observation, or testing as Engineer may require, that portion of the work in question, furnishing all necessary labor, material and equipment.

1. If it is found that such work is defective, the Contractor shall bear all the expenses of such uncovering, exposure, observation, and testing of satisfactory reconstruction, including compensation for additional engineering services and an appropriate deductive change order shall be issued.

2. If, however, such work is not found to be defective, the Contractor shall be allowed an increase in the contract price or an extension of the contract time, or both, directly attributable to such uncovering, exposure, observation, testing and reconstruction if he makes a claim therefore as provided in the General Conditions.

3.06 - DEFECTIVE WORK

A. The repair, removal, replacement and correction of defective work is a part of this Contract and shall be promptly performed in accordance with the requirements set forth in the General

Conditions or other portions of the Contract Documents. All costs in connection with the correction of defective work shall be borne by the Contractor.

B. Products that fail to maintain the performance or other salient requirements of the Contract Documents, shows undue wear, or other deleterious effects during the maintenance period, shall be considered defective.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. The Section includes the transportation, handling, storage and protection of products that are to be incorporated into the work.

B. The procedures for turning equipment over to the Owner for installation by others is also included herein.

1.02 - GENERAL

A. Items shall be delivered as complete assemblies direct from the manufacturer with all internal wiring, piping, valving, and control devices intact except where partial disassembly is required by transportation regulations, protection of components, or where physical constraints may exist or be created for the setting of the item.

B. Coordinate the disassembly and reassembly requirements with the manufacturer. Determine the need and extent of reassembly prior to bid.

1. All labor, material and equipment costs associated with the disassembly and reassembly of the product shall be included in the Contract Price.

2. Where reassembly of equipment is necessary, then the manufacturer shall provide reassembly instruction at the project site.

3. A technician shall be present during the entire reassembly procedure and the manufacturer shall certify, in writing, that the unit was reassembled properly in accordance with instructions provided by the manufacturer and that all as-specified warranties remain in effect.

4. The manufacturer’s reassembly inspection time shall be in addition to the field service time specified and shall be included in the Contract Price. This time shall not be eligible for payment under any cash allowance item.

C. In the case where equipment is to be installed by others, then the supplying contractor shall be responsible for it’s reassembly. If reassembly is necessary and the unit(s) are to be set inside an enclosure or building, reassemble the equipment inside said enclosure. The equipment once reassembled shall be turned over to the installing contractor as specified below.

1.03 - PACKING

A. Transport products in containers, crates, boxes or similar means such that the products are protected against damage that may occur during transportation.

B. All parts shall be packaged separately or in container where parts of similar systems are grouped.

C. Part numbers shall be indicated on the individual part. Use indelible ink to mark part numbers.

D. All equipment shipments shall be included with a parts list showing a description (name) of the part and the manufacturer's part number.

1. The parts list shall be shipped in a plastic zippered envelope with the words "Parts List" lettered on it in indelible ink.

2. The parts list shall be placed inside the shipping container so that it is on the top of the contents.

E. Equipment shall be shipped with storage, handling and installation instructions.

1. The Engineer reserves the right to withhold payment for equipment delivered to the site until such time as the storage, handling and installation instructions are supplied by the manufacturer.

2. In the case where operation and maintenance manuals have been provided by the manufacturer, which includes the installation instructions, then the installation instructions shall also be included with the equipment shipment.

F. All control panels shall be wood crated.

1. All sides of the control panel shall be covered with 3/4" plywood.

2. The control panel number or name shall be printed on all sides of the crate in 1' high black lettering.

3. The manufacturer's name, Contractor's name and project name shall also be printed on the front of the crate.

4. All control panels and centers shall be packaged with three (3) copies of the approved wiring diagram inside the control panel enclosure in a separate plan holder attached to the inside door. The words "APPROVED FOR CONSTRUCTION" shall be indicated on each page of the wiring diagram.

G. Delicate instruments and devices, reagents, chemicals, and glassware shall be shipped in packaging normally provided by the manufacturer.

H. The Contractor shall require the manufacturer to be responsible for the proper packing of all products.

1.04 - SHIPPING AND DELIVERY

A. Product deliveries shall be accompanied with a bill of lading indicating the place of origination and the Contractor's purchase order number.

B. Inspect shipments immediately upon delivery, to assure compliance with requirements of the Contract Documents and those products are undamaged.

C. Promptly remove damaged material and unsuitable items from the job site.

D. Provide equipment and personnel to handle products by methods to prevent soiling; disfigurement or damage.

1.05 - STORAGE

A. Store sensitive products and all spare parts in weather tight, climate controlled enclosures in an environment favorable to product.

B. Store and protect products in accordance with the manufacturer's instructions.

C. All other products that are to be installed underground or products such as pipe, valves, and fittings shall be stored outdoors but shall be blocked off the ground and covered with impervious sheet coverings.

D. Store fabricated products above the ground on blocking or skids.

E. Store loose granular materials in well-drained areas on solid surfaces to prevent mixing with foreign matter.

F. Provide adequate ventilation to avoid condensation.

G. In accordance with manufacturer's instructions protect bearings, couplings, shafts, rotating components, and assemblies. Protection of said equipment shall be continuous until the time the equipment is placed into permanent service.

H. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.

I. Do not store volatile liquids in any building on site.

J. Storage of products shall be the responsibility of the supplying contractor. The installing contractor shall take all necessary precautions to protect the equipment being furnished by others.

K. Store with seals and labels intact and legible.

1.06 - EQUIPMENT INSTALLED BY OTHERS

A. All products, except products noted on the Drawings or specified, shall be furnished and installed by the designated Contractor.

1. Only noted or specified products shall be furnished under each Contract for installation by others.

2. If it is not noted on the Drawings or specified, then the product shall be furnished and installed under the designated Contract.

B. The Contractor shall furnish these products to the Owner. These products shall be stored as specified above.

C. The Owner/Engineer will then advise the installing contractor that the product(s) are ready for installation.

1. In the case where the product is stored in a proper enclosure, but not stored inside the building to be constructed under this project, then the installing contractor shall move the product into the building to a location adjacent to the final location shown on the Drawings.

2. In all cases, the installing contractor shall be responsible for moving from storage, uncrating, anchoring, mounting and installing the product as required by the Contract Documents.

D. The Contractor and installing contractor(s) shall be present at the time the equipment is turned over to the Owner. Immediately thereafter, the Owner will turn the product over to the installing contractor for installation.

E. The Owner, Contractor, Engineer/Architect and the installing contractor shall inspect the condition of the product at this time.

1. Any defects in the product will be noted and the Contractor will be advised to make all repairs immediately.

2. The installing contractor shall still be required to install the product if the damage is deemed cosmetic by the Engineer/Architect.

3. The manufacturer's installation instructions or wiring diagram shall be turned over to the installing contractor at this time by the Contractor.

4. Any damage occurring to the product during moving, setting and mounting the unit(s) shall be the responsibility of the installing contractor.

5. The Contractor is advised to take photographs to document the condition prior to it being turned over to the installing contractor.

6. The installing contractor is advised to take photographs to document the condition prior to its acceptance.

F. The supplied unit(s) remain the property of the Contractor until final acceptance of the work.

G. Any damage caused to the unit(s) due to improper installation, workmanship, and non-compliance with the manufacturer's written installation instructions shall be the responsibility of the contractor who caused said damage. The burden of proof shall rest with the supplying Contractor.

H. In the event the Contractor discovers misuse, abuse or improper installation of the unit(s) by the installing contractor, then he shall immediately notify the Engineer/Architect in writing. The Engineer/Architect will investigate the accusations and make a determination. The Engineer's determination shall be binding and agreed to by both parties.

I. If the Engineer's determination substantiates the accusations of the Contractor, then the Contractor shall install the unit(s), the costs for which will be paid for as extra work. All costs associated with the extra work change order, including engineering and attorney fees of the Owner and Contractor will be deducted from money due the installing contractor.

1.07 - PROTECTION OF WORK

A. The Contractor shall protect the installed work. All costs for protection shall be borne by the Contractor. Provide coverings as necessary to protect installed products from damage, from traffic and subsequent construction operations. Remove when no longer needed.

B. Cover and protect equipment from dust, moisture or physical damage. Protect finished floor surfaces prior to allowing equipment or materials to be moved over such surfaces. Maintain finished surfaces clean, unmarred and suitably protected until accepted by the Owner.

C. Additional time required to secure replacements and to make repairs will not be considered by the Engineer/Architect to justify any extension in the Contract Time of Completion. In the event of the damage, promptly make replacement and repairs to the approval of the Engineer at no additional costs.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 – SECTION INCLUDES

A. Cleaning during the progress of the work

B. Cleaning prior to final payment

1.02 - SCHEDULING

A. Sequence, schedule, and coordinate final cleaning work with the final cleaning work to be performed by other prime contractors.

B. Perform final cleaning at least five (5) days before the date set for ceremonies to dedicate the new facility wherein the Owner will provide tours to the general public and/or dignitaries. The site shall be clean, organized, and totally free of construction debris, tools, and equipment.

PART 2 - PRODUCTS

2.01 - MATERIALS

A. Cleaning materials shall be appropriate to the surface and materials being cleaned.

B. Provide pads to protect finished surfaces from cleaning materials.

PART 3 - EXECUTION

3.01 - PREPARATION

A. Post signs to advise building occupants of wet and/or slippery floor conditions during cleaning operations.

3.02 - PROGRESS CLEANING

A. Keep all buildings, enclosures, and confined areas where work is being performed under the Contract free from unattended combustible materials.

B. Remove rust spots as they develop.

3.03 – FINAL CLEANING

A. Remove dust, dirt, grease, stains, paint drips and runs, plastic, labels, tape, glue, rope, rust, and other foreign materials from visible interior and exterior surfaces.

B. Do not move dust from spot to spot. Remove directly from the surface on which it lies by the most effective mean such as appropriately treated dusting cloths or vacuum tools. When doing high cleaning, do not allow dust to fall from high areas onto furniture and equipment below.

C. Dismantle and remove all temporary structures, scaffolding, fencing, and equipment. Remove waste materials, rubbish, lumber, block, tools, machinery, and surplus materials.

D. Perform the following prior to final payment:

1. Broom clean all exterior concrete surfaces and vacuum clean all interior concrete surfaces.

2. Dust and spot clean painted and vinyl covered walls.

3. Clean and polish all unpainted metal on doors such as trim, hardware, kickplates and doorknobs.

4. Vacuum clean carpets and mats.

5. Vacuum clean acoustic ceilings.

6. Repair, patch, and touch-up marred surfaces to specified finish and to match adjacent surfaces.

7. Remove foreign material from brick.

8. Replace all broken and scratched glass and mirrors.

9. Replace all damaged insect screens.

10. Wash and clean interior and exterior window surfaces. All glass shall be clean and free of dirt, grime, streaks and excessive moisture. Wipe drippings and other marks from windowsills, sashes and woodwork. Do not use windowsills in lieu of ladders.

11. Polish bright metal by damp wiping and drying with a suitable cloth. If a polished appearance is not thereby produced, apply appropriate metal polish.

12. Clean and polish all stainless steel surfaces, including control panels supplied under this Contract.

13. Clean furniture and equipment in accordance with manufacturers instructions.

14. Clean all paved roads, lots and drives which were paved as work under this Contract and all existing paved surfaces using a mechanical street cleaner.

15. Repair or repaint damaged pavement markings.

16. Vacuum and clean with a damp cloth light fixtures, including glass and plastic lenses, ceiling and wall mounted lights, cover panels, side panels, louvers, fixture frames and lamps.

17. Clean supply vents and exhaust grilles. Clean gutters and downspouts.

18. Remove all rust spots and stains from new and pre-existing concrete, painted surfaces, and all other surfaces.

19. Clean and polish all new toilet facilities constructed under this project.

20. Clean and disinfect all pre-existing toilet facilities that were entered upon and used by the Contractor during the project.

21. Replace damaged existing toilet fixtures, such as sinks, toilet bowls, urinals, and mirrors, with in-kind units if so directed by the Engineer.

22. Wash all existing floors that were in any way impacted by the construction operations.

23. Rake clean landscaped surfaces. Final mow all areas grassed and sodded during the work.

24. Inspect interior and exterior surfaces, and all work areas, to verify that the entire work is clean and ready for use by the Owner. The project will not be considered substantially complete until all final cleaning has been performed.

25. Polish all new handrail installed as work of this contract with a commercially available aluminum cleaner recommended by the railing manufacturer.

26. Clean dirt that has accumulated between grating and grating angles/supports.

27. Vacuum the inside of all control panels provided under this Contract after the panel has been wired.

28. Pressure wash curbs, walks and concrete platforms on new and existing process tankage.

29. Fill in all holes in concrete that remain after temporary handrail is removed. Non-shrink grout shall be used.

30. Thoroughly clean all pits, galleries, manholes, pipes, channels, tanks, wells and all structures entered upon.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Work of this Section includes the following:

1. Starting systems
2. Testing, adjusting, and balancing
3. Updating of manufacturer's operations and maintenance manuals and wiring diagrams

B. Work of this Section also includes stipulated man-hours that shall be provided by the **Prime Electrical Construction Contractor** for startup participation of equipment and systems.

1.02 - STARTING SYSTEMS

A. Each Contractor shall coordinate, schedule, and sequence the start-up of various equipment and systems.

B. Where the start-up of a system or piece of equipment is dependent upon the start-up of other system(s) or equipment, then the Contractor shall schedule and sequence the start-ups to coincide.

C. Notify the Engineer/Architect at least 14 calendar days prior to the start-up of each item or system so that he can schedule the startup with the Owner, utilities, and other Prime Contractors.

D. Verify that each piece of equipment or system has been checked for proper:

1. lubrication,
2. drive rotation,
3. belt tension,
4. motor starter heater size,
5. fuse size,
6. water pressures,
7. terminal connections,
8. control sequence

9. For conditions which may cause damage or delay the start-up procedure.

E. Verify that the equipment has been installed in accordance with the manufacturer's requirements.

F. Complete all pre-startup checklists that may be required by the system vendor.

1. In the event that start-up activities are delayed as a result of the Contractor's failure to properly check the completed installation and a manufacturer's representative is on the job site waiting for corrections to be made, then the Engineer may, at his/her sole discretion, postpone start-up until such time as the corrections have been made without any extra costs.

2. The Owner may deduct from money due the Contractor the excess cost of engineering associated with having the Engineer present during the start-up.

3. The deduction shall be equal to the engineer's effective billing rate times the total number of hours delayed during the start-up activities.

G. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

H. Verify that wiring and support components for equipment are complete and tested.

I. Execute start-up under supervision of applicable Contractor's personnel in accordance with manufacturer's instructions.

J. The Contractor shall have the job site superintendent present during all start-up activities.

K. Provide manufacturer's authorized technician at the site when specified and in accordance with the requirements contained in Section 014500 - Quality Control.

L. Submit manufacturer's start-up reports (MSR's) in accordance with Section 013300.

1.03 - STIPULATED STARTUP PARTICIPATION FOR PRIME ELECTRICAL CONSTRUCTION CONTRACTOR

A. The **Prime Electrical Construction Contractor** shall provide the services of the job site foreman or superintendent who shall participate in the startup of equipment or systems that were furnished by others so as to achieve proper and sustained service.

B. The **Prime Electrical Construction Contractor** shall include in the Contract price **ONE HUNDRED SIXTY (160)** man-hours of participation service exclusively dedicated for providing startup services for equipment furnished by other Contractors.

1. The Owner reserves the right to receive a credit for each unused hour at the prevailing wage in effect at the time, said amount not being less than **SEVENTY FIVE DOLLARS ($75)** per hour in any case.

2. This service shall be provided when directed by the Engineer. Sufficient advance notice will be provided.

C. The **Prime Electrical Construction Contractor** shall provide a separate line item in the Schedule of Values for this service.

1. Provide with each requisition for payment, concerning this stipulated amount, a field report documenting the equipment item or system, date(s) of service, name of Contractor's worker(s), hour(s) worked, brief description of work performed during startup, and the prevailing wage rate paid them.

2. The field report shall be signed by the Engineer's field representative.

D. Requisitions for payment out of this stipulated amount will not be processed without an executed field report unless proof of manhours expended can be proved otherwise.

PART 2 - PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SUBMITTALS

A. Submit the following documents to the Engineer before Substantial Completion:

1. Project Record Documents as specified in Section 017839.

2. Operations and Maintenance Manuals prepared in accordance with Section 017823 and be updated as a result of start-up activities.

3. Manufacturer's Start-up Reports (MSR's) for all equipment and systems where manufacturer field time is specified.

   a. Each MSR shall be signed by the field technician(s) who attended the start-up.

   b. If the manufacturer is taking exception to the installation or if the warranty is voided, he shall provide a statement to that effect and provide reasons and justification to explain the company's position.

4. One binder containing original counterparts of all warranties, guarantees, bonds, or affidavits as specified in the Technical Specification Sections. These documents shall contain the original signatures and be placed in a plastic sheet protector, one document per protector.

5. Spare parts checklist itemizing all spare parts furnished under the Contract summarized by Section.

6. Electrical Underwriter's Certificate secured by the Prime **Electrical Contractor**.

B. Submit the following items to the Engineer with the final application for payment:

1. Final Application for Payment prepared by the Engineer for Contractor's execution showing final amount of Contract including change orders.

2. Maintenance Bond prepared in accordance with the Contract or General Conditions.

3. Utility company signoffs and inspection approvals, if applicable.

4. Federal, state, county, town and local signoffs and inspection approvals, where applicable.

C. All documents shall be complete, signed, dated, and notarized (where applicable) and be subject to the Engineer/Architect's acknowledgment of receipt or approval.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. This Section specifies the requirements for Operations and Maintenance Manuals required to be prepared by system suppliers and equipment manufacturers.

B. The Contractor shall submit Operations and Maintenance Manuals for all equipment.

C. Where the technical specifications call for the submission of manuals, said manuals shall be prepared in accordance with the requirements contained herein. It being understood that manuals shall be submitted for all equipment even if it is not specifically called out in the specifications.

1.02 - MANUAL CONTENTS AND FORMAT

A. All Operations and Maintenance Manuals shall be as specified hereinafter.

B. The binder shall be 8 1/2" x 11", metal hinge, vinyl, large capacity by National or Equal. It shall show the name of the manufacturer or supplier and project name on the spine of the binder.

C. A cover shall be provided showing the names of the Owner, Engineer/Architect, Contractor, and Manufacturer.

1. It shall show the Contractor's order number and manufacturer's project number.

2. The address of the manufacturer, service station telephone number, project title, contract number, and year shall also be shown.

D. Provide tabbed color dividers for each separate product and system.

1. The name of the product shall be typed on the tab.

2. A separate tab shall also be provided for information such as troubleshooting instructions, spare parts list, etc.

E. An index shall be provided in the back of the binder, with a separate tab, providing a quick way for the operator to find key and important topics contained in the manual.

F. A separate listing for all charts, graphs, tables, figures and shop drawings shall be provided directly following the table of contents.

G. Each manual shall contain one (1) copy of all shop drawings deemed in compliance with the Contract Documents by the Engineer submitted for the equipment or system for which the manual is prepared.

1. Only these shop drawings shall be included in the manual.

2. All shop drawings larger than 8 1/2” x 11” shall be folded and placed in a heavy duty, top loading plastic sheet protector with the title of the drawing showing; one (1) drawing per protector page.

H. For systems being furnished with control panels, each manual shall contain a catalog cut for every electrical device installed inside the control panel or motor control center.

I. Where emergency generator(s) are included as work of this Contract, the manufacturer’s standard manual will be allowed if the manual clearly shows the instructions for the particular model of generator. Cross out chapters and paragraphs that do not apply to the Owner’s generator.

J. Where manuals are prepared for treatment systems for water or wastewater, a process chapter, written in plain language for the operators, shall be prepared by the manufacturer providing the following:

1. A general discussion regarding the theory of the process.

2. A specific discussion relating the theory to the project as designed and constructed. Provide capacities, sizes, loading rates, application criteria, design values, and design assumptions.

3. Provide model numbers for equipment comprising the system.

4. Provide figures, tables, and graphs to assist the operator in understanding the operation of the treatment system.

5. Where operator interfaces are provided, provide step-by-step instructions for changing a process control variable such as set points.

a. The instructions shall be numbered and written such as “press”, “hold” “scroll”, etc.

b. Each operator interface instruction sheet shall be laminated and placed in the binder.

c. Another laminated sheet shall be provided and placed inside the control panel.

K. Each manual shall contain the following as a minimum:

1. Table of contents

2. Final version of the warranty statement approved by the Engineer/Architect

3. Nameplate data of each component, year of installation, contract number and specification number

4. Name, address and telephone number of the manufacturer and the manufacturer's local representative(s)

5. Installation instructions

6. Operation instructions including adjustments, the interrelation of components and the control sequence describing break-in, start-up, operation and shutdown

7. Emergency operating instructions and capabilities

8. Maintenance requirements include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair and reassembly instructions; and alignment, adjusting, balancing, and checking instructions

9. Troubleshooting guide and corrective maintenance (repair) procedures for all electrical and mechanical equipment. These guides shall list the most frequent and common problems, together with the symptoms, possible causes of the trouble, and remedies

10. Drawings (pictures or exploded views) which clearly depict and identify each part, suitable for assembly and disassembly of entire system and each component

11. Wiring and control diagrams, if applicable

12. Panelboard circuit directories including electrical service characteristics, if applicable

13. Part list with current prices; ordering information; and recommended quantities of spare parts to be maintained in storage

14. Charts of valve tag numbers, with location and function of each valve, keyed to the process and instrumentation diagram prepared as part of the Contract Documents

15. Name, address, and telephone number of nearest parts supply house and nearest authorized repair service center.

16. List of recommended spare parts and the recommended number of each per unit and per group of units.

L. Submit two (2) copies of a preliminary draft manual at least fourteen (14) calendar days prior to the date set for start-up.

1. The Engineer/Architect will review the manual for content and compliance with these specifications.

2. Written comments will be provided, but the manual will not be returned.

3. One (1) manual will be used at start-up, to record changes that should be made to the final manual.

4. This copy of the manual will be retained on the site until such time as the final, updated manual is provided.

M. Engineer/Owner will select up to ten (10) different operations/procedures from the basic and emergency operations of the equipment that shall be made into individual “Quick Reference Sheets”. Each “Quick Reference Sheet” shall be laminated and provided in a separate binder or section of the O&M manual. Submit draft copies of the “Quick Reference Sheets” for approval by the Engineer before providing the laminated copies with the final O&M manuals.

N. Two (2) weeks after the date the unit was placed into service and the Owner has gained beneficial use, submit five (5) copies of the final updated Operations and Maintenance Manual. Refer to Section 017500 - Starting and Adjusting for requirements related to updating the manual(s).

O. Where installation instructions are not included with the manual, they shall be shipped at least ten (10) days prior to the date the equipment is scheduled for installation.

1.03 - RETAINAGE

A. The Engineer will retain from payment due the Contractor, for failure to submit manuals as specified, an amount equal to 2% of the scheduled value for the equipment or system for which the manual applies. This Contract requirement only applies when a manual is specified to be provided in the Technical Specifications for a particular system or piece of equipment.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. This Section includes:

1. Maintenance of documents
2. Recording of record information
3. Submission of record documents

B. Work of this section also includes the furnishing of underground pipeline documentation to be provided by Contract P and Contract S.

1.02 - PLANS AND SPECIFICATIONS FURNISHED TO THE CONTRACTOR

A. One (1) complete set of Contract Documents (plans, specifications and addenda) will be furnished to the Contractor in electronic PDF format on CD. The Contractor will be required to print out hard copy sets for field and internal use.

B. Hard copy sets of Contract Documents (plans, specifications and addenda) can be furnished to the Contractor at $300 per set, if requested.

1.03 - MAINTENANCE OF DOCUMENTS

A. The Contractor shall maintain at the site one (1) set of the following: drawings, specifications, addenda, change orders, approved shop drawings, test reports, operations and maintenance manuals, and shop drawing log.

B. The Contractor shall make these documents available for use by the Owner, Engineer/Architect, regulatory agencies and other parties designated by the Owner.

C. Provide a drawing rack for storage of plans.

D. Maintain these documents in a clean, dry, legible condition throughout the entire contract period.

1.04 - RECORDING OF RECORD INFORMATION

A. Affix a stamp to each Contract Drawing and Shop Drawing reading as follows: “RECORD DOCUMENT" - “NAME OF PROJECT” - “CONTRACTOR NAME” in 2-inch high printed letters.

B. Keep the record documents current as the work progresses. Record information concurrent with construction progress.

C. The Contractor shall include a lump sum amount in the bid amount for preparation of record drawings as follows: Contract G = $20,000; Contract E = $15,000; Contract P = $10,000; Contract S = $10,000;

1. Stipulated amount will be released when the record drawings have been accepted by the Engineer.

2. Satisfactory evidence shall be provided by the Contractor demonstrating compliance with these specifications and said drawings have been delivered and deemed in compliance with the specifications by the Engineer/Architect.

3. Progress payments will be allowed against the line item in the Schedule of Values only if record documents are considered accurate and up-to-date by the Engineer.

D. Do not permanently conceal any work until required information has been recorded.

1. Legibly mark the Contract Plans to record actual construction, including, but not limited to the following:

2. All as-built work.

3. All approved field changes and conditions.

4. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.

5. Location of underground conduits, boxes, devices. Wire sizes (AWG) and types installed. Number of active and spare wires in each conduit and conduit size (applicable where work involves electrical construction).

6. Tied-down location of all underground process lines and buried valves.

E. Shop Drawings: Maintain as record documents. Legibly mark-up to show changes made due to field conditions encountered during construction.

1.05 - PROJECT RECORD DOCUMENTS

A. Maintain a complete and accurate log of control and survey work as it progresses.

B. The General Contractor shall on completion of major site improvements, prepare a certified survey illustrating dimensions, locations, angles, and elevations of construction, site work and underground facilities installed as work of Contract G.

C. The primary electric service installed by LIPA shall also be located on the record drawings prepared by the Contractor's surveyor.

1.06 - SUBMITTAL OF RECORD DOCUMENTS

A. At Substantial Completion, the Contractor shall deliver one (1) preliminary record set of as-built documents to the Engineer/Architect with all changes conspicuously ballooned or otherwise emphasized.

B. **The work will not be considered substantially complete until such time as the preliminary record documents are delivered and acceptable to the Engineer. Mark this set "Preliminary Record Drawings".**

C. Prior to Final Completion, the Contractor shall conform the preliminary record drawings to the comments made by the Engineer and then provide the Owner a complete set of as-built drawings prints and one electronic copy on CD/DVD of all drawings in PDF format.

D. As-built drawings shall be the same size as the Contract Drawings, with 1/2-inch margins space on three sides and a 2-inch margin on the left side for binding.

E. Each drawing shall bear in the title box the words "FINAL RECORD DRAWINGS" and the name of the Contractor in heavy black lettering 1/2 inch high and be certified as complete and accurate.

F. As a convenience, Engineer will make available to the Contractor mylar sepias or electronic media of the Contract Drawings for the sole purpose of the Contractor preparing as-built drawings.

G. Electronic media made available is without guarantee of compatibility with the Contractor's software or hardware.

1. If the Contractor wishes to take advantage of this offer, the Contractor will be required to execute an indemnification and hold harmless agreement with the Engineer and pay the Engineer/Architect $20.00 per Contract Drawing sheet to cover the cost of providing mylar sepias.

2. Electronic media will be provided free of charge on disc in a zipped format.

3. Payment shall be by check, payable to Holzmacher, McLendon & Murrell, P.C., in advance of picking up the requested materials.

4. Electronic media shall be returned to the Engineer upon acceptance of the as-built drawings by the Owner.

1.07 - RELATED DOCUMENTS

A. Provide certificate of release of liens if requested by the Engineer.

1.08 – UNDERGROUND PIPELINE DOCUMENTATION – ALL CONTRACTS

A. The Contractor shall document the location of all underground pipelines by taking digital photographs of the installed pipelines prior to backfilling. At least 3 digital photographs shall be taken of each pipe section before it has been backfilled.

B. The Contractor shall provide each pipe installation crew with a digital camera capable of a 3 mega-pixel quality picture using Smart Media, Compact Flash Media, or Memory Stick cards as the media within the camera.

C. At the end of each day that pipe has been installed, the crew foreman shall hand deliver to the Resident Engineer the removable media.

1. The Engineer/Architect will then download the photographs onto the Owner's computer and delete the photographs from the media.

2. The media will be returned to the crew foreman within two working days from the date it was delivered.

3. The Contractor shall have at least three (3) 2 GB media cards available for this purpose to be used on a rotating basis.

D. Installed work will not be eligible for payment until documentation is provided.

E. In addition, the underground piping shall be marked with construction grade spray paint before the photos have been taken to indicate the pipelines in the pictures.

1. The Contractor shall assign a separate paint color to each line to be shown in the picture.

2. The paint color, once selected by the Contractor, shall be used for the entire run of piping.

3. The marks shall be large and long enough to be visible in the picture. Where practical, spray paint the name of the contents that will be conveyed in the pipe, e.g. "PRE-EQ AIR", "MBR EFF.".

4. This requirement is necessary so that the pipe lines shown in the pictures can be easily named and referenced at a later date.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. The Section includes the requirements for delivering spare parts specified to be furnished under the provisions of the Contract Documents.

1.02 - QUALITY ASSURANCE

A. Spare parts shall be delivered as complete assemblies direct from the manufacturer such that the part is fully functional and ready to be installed.

1.03 - DELIVERY, STORAGE AND HANDLING OF SPARE PARTS

A. Comply with the requirements of Section 016500 for packing, delivery, storage and handling requirements for all parts delivered to the site of the work.

B. All spare parts required to be furnished under a Section of the Specifications shall be packaged in one separate box, crate or container with the words “SPARE PARTS” lettered on all sides of the container.

C. The equipment name or system name for which the spare parts are being provided shall also be lettered on the container.

D. A separate packing list for the spare parts shall be included in the container.

E. The Contractor shall store all spare parts indoors immediately upon delivery of the spare parts to the site. Spare parts will not be accepted by the Owner/Engineer/Architect if the spare parts have been stored outdoors for more than 8 hours upon delivery to the site.

F. The storage location shall be secure.

1.04 - TURN OVER OF SPARE PARTS

A. Spare parts shall be turned over to the Owner/Engineer approximately two (2) weeks prior to the Engineer/Architect’s preparation of the Final Punch List.

1. Spare parts will not be accepted until this time.

2. The Certificate of Substantial Completion will not be issued until all spare parts are delivered.

B. The following procedure shall be followed:

1. The Contractor shall provide a formal letter of transmittal listing the name or description of the part, part number, model number, manufacturer (or supplier), and system component name and the Section where it was specified to be provided.

2. Two (2) counterparts of the letter shall be provided.

3. The Contractor shall turn each part individually over to the Owner/Engineer/Architect.

4. The Owner/Engineer/Architect will initial next to the part description on each counterpart of the transmittal letter.

5. The initials represent that the part was received.

6. One transmittal counterpart will be returned to the Contractor.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Work of this Section includes the requirements for demonstrating and training of installed systems, equipment, and products.

B. Manufacturer field services and the credit for unused service time is also included herein.

1.02 - MANUFACTURER'S FIELD SERVICES

A. When specified in individual specification sections require field services to be provided, said services shall be provided by qualified, authorized and factory trained representative(s) of the manufacturer (supplier).

B. Field services shall generally consist of:

1. installation supervision,

2. verify terms of the manufacturer's warranty,

3. equipment and system calibration,

4. startup supervision,

5. and operation and maintenance instructions to the Owner's employees.

C. Such services do not include service time to correct a factory fault, correct problems resulting from a factory wiring or control logic error, or errors caused by poor or improper installation by the Contractor.

D. Sale representatives are not acceptable.

E. The time specified to be provided under the specification sections shall be exclusive of travel time to and from the facility or site. For the purposes of this Contract, one (1) day shall be defined as eight (8) hours exclusive of breaks or mealtime.

F. The times specified to be provided by the manufacturer does not relieve the manufacturer from providing sufficient service time to place the equipment or systems into satisfactory operation and to obtain the specified performance. The manufacturer shall provide, as a minimum, the times specified in the Specification Sections.

G. Where manufacturer services are specified for control panel or control center startup, the representative shall be experienced and trained to work on and field rewire such devices.

1. Field representatives for control panel startup shall understand the control sequence specified and, in the case of programmable logic controllers, are able to make revisions to the factory program using handheld programming devices or laptop computers.

2. The time spent by the representative to correct a PLC program shall not be included in the time specified for startup.

3. The Owner will not pay for time spent in the field to correct a PLC programming problem.

H. If for any reason, the specified service days are not used, then the Owner shall receive a credit equal to **$500.00 (FIVE HUNDRED DOLLARS AND ZERO CENTS)** for each unused field service day specified.

I. A change order to the Contract reducing the Contract Price, by the dollar amount equivalent to the unused field service days, will be issued.

J. Submit manufacturers' startup reports (MSR's) in accordance with the requirements contained in Section 013300 - Submittals.

1.03 - SUBMITTALS

A. The Contractor shall prepare a list of all manufacturer specified field time required by the technical specifications. Compile this summary listing and submit it to the Engineer for review in accordance with the requirements contained in Section 013300.

B. Provide manufacturer's field training outline to Engineer for approval.

C. Manufacturer's Startup Reports shall be provided prior to receiving full payment for installation.

1.04 - QUALITY CONTROL

A. The Contractor shall adhere to all instructions provided by the manufacturer's authorized representative.

B. All verbal instructions necessary to satisfy performance of the equipment or the system shall be immediately provided by the Contractor. The manufacturer shall document all verbal orders in writing at a time suitable to the Contractor.

C. All written instructions provided in operation, maintenance, and installation guides and manuals, provided by the manufacturer of such equipment and or system, shall be complied with by the Contractor.

D. The Contractor shall comply with all manufacturer requirements such that written or implied warranties remain in full force during the time period so specified elsewhere in the technical specifications.

E. Should manufacturer's instructions conflict with Contract Documents, request clarification from Engineer before proceeding.

F. Actions and/or non performance by the Contractor that may void manufacturer warranties shall not constitute a release of the specified warranty, and all warranty claims made by the Owner shall be paid for by the Contractor as if the manufacturer’s warranty was still in effect.

1.05 - SCHEDULING - FIELD SERVICES

A. The Contractor shall arrange field service on dates acceptable to the Owner and Engineer.

B. The service visits shall be scheduled at least 2 weeks in advance so that the Owner and Engineer can adequately staff the date.

C. Operator training will not be allowed until such time as the Manufacturer’s Operation and Maintenance Manuals have been supplied and approved by the Engineer.

1. The field service technician shall review the contents of the manual with designated employees of the Owner.

2. Field services will not be deemed provided until the MSR is provided.

1.06 - DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate operation and maintenance of products to Owner's personnel prior to date of Substantial Completion.

B. Utilize manufacturer’s and vendor’s Operation and Maintenance Manuals as basis for instruction. Review contents of the manual with the Owner’s personnel in detail to explain all aspects of operation and maintenance.

C. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of the equipment or of the system.

D. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

E. The Contractor shall arrange to have the manufacturer's Operation and Maintenance Manuals updated with information that has been added during start-up activities.

F. The final manual shall contain the most recent information and reflect all operational and maintenance aspects of the final installed and functioning system or equipment component of the system.

G. Any changes to control panel wiring diagrams or interconnection wiring schematics shall be made and new prints provided as an update to previously approved manuals.

H. Manufacturer field time shall be as specified in individual Sections of the Technical Specifications.

I. For control panels, explain the control sequence, timing structure, and safety precautions when working inside the panel, terminal wiring system, PLC program, if applicable, operator interface(s) and control logic.

J. Explain PLC LED input and output numbering system, if applicable. If control relays are used, explain technique for their replacement.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Asbestos and lead-based paint certification.

B. Moisture control.

1.02 - RELATED SECTIONS

A. Section 014100 – Regulatory Requirements

B. Section 015719 – Environmental Protection

1.03 – ASBESTOS AND LEAD-BASED PAINT CERTIFICATION

A. Contractor shall submit the enclosed “Asbestos and Lead-Based Paint Certification” upon completion of all work.

1.04 – MOISTURE CONTROL

A. The Contractor shall maintain a strict policy and protocol for the control of water infiltration and moisture build-up during the course of the project. The plans and specifications are not intended to depict each and every condition or detail of construction. As the knowledgeable party in the field, the Contractor is in the best position to verify that all construction is completed in a manner which will provide a watertight structure. The Contractor has the sole responsibility for ensuring the watertight integrity of the structure. The Contractor’s contractual obligations include, but are not limited, to the following:

B. Water Infiltration: If the Contractor observes water infiltration (unintended) into a completed building or an ongoing construction site, he must immediately report the condition to the Owner and Engineer/Architect, and shall immediately take steps to investigate the source of the water infiltration, identify the responsible party (person who performed work that resulted in water infiltration) and devise a procedure to promptly eliminate water infiltration into the building.

C. Handling of Water-Damaged Building Materials and Construction:

1. Contractor shall inspect all building materials delivered to the site for pre-existing water damage, as well as existing mold growth.

2. If in-place construction becomes wet, notify the Owner and Engineer/Architect immediately. The Owner and Engineer/Architect will determine whether or not the work shall be removed and replaced, or if the type of material can be permitted to dry.

3. Under no circumstances may new or additional construction be placed over, or otherwise enclose, wet building materials.

D. Visible Mold/Mildew:

1. If the Contractor observes any substance that appears to be mold or other fungal growth and/or an unidentified substance within a completed building or the ongoing construction site, he shall immediately suspend construction operations in the area, and report the condition to the Owner and Engineer/Architect.

2. No person shall be allowed back into the affected area without permission of the Owner.

1.05 – SUBMITTALS

A. Contractor shall submit completed and notarized “Certification of Asbestos and Lead-Based Paint” form.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

CERTIFICATE OF ASBESTOS AND LEAD-BASED PAINT

(New Work)

Client's Name: _____

Project Location: _____

Project Address: _____

Project Name: _____

Project Number: _____

Contract: _____ GC _____ Mechanical _____ Electrical

_____ Plumbing _____ Other (specify) _____

Certification:

This Contractor hereby certifies that no asbestos-containing material and lead-based paint, as defined by applicable federal and state regulations, has been furnished or installed at the referenced project:

Contractor Name: _____

Signature: _____

Address: _____

_____

Telephone: _____ Date Executed: _____

THIS FORM SHALL BE NOTARIZED

END OF SECTION

PART 1 - GENERAL

1.01 - DESCRIPTION

A. This Section covers the requirements for supplying all labor, materials, and equipment necessary to demolish, and/or remove existing facilities at the Calverton Sewage Treatment Plant as specified herein in Part 3 and as shown on the Contract Drawings.

B. Sequence and schedule demolitions and removals as specified in Section 011400 – Work Restrictions.

C. Refer to Section 025129 – High-Pressure Water Cleaning for tank cleaning requirements.

D. All materials and equipment shall remain the property of the Contractor except as listed herein in Part 3 or noted on the Contract Drawings.

E. Scope Notes:

1. All demolition work shall be performed by Contact G and/or Contract E unless otherwise noted.

2. The Electrical Contractor shall perform all electrical disconnections at the circuit breaker(s) or branch protection device(s) and the de-powering of electrical circuits. The actual device shall be removed by the General Contractor.

3. Electrical conduits that require removal to install new work or are designated for removal shall be work of the Electrical Contractor.

4. The removal of exposed conduit and wire shall be work of the Electrical Contractor as specified in Section 260010.

F. The Contractor shall also comply with the requirements contained in the following Sections as it relates to work of this Section:

1. Section 013100 - Project Management and Coordination

2. Section 013300 - Submittals

3. Section 014500 - Quality Control

1.02 - QUALITY ASSURANCE

A. The Contractor shall be responsible to restore existing surfaces as specified in Section 320000.

B. Demolition work shall proceed in an orderly and planned sequence, taking care not to disrupt the operation of the existing facility. Selected equipment removals and restrictions as noted on the plans or as specified in Section 011400 will require careful coordination with all other Contracts and must be conducted in phases with new equipment installations. The Contractor shall make no claim for extra compensation for failure to successfully coordinate all work with the other Contracts.

C. The Contractor shall employ labor on a continuous basis and complete each phase of the demolition work until it has been readied to receive the new work or until it has been demolished. Once work has been started on any one phase, it shall be completed.

D. Demolition shall be performed by persons experienced in this type of work and be directed by a foreman who shall be present during all phases of this operation.

E. Dismantling of equipment shall be performed by mechanics qualified to install equipment of the type being removed. All equipment shall be removed in accordance with the best practice of the trade.

F. All equipment shall be removed with care whether it shall be retained by the Owner or become the property of the Contractor.

G. The Contractor shall obtain the services of cranes and professional riggers as may be required to remove portions of the work, deliver equipment to the Owner, or otherwise comply with the requirements of these specifications.

H. The Contractor shall not stockpile debris. The Contractor shall immediately load debris into a roll off container or dump truck and dispose of it in accordance with all applicable rules and regulations. It shall be immediately hauled off site for disposal upon reaching full capacity. All containers shall be properly tarped or covered to prevent spill.

I. Performance Criteria:

1. Requirements of Structural Work: Do not cut structural work in a manner resulting in a reduction of load-carrying capacity of load/deflection ratio until interior removals and salvage has been completed and the area made safe.

2. Operational and Safety Limitations: Do not cut operational elements and safety-related components in a manner resulting in a reduction of capacities to perform in a manner intended or resulting in decreased safety until ready for demolition.

3. Loading: Do not superimpose loads at any point upon existing structure beyond design capacity including loads attributable to materials, construction equipment, demolition operations and shoring and bracing.

4. Vibration: Do not use means, methods, techniques or procedures which would induce vibration into any element of the structure to remain.

5. Fire: Do not use means, methods, techniques or procedures which would produce any fire hazard unless otherwise approved by the Engineer.

6. Water: Do not use means, methods, techniques or procedures which would produce excessive water run-off, and water pollution.

7. Air Pollution: Do not use means, methods, techniques or procedures which would produce uncontrolled dust, fumes or other damaging air pollution.

1.03 – SUBMITTALS

A. Comply with the requirements contained in Section 013300 - Submittals. The following documents shall be submitted:

1. Demolition plan including demolition schedule, removal sequence, and a detailed outline of dismantling, demolition, and disposal procedures.

2. Project record documents in accordance with Section 017839. Project record documents shall include accurately recorded locations of capped utilities, plugged pipes, and subsurface conditions left in place.

1.04 – PROTECTION OF EXISTING CONSTRUCTION TO REMAIN

A. Provide all labor and materials necessary for the temporary protection of existing construction (floors, roof, and walls) to remain when adjoining new work.

B. Provide temporary construction, constructed of framing and plywood and/or heavy weight poly to protect existing construction and surrounding surfaces from dust, damage by movement of materials and personnel.

C. The contractor is responsible for all damage to existing structures and shall replace or repair all areas of damage.

D. Repair, replace, or rebuild existing construction as required or as directed which has been removed, altered or disrupted to allow for new construction. Existing construction shall be corrected to match adjacent construction, new or existing.

E. Perform cutting of existing concrete and masonry construction with saws and core drills. Do not use jack-hammers or explosives.

F. Provide temporary shoring and bracing of existing construction to allow removal of existing structural elements. Maintain shoring until new structural elements are in place and accepted.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

3.01 – GENERAL

A. The Contractor shall ready the site and adjacent structures and surfaces before beginning any one phase of the demolition work. Inspect the surrounding buildings, tanks, pipes and confirm, with the Engineer, the extent of the work at least five (5) working days prior to starting each phase of the work. Do not remove, dismantle, or take off line any existing pipe, structure or process component without first giving five (5) working days of written notice. Notice may be given verbally at progress meetings if it is within five (5) working days before the scheduled work.

B. Protect existing surfaces not to be demolished as directed by the Engineer or as may be reasonable in consideration of the type of work that will be undertaken. All surfaces damaged as a result of the Contractor's operation shall be immediately repaired or shall be scheduled for repair at the completion of the work as the Engineer may elect.

C. The Contractor shall uncover all buried piping and electrical facilities prior to beginning the actual removal phase for underground pipe. The Contractor shall verify the precise location, function, size, direction of run, and depth of such underground piping. The Contractor shall employ a backhoe with experienced operator and a foreman to direct a crew of at least two laborers to uncover existing buried pipelines on an as needed basis. The entire pipeline or conduit run shall be uncovered before dismantling and removing pipes. The Contractor shall hand dig within two feet of an existing pipeline. The requirements herein are in addition to that specified in Section 312316.

D. The pipe contents shall be completely drained and not be allowed to flow into open excavations.

E. Burning of material is prohibited.

F. The use of explosives is prohibited.

G. The Contractor shall notify all affected utilities before starting demolition. The Contractor shall comply with their requirements and the requirements of 16 NYCRR Part 753. The Contractor shall have the location and termination of all utilities clearly marked.

H. The Contractor shall coordinate the disconnection of all electrical branch circuits, wiring, and equipment prior to any demolition. Electric facilities shall be discontinued in compliance with applicable provisions of the National Electric Code and utility requirements. The Contractor shall verify that the circuit has been de-energized and is safe to be removed.

I. Hardware, such as bolts and nuts for fittings, shall become the property of the Contractor but shall not be reused on this project.

J. Piping and fittings set in concrete piers shall be removed without damaging the pipe or fitting.

K. Pumps attached to concrete piers and foundations using anchor bolts shall be burned off without damaging the pump or motor.

L. All concrete used as fill shall meet the requirements of Section 033000 and be a minimum of 3500 psi.

M. Material used for soil fill shall be obtained from on-site excess material and shall meet the specifications for Type D subsoil as specified in Section 312323.13.

N. Comply with the requirements contained in Section 015719 – Temporary Environmental Controls for use of jackhammers, generators, air compressors, and all other equipment that produces sound exceeding that specified therein.

O. The Contractor shall cease operations immediately if an unsafe condition develops. Do not resume operation until the condition has been corrected. On-site safety shall be the responsibility of the Contractor and all operations shall be performed in accordance with applicable OSHA regulations and guidelines. Scaffolding, safety rails, and trench sheeting shall be employed as required to satisfy OSHA regulations.

P. The Contractor shall remove sewage/sludge/process waste materials from existing structures as follows:

1. Contractor shall be responsible to provide all labor, equipment and materials to perform wastewater bypass pumping, sludge/waste/debris removal and cleaning/disinfection of all

process structures, pipelines and recharge beds for the contracted demolition and process conversion work. This work shall be included in the lump sum bid amount(s).

2. The Owner shall be responsible to empty or pump out existing process systems to the extent shown or noted on the Contract Plans to allow access for the Contractor to perform the contract work.

3. The Contractor shall transfer acceptable sewage and sludge to on-site treatment processes in lieu of hauling off site if the owner approves the sewage for transfer to existing facilities. All unacceptable sewage/sludge/process waste materials shall be removed from the site by the Contractor.

4. The Contractor shall limit the volume of sludge and process waste materials to be hauled off site for disposal by dewatering and pumping out acceptable wastes to on site systems to the greatest extent possible before removal of unacceptable wastes for offsite disposal.

3.02 – PREPARATION

A. Temporary Support: Provide adequate temporary support for work to be cut to prevent failure. Do not endanger other work.

B. Provide adequate protection of other work during selective demolition to prevent damage and provide protection of the work from adverse weather exposure.

3.03 – PIPE REMOVAL

A. Unless otherwise shown, noted or specified elsewhere, only underground pipe that conflicts with work being installed under this contract, shall be removed. Refer to the Demolition Contract Drawings for additional buried pipe removal requirements.

B. Protect plant life, lawns, rock outcropping, and other features remaining as a portion of final landscaping.

C. Comply with the requirements contained in Sections 312316, 312323.13, and 314116.13.

D. Sawcut each pipe a minimum of five (5) feet from either end where it enters or exits an existing structure to be removed or as necessary as shown on the Drawings.

E. Plug all remaining pipe stub penetrations in existing structures that are to remain with Emaco S66 CI by Master Builders or equal to provide a permanent seal.

F. Buried piping that is to be abandoned in place shall be capped at the cut ends with a mechanical joint ductile iron cap. Provide restrained MJ cap if line serves as a pressure line or forcemain.

G. Backfill trenches to match existing grade or new grades as shown on the Drawings.

H. Field measure location of end pipe cap and add location to record drawings

3.04 – INFLUENT PUMP STATION

A. The Contractor shall remove all equipment within the influent pump station as specified below or as shown on the Drawings. Equipment to be removed shall include, but not be limited to, the following: comminutor, static bar screen, control panel, level controls, valves and fittings, dry pit pumps and piping, HVAC equipment and accessories, access stairs and electrical equipment.

B. Drain and clean inside of wet well and install ductile iron caps on suction piping as shown on contract drawings.

3.05 – SETTLING TANK DEMOLITIONS (FOR CONVERSION TO PRE-EQUALIZATION TANKS, PRE-EQUALIZATION PUMP STATION AND EFFLUENT PUMP STATION)

A. The Contractor shall demolish all the equipment and structures within the two (2) settling tanks at the Calverton treatment facilities as shown on the Drawings. The demolition shall include, but not be limited to, the following: slide gates, handrailing, sludge splitter boxes, sludge piping, discharge chutes, sludge collection system and accessories including motor and drive, baffles and airlift piping.

B. Drain and clean inside of tank to accommodate the new work shown on contract drawings.

3.06 – AERATION TANK DEMOLITIONS (FOR CONVERSION TO MBR PROCESS TANKS AND SLUDGE HOLDING TANKS)

A. The Contractor shall remove the equipment within both aeration tanks as specified herein and as shown on the Drawings. The removals shall include, but not be limited to, the following: air piping and airlift systems, froth spray piping and supports, slide gates, weir plates, and diffusers.

3.07 – SLUDGE HOLDING TANK DEMOLITIONS (FOR ABANDONMENT)

A. Drain and clean inside of tank to accommodate the abandonment of this tank.

B. The Contractor shall remove selected equipment within both sludge holding tanks as specified herein and as shown on the Drawings. The removals shall include, but not be limited to, the following: sludge inlet and return piping and sludge splitter box.

3.08 – CONTROL BUILDING REMOVALS

A. The Contractor shall remove the equipment within the control buildings as specified herein and shown on the contract drawings. The Contractor shall remove the existing MCC after it has been de-energized, blower air intake and piping, aeration blowers, generator exhaust, chlorine room equipment and air intake louvers.

B. The Contractor shall remove all other miscellaneous mechanical piping and equipment, along with miscellaneous electrical equipment within the operations building as shown on the Drawings.

C. The Contractor shall remove masonry, windows, louvers and doors within the operations building as shown on the Drawings.

D. The Contractor shall remove the roof of the operations building as shown on the Drawings. Roof to be replaced as shown elsewhere within the Contract Documents.

E. All wall penetrations shall be sealed with non-shrink grout and pipes and fittings shall be capped where indicated on the Drawings.

3.09– CHLORINE CONTACT DISINFECTION AND OUTFALL PIPING

A. The Contractor shall demolish and remove all chlorine contact equipment and decommission outfall piping as specified herein and as shown on the Drawings. This includes, but is not limited to selected piping, and selective demolitions.

3.10 – OTHER REMOVALS

A. Refer to the demolition plan sheets for additional demolition and removal information.

B. Employ only skilled tradesmen to perform selective demolition.

C. Cut work by methods least likely to damage work to the retained and work adjoining.

D. In general, where physical cutting action is required, cut work with sawing and grinding tools, not with hammering and chopping tools. Core drill openings through concrete and masonry work.

E. Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work.

F. Where selective demolition terminates at a surface or finish to remain, completely remove all traces of material selectively demolished, including mortar beds. Provide smooth, even, substrate transition.

3.11 – BACKFILLING AND GRADING

A. All backfilling, filling, compaction, and grading shall be performed in accordance with Division 31 specifications.

B. Place fill in excavation and other voids.

C. Broken concrete and masonry materials shall not be used for backfill. Place fill in layers not exceeding 18 inches and compact each layer.

D. Compact in accordance with the requirements contained in Section 312323.13.

E. Final 18 inches of backfill below topsoil elevations shall be Type D - Subsoil backfill.

F. Rough grade surface to adjacent contours.

G. Rough grade areas to an elevation 4 inches below adjoining existing grades. Fill with topsoil as work of Section 329219.

3.12 – DISPOSITION OF EQUIPMENT TO REMAIN THE PROPERTY OF THE OWNER

A. The Contractor shall deliver the equipment shown on the contract drawings to the Owner:

B. Place items to be retained by the Owner in the designated storage area as directed by the Engineer.

C. The equipment and materials retained by the Owner shall be neatly stored and placed upright and blocked off the ground.

END OF SECTION

PART 1 - GENERAL

1.01 – WORK INCLUDED

A. Formwork, shoring, bracing, and anchorage.

B. Concrete reinforcement and accessories.

C. Cast-in-place concrete.

D. Grout

E. Concrete curing

F. Waterproofing

G. Final concrete finishes

H. Temporary wooden handrailing shall be provided as work of this section as specified in Section 015000.

1.02 - REFERENCES

I. ACI 301 – Specification for Structural Concrete.

J. ACI 304 – Guide For Measuring, Mixing, Transporting, and Placing Concrete.

K. ACI 305 – Hot Weather Concreting.

L. ACI 306 – Cold Weather Concreting.

M. ACI 308 – Guide To Curing Concrete.

N. ACI 318 – Building Code Requirements for Structural Concrete.

O. ACI 350 - Concrete Sanitary Engineering Structures.

P. ANSI/ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcement.

Q. ASTM A615 - Deformed and Plain Billet-Steel for Concrete Reinforcement.

R. ASTM C33 - Concrete Aggregates.

S. ASTM C94 - Ready-Mixed Concrete.

T. ASTM C150 - Portland Cement.

U. ASTM C260 - Air Entraining Admixtures for concrete.

V. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.

W. ASTM C494 - Chemical Admixtures for Concrete.

X. ASTM C618 - Fly Ash and Raw or Calcinated Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.

Y. ASTM D1751 - Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction.

Z. ASTM D2103 - Polyethylene Film and Sheeting.

AA. CRSI 63 – Recommended Practice for Placing Reinforcing Bars.

1.03 - SUBMITTALS

A. The Contractor shall comply with the requirements contained in Section 013300 - Submittals.

B. Product data shall be submitted for all products specified herein.

C. Shop drawings shall be prepared and submitted in accordance with the requirements specified in paragraph 1.07 below.

D. Provide proposed concrete mix design for each type of concrete, as specified in paragraph 1.11, below to be used on the project at least 30 calendar days prior to the first scheduled concrete pour. The Contractor's testing laboratory shall develop concrete mix designs and test all materials and mixes for conformance with these specifications. The costs associated with development of the design mix and testing of samples shall not be paid for out of the stipulated cash allowance and shall be included in the bid price.

E. Furnish the Engineer's field representative with the transit-mix delivery slips.

1.04 - QUALITY CONTROL

A. Comply with the referenced standards specified in paragraph 1.03 above.

B. Perform testing under the provisions of Section 014500 - Quality Control.

C. Laboratory testing costs associated with the work of this Section will be paid for under the contract allowance item. The Contractor shall arrange to have a qualified technician present at the prescribed time.

D. Perform all work in accordance with ACI 301.

E. Fabricate concrete reinforcing in accordance with CRSI 63.

F. Provide field quality control as specified herein this Section.

G. Procure concrete from a single approved central commercial batching plant. To further insure consistency, coloring, finish and quality, all aggregates, cement, water and other ingredients shall each be secured from the same source for the duration of the project.

H. The batching plant and raw materials may be subject to inspections and tests performed by the Engineer.

I. Contractor shall provide an adequately sized, insulated curing box to house concrete test cylinders, at the discretion of the Engineer, for the 24-hour period between concrete pour and sample pick-up by the testing lab. As directed by the Engineer, the Contractor shall cure additional cylinders in the same fashion as the in-place concrete.

J. Curing box shall be located away from the main construction area and shall be blocked up off the ground.

    1. Curing box shall be located away from the main construction area and shall be blocked up off of the ground.

    2. A log sheet shall be provided in a waterproof sheet protector to log in the placement and removal of the concrete test samples by the testing lab.

    3. Minimum information to be logged for each pour date shall include: date of pour, date of pick-up, weather conditions at time of pour, number of cylinders added, number of cylinders removed, location of pour, testing lab field technician name.

K. A log sheet shall be provided in a waterproof sheet protector to log in the placement and removal of the concrete test samples by the testing lab.

L. Minimum information to be logged for each pour date shall include: date of pour, date of pick-up, weather conditions at time of pour, number of cylinders added, number of cylinders removed, location of pour, testing lab field technician name.

1.05 - REGULATORY REQUIREMENTS

A. Conform to ACI 304 and all applicable codes for placement of concrete and related work.

1.06 - TESTS

A. Testing and analysis of concrete shall be performed under the requirements contained in Section 014500 – Quality Control.

B. The testing laboratory shall take cylinders, perform slump, and air entrainment tests in accordance with ACI 301.

1.07 - SHOP DRAWINGS

A. Submit shop drawings of reinforcing steel and formwork under the provisions of Section 013300 - Submittals.

B. Indicate reinforcement sizes, spacing, locations and quantities of reinforcing steel and wire fabric, bending and cutting schedules, splicing and supporting and spacing devices.

C. Indicate formwork dimensioning, materials, arrangement of joints and ties.

D. Submit details of temporary handrailing.

E. Submit formwork shop drawings prepared under the supervision of a professional engineer registered in the State of New York who shall be qualified as a structural engineer. Shop drawings shall bear the seal and signature of said licensed Professional Engineer.

1.08 - COORDINATION

A. Coordinate work under provisions of Section 013100 - Project Management and Coordination.

B. Coordinate work of other Sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.

C. Notify Engineer a minimum of three (3) working days prior to commencement of concrete pours.

D. Arrange to have waterproofing product manufacturer present during the addition of the waterproofing agent to the mix. Provide manfucturer with at least (3) working days advance notice. In case of postponements due to acceptable weather conditions, then reschedule accordingly at no additional costs to the Owner.

1.09 - DELIVERY, STORAGE AND HANDLING

A. Store cement off the ground in a dry, weatherproof, adequately ventilated structure with provisions to prevent absorption of water.

B. Transport dry concrete batches from the central plant to the site in approved truck mixers conforming to the requirements of the Truck Mixer Manufacturer's Agitating Standards. Each truck shall contain a plate stating the capacity, drum speeds and be provided with a revolution counter.

1.10 - ENVIRONMENTAL REQUIREMENTS

A. Do not place concrete when the ambient temperature is below 40 deg. F. or when the concrete temperature exceeds 85 deg. F. Under certain circumstances, the Engineer may approve the placement of concrete under the above conditions, provided that the procedures of ACI 305 and ACI 306 are strictly adhered to.

B. Do not place concrete when the conditions may adversely affect the placing, curing or finishing of concrete, or its strength.

C. Comply with the requirements contained in Section 016500 - Product Delivery, Storage and Handling.

1.11 - DESIGN MIXES

A. Submit the following related to design mixes:

1. Name, address, and telephone number of Contractor's laboratory.

2. Mix proportions.

3. Source of cement, type, brand, and certified copies of mill reports, including physical and chemical analysis.

4. Source of fine aggregates and results of tests made in accordance with ASTM C33 and ASTM C40.

5. Source of coarse aggregates and results of tests made in accordance with ASTM C33.

6. Source of Fly Ash in accordance with ASTM C618 (To be used in Pre-Equalization Basin and MBR Tank Concrete).

7. Catalogue cuts of all admixtures.

8. Furnish test results of slump, air entrainment and water-cement ratio for each mix design.

9. For each mix proposed, make and cure four (4) standard 6 in. concrete test specimens in the lab in accordance with ASTM C192. Furnish compression test results made in accordance with ASTM C39. Break two (2) cylinders at seven (7) days and two (2) at 28 days.

10. If the concrete is intended to be pumped, design mix accordingly and submit certification that it has been tested for pumping.

B. If the adopted mix fails to produce concrete meeting the requirements for strength and placeability, the Engineer may order additional cement or adjustments to mix proportions at no extra cost to the Owner.

PART 2 - PRODUCTS

2.01 - MATERIALS

A. Plywood forms: Douglas Fir species, solid one side grade and sound undamaged sheets. Thickness of wood shall be as required to support weight of concrete with minimal deflection.

B. Steel forms: Minimum 16 gage (1.5 mm) thick, stiffened to support weight of concrete with minimum deflection.

C. Tubular column type forms: Round, spirally wound laminated fiber material; inside surface treated with release agent.

D. Form ties: Snap-off metal, of fixed length, cone type.

E. Reinforcing: ASTM A615, 60 ksi (414 Mpa) yield grade billet steel deformed bars; uncoated finish, size and dimensions as indicated on plans.

F. Welded steel wire fabric: Plain type, ANSI/ASTM A185; in flat sheets; uncoated finish; size and dimensions as indicated on plans.

G. Cement: ASTM C150, Type II, Portland type, gray color.

H. Fine and coarse aggregates: ASTM C33. (No. 57 or No. 67).

I. Water: Clean and not detrimental to concrete.

2.02 - ACCESSORIES

A. Air entraining admixture: ASTM C260.

B. Chemical admixture: ASTM C494, Type as required.

C. Fly Ash Class C: ASTM C618. **(Influent Wet Well, Pre-Equalization Pump Station, Effluent Pump Station and MBR/Anoxic Tank Concrete only)**

D. Bonding agent: Three (3) component, solvent free, moisture tolerant, epoxy-modified cementitious product. Product Armatec 110 EpoCem as manufactured by Sika Corp. or specifically approved equal.

E. Vapor barrier: ASTM D2103, 15 mil (0.38 mm) thick clear polyethylene film.

F. Non shrink grout: Premixed compound with non-metallic aggregate, cement, water reducing and plasticizing agents; capable of minimum compressive strength of 2400 psi (16.5 Mpa) at 48 hours and 7000 psi (48.3 Mpa) at 28 days. Grout shall be suitable for contact with potable water. For equipment bases and pipe supports use non-shrink grout by Master Builders, Embeco 636, Unisorb V-1, or equal.

G. Flashing reglets: Galvanized steel; 26 gage (0.45 mm) longest possible lengths; alignment splines for joints; securable to formwork; Type CO, manufactured by FRY REGLET or equal.

H. Expansion joints: ASTM D1751; $^1/_2$-inch (13 mm) or ¾-inch (19 mm) thick, as indicated on drawings, asphalt impregnated fiberboard or felt.

I. Form release agent: Bio-Release EF or equal; colorless, water based, non-toxic, V.O.C. compliant, environmentally safe material which will not stain concrete, absorb moisture or impair natural bonding or color characteristics of coating intended for use on concrete; manufactured by Dayton Superior or equal. Agent shall not be detrimental to the environment.

J. Sealant: ASTM D1190; hot applied rubber compound manufactured by BURKE COMPANY or equal.

K. Absorptive mat: Burlap-polyethylene, 8-oz/sq. yd (270-g/sq. m.), bonded to prevent separation during use.

L. Membrane curing compound: Moisture Retention complying with ASTM C309. Products: Eucocure VOX as manufactured by Euclid or equal.

M. PVC Waterstops:

1. 6” high Polyvinylchloride with centerbulb, heat sealed joints at splices and intersections, Type 705 by Greenstreak Group, Inc. or equal.

2. 6” wide x 3” high (nom.) Polyvinylchloride retrofit style with centerbulb, heat sealed joints at splices and intersections, Type 609 by Greenstreak Group, Inc. or equal.

N. Injectable waterstop: One part polyurethane, extrudable swelling waterstop to create a compression seal; SikaSwell S-2 as manufactured by Sika Corp. or specifically approved equal.

O. Waterproofing Admixture **(Influent Wet Well, Pre-Equalization Pump Station, Effluent Pump Station and MBR/Anoxic Tank Concrete only)** :

1. Krystol Internal Membrane (KIM-HS) by Kryton or equal.

2.03 - MIXES

Cast in place concrete:

A. Mix concrete in accordance with ASTM C94, Alternative No. 2, to achieve the following:

1. Compressive strength (28 day): 4000 psi
2. Maximum water (cement ratio by weight): 0.50
3. Slump: Beams, Slabs, Footings, and Walls –
   a. Conventional Mix (Initial Slump): 3 ± 1 inch.
   b. Pump Mix (Final Slump): 6½± 1 Inch.
4. Air entrainment: 5½ ± 1 percent
5. Large aggregate: ¾” crushed stone, ASTM C33, No. 67

B. Concrete Fill:

1. Compressive strength (28 days): 2000 psi
2. Maximum water (cement ratio by weight): 0.50
3. Slump: 6 +/- 1 inch
4. Large Aggregate: 1 ½” gravel, ASTM C33, No.57

C. Use admixtures only when approved by the Engineer.

PART 3 - EXECUTION

3.01 - EXAMINATION

A. Verify lines, levels, and measurement before proceeding with formwork. Ensure that dimensions agree with the plans.

B. Inspect the formwork and reinforcing that it has been properly set and secured and that all items to be embedded, built-in or pass through concrete are at their proper locations and elevations.

C. The General Contractor shall verify that all other prime contractors have installed concrete inserts, sleeves and embedded elements of the project, such as conduit, and that their work has been totally completed and inspected by the Engineer.

3.02 - FORMWORK ERECTION

A. Hand trim sides and bottom of earth forms and remove loose soil to the satisfaction of the Engineer.

B. Remove water from forms and excavations and divert flows of water to avoid washing over, under or through freshly placed concrete.

C. Align form joints.

D. Do not apply form release agent where concrete surfaces are to receive special finishes or applied coatings that may be affected by the agent.

E. Where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack with non-metallic/non-shrink grout.

F. Prepare previously placed concrete by cleaning with steel brush and apply bonding agent in accordance with manufacturer's instructions.

G. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.

3.03 - INSTALLATION

A. Place, support, and secure reinforcement against displacement at the locations and to the dimensions as indicated on the plans.

B. Use reinforcing splices at a minimum of locations and only at locations of minimum stress. Review locations of splices with Engineer.

C. Rebar splice overlap shall be the minimum length as per ACI 318 and 350.

D. Ensure reinforcement, inserts, embedded parts, formed joint fillers, and joint devices are not disturbed during concrete placement.

E. Install joint fillers in accordance with manufacturer's instructions.

F. Install joint devices in accordance with manufacturer's instructions.

G. Install joint device anchors. Maintain correct position to allow joint cover flush with floor and wall finish.

H. Install joint covers in one-piece length when adjacent construction activity is complete.

I. Apply sealants in joint devices in accordance with manufacturer's instructions.

J. Maintain records of concrete placement. Record date, location, quantity, air temperature and test samples taken.

K. Place concrete continuously between predetermined expansion, control and construction joints as rapidly as possible by methods that shall prevent the separation of ingredients.

L. Place concrete with the aid of mechanical vibrators and shall be capable of transmitting to the concrete not less than 3,000 impulses per minute. Maintain at least three (3) vibrators, in good working condition, ready for use when concrete placement starts in any one area.

M. Do not interrupt successive placement. Do not permit cold joints to occur.

N. Provide two inch thick poured concrete rat slab below footprint of Pre-Equilization Basin Tank to provide finished working surface.

O. Remove forms in accordance with ACI 301. Remove formwork after the concrete has sufficiently hardened, except in inaccessible spaces where approved by the Engineer. Forms shall be removed from placed concrete after a minimum of three full days following placement, or as otherwise approved by the Engineer.

3.04 - CURING AND PROTECTION

A. Hot Weather Concreting: Comply with ACI 305R whenever the atmospheric temperature or the form surface temperature is at or above 90 degrees F., or climatic conditions of wind and/or low humidity will cause premature drying of the concrete.

B. Curing Temperature: Maintain the temperature of the concrete at 50 degrees F. or above during the curing period. Keep the concrete temperature as uniform as possible and protect from rapid atmospheric temperature changes. Avoid concrete temperature changes that exceed 5 degrees F in any one hour and 50 degrees F in any 24 hour period.

3.05 - INSTALLATION – FOUNDATION SLAB

A. Saw cut control joints at an optimum time after finishing. Cut slabs with $^{3}/_{16}$-inch (4.8 mm) thick blade, $^{1}/_{4}$ depth of slab thickness.

B. Separate slabs on grade from vertical surfaces with joint filler. Extend joint filler from bottom of slab to within $^{1}/_{4}$ inch (6 mm) of finished slab surface.

C. Steel trowel all other surfaces except as noted.

D. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains maintaining a minimum 1 percent slope.

E. Cure floor surfaces in accordance with ACI 308.

F. Apply curing compound in accordance with manufacturer's instructions in two (2) coats with second coat at right angles to the first.

3.06 - TOLERANCES

A. Provide Class A tolerance to floor slabs according to ACI 301.

B. Tolerance shall be true planes within 1/8 inch in 10 feet, as determined by a 10 foot straightedge placed anywhere on the slab in any direction.

3.07 - FIELD QUALITY CONTROL

A. Inspection and testing of concrete performed by the independent testing laboratory shall be performed under provisions of Section 014500 - Quality Control.

3.08 - FINISHES

A. The Contractor shall finish all concrete by:

1. Filling all localized surface voids (“bugholes”), honeycombing, and pockets exceeding $^{1}/_{8}$ inch diameter and $^{1}/_{8}$ inch depth, in the concrete with an application of cement mortar as follows: White cement shall be added to the mortar in an amount sufficient to tint the

mortar a shade lighter than the concrete to be repaired. Mortar shall be mixed approximately 45 minutes in advance of use. Care shall be exercised to obtain a good bond with the concrete. After the mortar has thoroughly hardened, the surface shall be rubbed with a carborundum stone in order to obtain the same color in the mortar as in the surrounding concrete. The final appearance shall be acceptable to the Engineer.

2. All fins caused by form joints, and other projections shall be completely removed to the satisfaction of the Engineer.

3. Filling all snap tie voids with mortar as specified above.

B. First floor interior walking surfaces of all buildings shall be left with a flat rubbed, float or steel trowel finish and be readied for painting as work of another Section.

C. Interior basement areas not receiving coatings shall be left with a hard steel trowel finish.

D. Housekeeping pads shall be left with a broom finish with a steel trowel rounded edge.

E. All exterior-walking surfaces shall be left with a fine broom finish with a steel trowel border and rounded edges.

F. All exposed horizontal and vertical wall and slab corners shall have a ¾" wide chamfered edge.

3.09 - PROTECTION AND REPAIR

A. Protect concrete from damage and rust staining to the date that the Final Completion Certificate has been issued by the Engineer. Immediately remove all rust spots that have developed during the construction period as soon as directed by the Engineer.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Sealants and joint backing.

B. Perimeter of wall openings, joints and ends.

C. Joints of all material requiring caulking or sealants and to prevent water, moisture, and air infiltration.

1.02 – REFERENCES

A. ASTM C790 - Use of Latex Sealing Compounds.

B. ASTM C804 - Use of Solvent-Release Type Sealants.

C. ASTM C834 - Latex Sealing Compounds.

D. ASTM D1056 - Flexible Cellular Material - Sponge or Expanded Rubber.

E. SWRI (Sealant, Waterproofing and Restoration Institute) - Sealant and Caulking Guide Specifications.

1.03 – SUBMITTALS

A. Submit under provision of Section 013300.

B. Manufacturer's complete descriptive data and color availability.

C. Manufacturer’s installation instructions: Indicate special procedures, surface preparation, and perimeter conditions requiring special attention.

D. Submit schedule of all conditions and joints requiring caulking and sealant proposed for each condition.

1.04 - QUALITY ASSURANCE

A. Perform work in accordance with sealant manufacturer’s requirements for preparation of surfaces and material installation instructions.

B. All work shall be performed by a qualified caulking and sealant contractor, who has specialized in this type of work for a minimum of five (5) years. Provide a minimum of five (5) references to the engineer for review and approval.

1.05 - PERFORMANCE REQUIREMENTS

A. Install sealants to prevent air and moisture from infiltrating or migrating from the building exterior to the interior.

1.06 – PROTECTION

A. Mask surrounding surfaces.

B. Protect sealants until cured.

1.07 - ENVIRONMENTAL REQUIREMENTS

A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.08 – COORDINATION

A. Coordinate the work with all sections referencing this section.

1.09 – WARRANTY

A. The products covered under this Section shall be covered by the manufacturer's standard 5 year warranty and include coverage for installed sealants and accessories which fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 - PRODUCTS

2.01 - SEALANT MANUFACTURERS

A. Sealants shall be manufactured by Bostik, TPI, 3M, DOW CORNING or equal.

2.02 – SEALANTS

A. Acrylic latex sealant (Interior): ASTM C920, paintable grade; single component, solvent curing, non-staining, non-bleeding, non-sagging.

B. Polyurethane sealant (Exterior): ASTM C92C, multi-component, chemical curing, non-staining, non-bleeding, non-sagging.

C. Caulking compounds shall be non-staining. Selection based upon manufacturer's recommendations for type of surface material and submitted to the Architect/Engineer for approval.

D. Butyl: One part butyl non-sagging, FSTT-5-1657.

E. One Part Silicone: ASTM C920, Type 5, Grade HS, Class 75, vertical surfaces.

F. Backing material shall be inserted into joint to the proper depth to allow for the proper balance of joint and sealant dimensions. Avoid excessive longitudinal stretching of rods during installation.

2.03 – ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint cleaner: Non-corrosive and non-staining type, as recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint backing: Round, closed cell polyethylene foam rod, oversized 50% larger than joint width; as recommended by sealant manufacturer; and compatible with sealant.

D. Bond breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 - EXECUTION

3.01 – EXAMINATION

A. Verify that substrate surface and joint openings are ready to receive work.

B. Verify that joint backing and release tapes are compatible with sealant.

3.02 – PREPARATION

A. Remove loose materials and foreign matter which might impair adhesion of sealant.

B. Clean and prime joints in accordance with manufacturer’s instructions.

C. Perform preparation in accordance with manufacturer’s instructions and ASTM C1193.

D. Protect elements surrounding the work of this section from damage or disfiguration.

E. Apply masking tape. Do not allow tape to touch surface to which caulking or sealant is to be applied.

3.03 – INSTALLATION

A. Perform installation in accordance with sealant manufacturer’s requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C1193.

C. Install sealant to achieve performance requirements, in accordance with manufacturer's instructions.

D. Measure joint dimensions and size material to achieve required 2:1 width/depth ratios.

E. Install joint backing to achieve a neck dimension no greater than 1/3 of the joint width.

F. Remove masking tape immediately after tooling of sealant is accomplished and before surface skin has started to form.

G. Install bond breaker where joint backing is not used.

H. Install sealant free of air pockets, foreign embedded matter, ridges and sags.

I. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

J. Apply sealant in continuous uniform bed.

K. Tool joints concave, flush with surface of adjoining material.

L. Match color of sealant to adjoining material.

3.04 – CLEANING

A. Comply with the requirements of Section 017423.

B. Clean adjacent soiled surfaces.

3.05 - PROTECTION OF FINISHED WORK

A. Protect sealants until cured and until project completion.

END OF SECTION

PART 1 - GENERAL

1.01 – DESCRIPTION OF WORK

A. This Section describes the complete system of heating cables, components, and controls to prevent pipes from freezing.

1.02 - SUBMITTALS

A. Shop Drawings – Show materials, gauges, dimensions, and installation details.

B. Certified AMCA Ratings – Submit ratings for air and sound performance.

C. UL Listing – Submit listing if specified.

PART 2 - PRODUCTS

2.01 – COMPONENTS

A. The self-regulating heating cable shall consist of two (2) 16 AWG nickel-copper bus wires embedded in parallel in a self-regulating polymer core that varies its power output to respond to temperature all along its length, allowing the heating cable to be cut to length in the field. The heating cable shall be covered by a radiation-crosslinked, modified polyolefin dielectric jacket. To provide a ground path and to enhance the heating cable's ruggedness, the heating cable shall have a braid of tinned copper and an outer jacket of modified polyolefin, as required per section 427-23 of the NEC. For installation on plastic piping, the heating cable shall be applied using aluminum tape (AT-180).

B. In order to conserve energy and to prevent overheating, the heating cable shall have a self-regulating factor of at least 90 percent. The self-regulation factor is defined as the percentage reduction, without thermostatic control, of the heating cable output going from 40° F pipe temperature operation to 150° F pipe temperature operation.

C. The heating cable shall operate on line voltages of 120 volts single phase without the use of transformers.

D. The heating cable for metal-pipe freeze protection shall be sized according to the table below. The required heating cable output rating is in watts per foot at 50° F. (Heating cable selection based on 1 inch fiberglass insulation on metal piping.)

PIPE SIZE (inches)	MINIMUM AMBIENT TEMPERATURE 0 DEGREES F
4	2 strips - 5 watts
6	2 strips - 5 watts
8	2 strips - 5 watts

10	2 strips - 5 watts
12	3 strips - 8 watts
14	3 strips - 8 watts
18	3 strips - 8 watts

E. The heating cable for PVC-pipe freeze protection shall be sized according to the table below. The required heating cable output rating is in watts per foot at 50° F. (Heating cable selection based on 1 inch fiberglass insulation on metal piping.)

PIPE SIZE (inches)	MINIMUM AMBIENT TEMPERATURE 0 DEGREES F
3 or less	5 watts

F. The heating cable shall be XL-Trace cable as manufactured by Raychem Corporation.

G. Power connection, end seal, splice, and tee kit components shall be applied in the field.

H. Heating cable circuit shall be protected by a ground-fault device for equipment protection. This requirement is in accordance with section 427-22 of the NEC.

I. Environmental Technology, Inc. – Tracon Model FPT130 – Single-Point Freeze Protection Heat-Trace Control - electronic thermostat with ground fault equipment protection.

1. Control shall have an operating temperature from -40°F to 131°F and adjustable temperature setpoints from 30°F, 38°F, 45°F or 50°F to a tenth degree resolution with a low temperature threshold of 2°F below setpoint. The external temperature sensor supplied shall be NEC Class 2 device rated for wet locations.

2. Provide a built-in 30 mA GFEP that is digitally filtered to minimize false tripping. A ground fault must be manually reset with the TEST/RESET switch before heater operation can be resumed. The GFEP function is automatically tested along with the heaters whenever power is applied and once every 24 hours thereafter for additional safety.

3. Provide an alarm relay with an isolated SPDT AMP Class 2 contact. The alarm relay is reverse acting and is normally closed unless there is a ground fault condition, GFEP circuitry fails a test, or when there is a bad temperature sensor.

4. The temperature sensor shall be NEC Class 2 device that can be located up to 2,000' (610 m) away from the FPT. Shall operate in non-hazardous environments in a temperature range extending from −40° to 230°F. The rugged non-metallic enclosure is appropriate for installation in indoor or outdoor locations suitable for NEMA 4x applications.

2.02 – PERFORMANCE REQUIREMENTS

A. All heating-cable components shall be UL Listed, CSA Certified, or FM Approved for use as part of the system to provide pipe freeze protection. Component enclosures shall be rated NEMA 4X to prevent water ingress and corrosion. Installation shall not require the installing contractor to cut into the heating-cable core to expose the bus wires. Connection systems that require the installing Contractor to strip the bus wires or that use crimps or terminal blocks, shall not be acceptable. All components that make an electrical connection shall be re-enterable for servicing. No component shall use silicone to seal the electrical connections. An exception will be made in areas where a conduit transition is required.

PART 3 - EXECUTION

3.01 - INSTALLATION

A. Install system in accordance with manufacturer's recommendations.

B. Position the heating-cable on the lower section of the piping to protect it from damage.

C. Provide the following minimum amount of additional footage of heating cable for the following heat sinks. Wrap heat sinks with heating cable as per the manufacturer's recommendations.

ITEM	FEET PER ITEM
Plug/Check Valve	4.3
Ball Valve	2.6
Pipe Supports	3.0 x pipe diameter (in feet)

D. Apply the heating cable linearly on the pipe after piping has been successfully pressure-tested. Secure the heating cable to piping with cable ties or fiberglass tape.

E. Apply "Electric Traced" labels to the outside of the thermal insulation.

F. Do not mount ambient thermostats where they will be exposed to direct sunlight. If it is unavoidable, provide sunshields.

G. Apply heat tracing where shown on drawings and all places where pipe freezing may occur.

3.02 – TESTS

A. After installation and before and after installing the thermal insulation, subject heating cable to testing using a 2500-Vdc Megger, minimum insulation resistance shall be 20 mega-ohms or greater.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. General:

1. The Contractor shall provide a complete electrical installation including all labor, equipment, materials, machinery, tools, transportation, procurement of all necessary permits, certificates, and other incidental services, whether described in these Contract Documents or not, to provide a satisfactorily operating electrical installation.

2. The Contractor shall perform all operations necessary to install, equip, adjust, and place into satisfactory operation all electrical equipment. The Contractor shall connect the various elements of the project to form a complete and properly operating system.

B. The principal items of electrical work include, but are not necessarily limited to the following:

1. Demolition of existing generator and all associated components.

2. Demolition and removal of associated components of existing equipment scheduled to be demolished by Contract G.

3. Furnishing and pulling all cables, furnishing and installing all conduit grounding and related fittings for completing the installation of all electrically operated equipment.

4. Furnishing and installing all switches, conduit, grounding and related fittings as well as certain cables for completing the installation of all electrically operated equipment, controls, safety devices, alarms, instrumentation, heating, ventilating and air conditioning equipment.

5. Furnishing and installing all lighting fixtures including conduit, wiring, receptacles, switches, and lamps as required to complete these installations. Structural steel supports and frames for mounting and supporting all pullboxes, junction boxes, transformers, panelboards, switches and similar equipment required.

6. Furnishing and installing exit lighting, emergency lighting units, conduit, wiring, batteries and as required to complete these installations.

7. Furnishing and installing dry type power and lighting transformers and constant voltage transformers where indicated.

8. Furnishing and installing lighting and power distribution panelboards.

9. Furnishing and installing 480V switchgear.

10. Furnishing and installing motor control centers.

11. Short circuit and relay coordination study and adjustment of all protective and metering devices for the electrical system.

12. Furnishing and installing new manholes where required including all site work removals and restorations required in order to complete the installations as shown on the Contract Drawings and as specified herein.

13. Furnishing and installing telephone system.

C. Refer to Section 011200 for supplemental information concerning the extent of work required under this contract.

1.02 - RELATED WORK

A. Concrete slabs, foundations, pads, and miscellaneous metal work required for equipment furnished under this contract.

B. Flashing and sealing of conduits through outside and interior walls.

1.03 - QUALITY ASSURANCE

A. It is understood that the rights and benefits given the Owner by the guarantees found in the technical specifications are in addition to and not in derogation of any rights or benefits found in the general conditions of the Contract.

B. Electrical equipment provided under this Contract shall be turned over in a sustained and proper operating condition. Instruction on further operation and maintenance shall be included in the operating and maintenance instructions.

1.04 - REFERENCES

A. Perform work in accordance with standards listed below. Where these specifications are more stringent, they take precedence. In case of conflict, obtain a decision from the Engineer.

1. NFPA-70: National Electrical Code

2. NFPA-101: Life Safety Code

3. NFPA-820: Fire Protection in Wastewater Treatment and Collection Facilities

4. New York State Energy Code

5. New York State Building Code

6. Applicable New York State Administrative Code

7. Applicable Town Ordinances.

8. PSEG Long Island rules and regulations.

9. I.S.A.: Instrument Society of America

10. U.L.: Underwriters Laboratories.

11. N.E.M.A.: National Electrical Manufacturers Association

12. O.S.H.A.: Occupational Safety and Health Administration

13. A.N.S.I.: American National Standards Institute

14. J.I.C.: Joint Industrial Council

15. I.E.E.E.: Institute of Electrical and Electronic Engineers.

16. F.M.: Factory Mutual.

17. Telephone Utility Company

1.05 - EXISTING CONDITIONS AND RELOCATIONS

A. The bidder, before submitting his proposal, shall visit the site and shall be responsible for having ascertained local conditions, such as location, accessibility and general character of the site, the character and extent of any existing work within or adjacent to the site, and any other work being performed on the site at the time of submitting his proposal.

B. The bidder shall also fully examine all the drawings, including drawings of other contracts related to this project and relating to the work and shall become completely informed as to the extent and character of the new work required and prevailing existing conditions. No consideration or allowance will be made for the Contractor's failure to avail himself of such information.

C. It is anticipated that several branch circuit conduits and/or lights may have to be routed, extended, relocated or temporarily removed and replaced, to permit the installation or removal of equipment by other trades under this scope of work. Review all demolition drawings and allow for the

rerouting or relocation of wiring systems and devices to remain that must be relocated or rerouted. This Contractor shall allow for and accomplish these rework items to suit field requirements and conditions.

D. When working with existing equipment or wiring systems care shall be taken to avoid damage, and shutdown of process equipment. Prior to working in an area, the Contractor shall examine existing conditions and review it with the Engineer prior to altering existing systems.

E. Where new construction involves connecting to or using existing equipment, the Contractor shall include all work and materials required to adapt, extend or rework the prevailing existing "As Is" condition, to the new work. Should an existing condition prove to be grossly deteriorated or inadequate for modification, such condition shall be reported to the Engineer for a remedy.

F. Where existing empty conduits are to be used for new wiring systems, they shall be assumed to be in poor condition requiring prior "make ready" work before using. A wire brush reamer shall be pulled through prior to wiring and, if necessary, water accumulations shall be pumped or blown out.

1.06 - ELEMENTARY WIRING DIAGRAMS AND POINT- TO-POINT FIELD WIRING DIAGRAMS

A. Prior to the manufacture of equipment to be furnished under this Contract, the Contractor shall submit for approval complete elementary, internal and interconnecting wiring diagrams for all switchgear, branch motor protection, and circuit breaker distribution panels required under this Contract. The elementary diagrams shall completely describe the circuit in which the component is to be used and shall be drawn using standard JIC/NEMA electrical symbols and ANSI C37.2 device function numbers. The diagrams shall be CADD drafted.

B. Point-to-point field wiring diagrams are required for all equipment furnished as work of this Contract. Point-to-point field wiring diagrams shall be complete and shall contain all details including all items provided under other construction contracts and sections. As a minimum, all diagrams shall indicate:

1. Color-coding and wire numbers.

2. Wire sizes and insulation types.

3. Designation of conduit in which wiring is to be run.

4. Panel terminal strip numbers.

5. Location, functional name and manufacturer's designation of items to which wiring is to be

connected, including all items provided under other sections and construction contracts.

6. Include diagrams for controls and power. Power diagrams to include interconnections with switchgear, motor control centers, panelboards, motors control panels, and field devices.

C. The Prime Electrical Contractor will be provided with two copies of shop drawings provided by other prime contractors that the Engineer has deemed to be relevant to the work to be performed under Contract E. The Contractor shall use shop drawings of equipment furnished by others to prepare point-to-point field wiring diagrams. The Contractor shall coordinate the fabrication of power distribution devices with the control panels and equipment being provided by others.

PART 2 - PRODUCTS

2.01 - MATERIALS AND EQUIPMENT

A. All materials and equipment used in carrying out these specifications shall be new and be UL listed and labeled.

PART 3 - EXECUTION

3.01 - COORDINATION

A. Examine specifications, Contract Drawings, drawings prepared for other contracts, specifications of other contracts, the project site, and existing electrical system to become thoroughly familiar with items that require electrical connections and coordination. Electrical drawings are diagrammatic and shall not be scaled.

B. Notify other contractors of any deviations or special conditions necessary for the installation of work. The Engineer prior to installation will resolve interferences between work of various contractors. Work installed not in compliance with specifications and drawings and without properly checking and coordinating as specified above shall, if necessary, be removed and properly reinstalled without additional cost to the Owner.

C. The Engineer shall be the mediating authority in all disputes between this Contractor and other contractors arising on this project.

D. Equipment shall be installed in accordance with manufacturer's recommendation. Where conflicts occur between Contract Documents and these recommendations, a clarification shall be requested of the Engineer for decision before proceeding with such work.

E. Insofar as it is possible to determine in advance, advise masonry tradesmen to leave proper

chases and openings. Place all outlets, anchors, sleeves, and supports prior to pouring concrete or installation of masonry work. Should the Contractor neglect doing this, any cutting and/or patching required to be done is at this Contractor's expense.

3.02 - CUTTING AND PATCHING

A. Repair or replace routine damage caused by cutting in performance of work under this contract.

B. Correct unnecessary damage caused due to installation of electrical work, brought about through carelessness or lack of coordination.

C. Holes cut through floor slabs shall be core drilled with drill designed for this purpose. All openings, sleeves, and holes in slabs shall be properly sealed, fire proofed and waterproofed.

D. Repairs shall be performed with materials that match existing materials and to be installed in accordance with appropriate sections of these specifications.

3.03 - CONCRETE SLABS, FOUNDATIONS AND PADS & MISCELLANEOUS METALS

A. Concrete slabs, foundations and pads required for the emergency generator facility and other equipment (furnished under this Contract) shall be constructed in accordance with the details shown on the Drawings and as specified in Section 030000 – Concrete.

B. Gratings, handrailing, and other miscellaneous metal work shall be as shown on the drawings in accordance with the requirements contained in Divisions 5 and 6, if such specifications are provided.

3.04 - TESTS

A. On completion of work, installation shall be completely operational and entirely free from ground, short circuits, and open circuits. Perform a thorough operational test in presence of the Engineer. Balance all circuits so that feeders to panels are not more than 10% out of balance between phases with all available load energized and operating. Furnish all labor, materials, and instruments for above tests.

B. Furnish Engineer with a copy of such tests including identification of each circuit and readings recorded, also the main service ground resistance test as described in Section 260526 – Grounding and Bonding of these specifications. Test information to include ampere readings of all panel circuit breakers, and isolation resistance reading of motors and transformers.

3.05 - IDENTIFICATION OF EQUIPMENT

A. Properly identify the following in accordance with the details on the Drawings and the requirements contained in Section 260553 – Electrical Identification:

1. Motor Control Centers including all individual devices
2. Circuit breaker panels and individually mounted circuit breakers
3. Disconnect switches
4. Telephone pull boxes
5. Power / Control pull stations

3.06 - INSTALLATION

A. The Contractor shall carefully move and replace equipment, appliances and all related items, as required to conduct proposed work.

B. Install and conduct all work per applicable NEC, State and local codes.

C. Mounting of equipment to handrails shall not be permitted. All local devices, such as disconnect switches, receptacles, transmitters, and local control stations shall be frame mounted and be self-supporting.

D. Conduits for power and controls shall be run in masonry walls or embedded in or below concrete slabs and foundation walls where such work is inside a new building. Exposed conduits in process type areas will only be allowed for joist mounted lighting distribution and unit heaters. Exposed conduits in pipe trenches may be allowed with the prior approval of the Engineer.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Electrical demolition.

1.02 - SUBMITTALS

A. Submit under provisions of Section 013300.

B. Shop Drawings: Indicate demolition and removal sequence and location of salvageable items; location and construction of temporary work.

1.03 - REGULATORY REQUIREMENTS

A. Conform to applicable code for demolition work, safety of structure and dust control.

B. Obtain required permits from authorities.

C. Notify affected utility companies before starting work and comply with their requirements.

D. Do not close or obstruct egress width to exits.

E. Do not turn off electric equipment without authorization from Owner.

F. Conform to procedures applicable when discovering hazardous or contaminated materials.

G. Obtain a utilities mark-out of all buried underground utilities for telephone, electric, gas, sewer and water, including all customer owned utilities.

1.04 - SCHEDULING

A. Schedule Work to coincide with new construction.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.01 - EXAMINATION

A. Verify field circuiting arrangements at the existing Treatment Plant.

B. Verify that abandoned wiring and equipment serve only abandoned facilities.

C. Demolition drawings are based on casual field observation. Report discrepancies to the Engineer before disturbing existing installation.

D. Beginning of demolition means installer accepts existing condition.

3.02 - PREPARATION

A. Coordinate utility service outages with Utility Company.

B. Provide power, wiring and connections to maintain all existing power, control and telemetry systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.

3.03 - DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

A. Remove, relocate, and extend existing installations to accommodate new construction, as indicated on drawings.

B. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.

C. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets which are not removed.

D. Repair adjacent construction and finishes damaged during demolition and extension work.

E. Provide caps and filler plates/plugs for all openings in equipment and enclosures after removal of conduits.

F. Maintain access to existing electrical installations which remain active. Modify installation or provide access panel as appropriate.

G. Remove demolished materials from site as work progresses.

H. Completely remove and dispose of all electrical power, control, and data feeds including conduits, conductors, boxes and supports not scheduled to remain after new construction is tested and operational.

I. Where existing devices and equipment are called to be removed, Contractor shall maintain circuit continuity to all existing devices and equipment remaining on that circuit. Contractor shall provide all required conduit, conductors and boxes as required.

3.04 - CLEANING AND REPAIR

A. Clean and repair existing materials and equipment which remain or are to be reused.

B. Remove temporary work.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Under this Section, the Contractor shall provide all labor, equipment and material necessary to furnish, install, and test the wires and cables complete, in place, as shown on the Contract Drawings, specified herein and approved by the Engineer.

B. In general, the wires and cables included under this Section shall include, but not be limited to, the following:

1. 600V power and control cable

2. 600V lighting and receptacle cable

3. Instrumentation wires

C. All conductors to be continuous from origin to panel or equipment termination without splices. Where splices and taps are necessary or are required, notify the Engineer prior to installation.

D. All splices shall be in made in stainless steel terminal boxes unless otherwise indicated.

1.02 – QUALITY ASSURANCE

A. Qualifications of Manufacturers:

1. Products used in the work of this Section shall be produced by manufacturers regularly engaged in the manufacturing, installing and servicing of similar items with a history of successful production acceptable to the Engineer as specified herein and in accordance with the General Conditions.

2. Contractor shall submit the following information pertaining to the manufacturer(s):

a. Complete literature, performance, and technical data describing the proposed equipment and listing of items made by the manufacturer.

b. Location of closest service office from which this equipment shall be serviced.

c. Location of closest parts inventory for item installation.

3. Field Testing:

a. Wires and cables shall be tested before being connected to motors, devices or

terminal blocks.

b. If tests reveal defects or deficiencies, the Contractor shall make the necessary repairs or shall replace the cable as directed by the Engineer, without additional cost to the Owner.

c. All tests shall be made by and at the expense of the Contractor who shall supply all testing equipment.

4. Continuity Tests:

a. All cables, wires and shields shall be tested for continuity. Testing for continuity shall be by test light or buzzer.

5. Insulation-Resistance Tests:

a. 600V power and control cables and wires shall be tested for their insulation-resistance values. Test shall utilize a megohmeter with applied voltage to be 1000VDC for one (1) minute. Insulation-resistance test shall be performed on each conductor with all other conductors grounded. The resistance value shall be 20 megohms or greater.

b. 300V instrumentation signal cable shall be tested from conductor to conductor, conductor to ground, and conductor to shield using a digital volt-ohm meter. The resistance valve shall be 10 megohms or greater.

1.03 - REFERENCES

A. ANSI/NFPA 70 - National Electric Code.

B. NECA Standard of Installations.

1.04 - SUBMITTALS

A. Submit product data under provisions of Section 013300.

1.05 - COORDINATION

A. Coordination:

1. The Contractor shall coordinate wire and cable required with the equipment being furnished by others for the satisfactory operation of the equipment or system.

2. The Contractor shall review installation procedures under other sections and contracts and coordinate them with the work specified herein.

3. The Contractor shall notify other prime contractors in advance of the installation of the work included to provide them with sufficient time for installation and coordination of interrelated items that are included in their contracts and that must be installed in conjunction with the work included in this Section.

B. Work Not Included: Work under this Section specifically excludes wires and cables in conduits that are not part of this Contract. This only includes HVAC automatic environmental controls. Certain cables are being provided by others and installed under this Contract, as shown in the Cable and Conduit Schedule or as noted elsewhere on the Drawings.

1.06 - PROJECT CONDITIONS

A. Verify that embedded conduit, in masonry and concrete, is installed as shown on the Drawings prior to the work being enclosed by others.

B. The Contractor shall be present at all concrete pours made by the General Contractor.

C. Conductor sizes are based on copper at 75°C.

D. Wire and cable routing shown on Drawings is approximate unless dimensioned or specifically called for such as where conduit is to be embedded in concrete or masonry. Route wire and cable as required to meet project conditions and shall be routed above ceilings, directly under joists, in pipe trenches, where available, and in masonry. Where exposed conduit is permitted, it shall be run to maximize wall space.

E. Field verify destination location to determine cable routing.

F. Where wire and cable routing is not shown for proposed destination, determine exact routing and lengths required. Routing shall be reviewed with the Engineer.

PART 2 - PRODUCTS

2.01 - CONDUCTORS

A. Install products in accordance with manufacturer's recommendations.

B. Single copper conductors with 600-volt insulation.

C. Minimum size of feeder conductors and grounds shall be No. 12 AWG.

D. Insulation: No. 12 AWG and No. 10 AWG, provide ANSI/NFPA 70, Type THWN. For all conductors No. 8 AWG and larger, provide ANSI/NFPA 70, Type THW, or THWN.

E. Use solid conductor for feeder and branch circuits, 10 AWG and smaller.

F. All conductors shall include complete set of manufacturer's markings for insulation and conductor size.

G. Manufacturers shall be ANACONDA, TRIANGLE, ROME, or approved equal.

H. Provide white colored neutral conductors; provide black, color coded phase conductors; provide green colored ground conductors.

2.02 - 300 VOLT INSTRUMENTATION SIGNAL CABLE - FOR INDOOR USE

A. Indoor Application:

1. The 300-volt instrumentation signal cable for indoor use shall consist of single or multiple twisted pairs or triads of coated, stranded copper conductors with polyvinyl chloride (PVC) insulation and nylon jacket. Each individual pair or triad of wires shall have an aluminum/polyester tape shield with a tinned copper drain wire. For multiple pair or triad cables, an overall aluminum/polyester tape shield with a tinned copper drain wire shall enclose the individual wire assemblies. The overall jacket shall be PVC. Cables shall have a 105EC rating.

2. The conductors shall be annealed, tin-coated copper with Class B stranding per ASTM B-8. Minimum size conductor shall be AWG No. 16.

3. The insulation shall be PVC. The insulation thickness shall be 15 mils.

4. Individual Conductor Insulation: The jacket over each individual wire shall be nylon and shall have a thickness of 4 mils.

5. The shield for each individual pair or triad shall be an aluminum/polyester tape. The shield shall be 1.35 mils thick and shall be overlapped to provide 100% coverage. The shield shall also contain a 7-strand tinned copper drain wire which shall be a maximum of two sizes smaller than the conductors. All individual shields shall be completely isolated from each other.

6. The overall shield for multiple pair or triad cables shall be an aluminum/polyester tape. The shield shall be 2.35 mils thick and shall be overlapped to provide 100% coverage. The shield shall also contain a 7-strand tinned copper drain wire which shall be the same

size as the conductors.

7. The overall jacket shall be PVC and shall meet the requirements of UL 13.

8. The jacket thickness shall be as follows:

Wire Size	No. of Pairs	No. of Triads	Jacket Thickness
16 AWG	1	--	35 Mils
16 AWG	2,4	--	50 Mils
16 AWG	8,10,12	--	60 Mils
16 AWG	--	1	35 Mils
16 AWG	--	2,4	50 Mils
16 AWG	--	8	60 Mils
16 AWG	--	12	70 Mils

9. Manufacturers and their products shall be equal to:

   a. Cablec APVIC

   b. Okonite A Type P-OS and Type SP-OS

   c. Belden

B. In Underground Ducts and Outdoor Use in Conduits:

1. The 300-volt instrumentation signal cable for outdoor use in conduits shall consist of single or multiple twisted pairs or triads of coated, stranded copper conductors with polyvinyl chloride (PVC) insulation and nylon jacket. Each individual pair or triad of wires shall have an aluminum/polyester tape shield with a tinned copper drain wire. For multiple pair or triad cables, an overall aluminum/polyester tape shield with a tinned copper drain wire shall enclose the individual wire assemblies. The overall jacket shall be chlorinated polyethylene (CPE). Cables shall have a 105EC rating.

2. The conductors shall be annealed, tin-coated copper with Class B stranding per ASTM B-8. Minimum size conductor shall be AWG No. 16.

3. The insulation shall be PVC. The insulation thickness shall be 15 mils.

4. The jacket over each individual wire shall be nylon and shall have a thickness of 4 mils.

5. The shield for each individual pair or triad shall be an aluminum/polyester tape. The

shield shall be 1.35 mils thick and shall be overlapped to provide 100% coverage. The shield shall also contain a 7-strand tinned copper drain wire which shall be a maximum of two sizes smaller than the conductors. All individual shields shall be completely isolated from each other.

6. The overall shield for multiple pair or triad cables shall be an aluminum/polyester tape. The shield shall be 2.35 mils thick and shall be overlapped to provide 100% coverage. The shield shall also contain a 7-strand tinned copper drain wire which shall be the same size as the conductors.

7. The overall jacket shall be CPE and shall meet the requirements of UL 13.

8. The jacket thickness shall be as follows:

Wire Size	No. of Pairs	No. of Triads	Jacket Thickness
16 AWG	1,2	--	35 Mils
16 AWG	4	--	50 Mils
16 AWG	8,10,12	--	60 Mils
16 AWG	--	1	35 Mils
16 AWG	--	2,4	50 Mils
16 AWG	--	8	60 Mils
16 AWG	--	12	70 Mils

9. Manufacturers and their products shall be as follows:

   a. Cablec APZIC

   b. Okonite AOkobon Type P-OS and Type SP-OS

2.03 - 4-PAIR CATEGORY 6 UNSHIELDED TWISTED PAIR CABLE

A. Manufacturers: Subject to compliance with project requirements, manufacturers offering Products which may be incorporated in the Work include the following:

1. Belden Corporation, Carmel, IN (800) 246-2673.

2. Avaya, Basking Ridge, NJ (800) 344-02232.

3. Berk-Tek, Incorporated, New Holland, PA (800) 237-5835.

4. CommScope, Hickory, NC (800) 982-1708.

5. Draka Comteq, Franklin, MA (888) 541-7100.

6. General Cable, Highland Heights, KY (800) 424-5666.

7. Mohawk/CDT Leominster, MA (978) 537 9961.

8. NORDX/CDT, Worcester, MA (800) 331-0779.

9. Superior Essex, Atlanta, GA. (800) 685-4887.

10. Tyco Electronics, Harrisburg, PA (800) 522-6752.

B. Conductors: 4 twisted pair - 24 AWG, solid copper w/ RJ-45 connector ends

1. Individually insulated plenum rated conductors under common plenum rated sheath unless entire cable is installed within conduit/EMT or if area where cable is installed is not considered a return air plenum according to any applicable codes.

2. Complies with individual characteristics established in ANSI/TIA/EIA-568-B, and all addendums for Category 6E cable performance specification.

3. Overall Nominal Diameter: .365 x .165 in.

4. Nominal Impedance: 100 ohms plus or minus 15 percent.

5. Certified capable of performing to minimum 350 MHz.

C. Mechanical Characteristics

1. Operating temperature: -20°C to +80°C

2. Bulk cable weight: 29 lbs./1000 ft.

3. Maximum recommended pulling tension: 45 lbs.

6. Minimum bend radius: 1 in.

D. Flame test: UL1666 Riser

E. Electrical Characteristics:

1. Nom. Mutual Capacitance @ 1 KHz 15.0 pF/ft

2. Maximum Capacitance Unbalance (pF/100 m) 49.2 pF/100 m

3. Nominal Velocity of Propagation 70 %

4. Maximum Delay (ns/100 m) 510 @ 100MHz ns/100 m

5. Maximum Delay Skew (ns/100m) 25 ns/100 m

6. Maximum Conductor DC Resistance @ 20 Deg. C 9 Ohms/100 m

7. Maximum DCR Unbalance @ 20 Deg. C 3 %

8. Max. Operating Voltage - UL 300 V RMS

2.04 - MECHANICAL CONNECTORS

A. Conductor tapping connectors shall be BURNDY Servit split bolt, Series KS and KS3, or approved equal.

B. Split bolt connectors shall use BURNDY Type SC Servit cover on indoor applications.

C. Terminal lugs shall be BURNDY Universal Terminal Series. Terminal lugs shall be sized for proper ampacity and proper number of conductor holes. Each conductor shall occupy only one hole on a terminal lug.

D. Conductor tapping connectors for multiple conductors shall be BURNDY Series V-Tap with V-Tap covers, and V-Blok mounting platforms.

PART 3 - EXECUTION

3.01 - INSTALLATION

A. General:

1. The cables and wires shall be installed as shown on the Contract Drawings. Make terminations in accordance with cable manufacturers instructions for the particular type of wire and cable.

2. Splices are not allowed in the underground duct, manhole and handhole systems. If splices are required, the Contractor shall obtain approval in writing from the Engineer prior to splicing.

3. All low voltage cable shall be installed in metallic conduit.

B. Wire and Cable Sizes: The sizes of wire and cable shall be as shown on the Contract Drawings,

or if not shown, as approved by the Engineer. Minimum size wire shall be No. 12 AWG for all power, lighting and receptacle circuits. Wires for control circuits shall be No. 14 AWG minimum. Wire for instrumentation circuits shall not be smaller than No. 16 AWG. If due to field routing the voltage drop exceeds 2.5%, the size of conductors shall be increased such that 2.5% is the maximum voltage drop incurred.

C. Number of Wires: The number of wires indicated on the Contract Drawings for the various control, indications, and metering circuits were determined for general schemes of control and for particular indication and metering systems. The actual number of wires installed for each circuit shall, in no case, be less than the number required; however, the Contractor shall add as many wires as may be required for control and indication of the actual equipment selected for installation at no additional cost to the Owner.

D. Wiring Identification: All wiring shall have a unique wire number and be labeled at both ends. Wire numbers shall correspond with the equipment terminal wire numbers. Where no wire numbers are indicated, the Contractor shall assign wire numbers. Wire numbers shall not be duplicated.

E. Cable Identification Tags: The Contractor shall furnish all labor and materials and affix in a permanent way to each cable in manholes, cable compartments and vaults, junction boxes, pull boxes and points of termination, a laminated plastic tag, bearing clearly printed, the cable number indicated on the Contract Drawings or some other approved identification number or symbol. All cables shall be temporarily tagged with its full ID number immediately after it has been pulled.

F. Cable Installation: All interior cable shall be run in metallic conduit.

G. Wiring Supplies: Only electrical wiring supplies manufactured under high standards of production and meeting the approval of the Engineer shall be used. Rubber insulating tape shall be in accordance with ASTM D119 Friction tape shall be in accordance with ASTM D69.

H. Training of Cable: The Contractor shall furnish all labor and material required to train cables around cable vaults within buildings and in manholes in any outdoor underground duct system. Sufficient length of cable shall be provided in each manhole and vault so that the cable can be trained and racked in an approved manner. In training or racking, the radius of bend of any cable shall be not less than the manufacturer's recommendation. All manhole cables shall be arc and fireproofed.

I. Connections at Control Panels, Limit Switches and Similar Devices:

1. Where stranded wires are terminated at panels, and/or devices connections shall be made by solderless lug, crimp type ferrule or solder dipped.

2. Where enclosure sizes and sizes of terminals at limit switches, solenoid valves, float switches, pressure switches, temperature switches, and other devices make 7-strand, No. 12 AWG, wire terminations impractical, the Contractor shall terminate external circuits in an adjacent junction box of proper size and shall install No. 14 AWG stranded wires to the junction box in a conduit.

J. Pulling Temperature: Cable shall not be flexed or pulled when the temperature of the insulation or of the jacket is such that damage will occur due to low temperature embrittlement. When cable will be pulled with an ambient temperature within a three day period prior to pulling of 40EF or lower, cable reels shall be stored during the three day period prior to pulling in a protected storage with an ambient temperature not lower than 55EF and pulling shall be completed during the work day for which the cable is removed from the protected storage.

K. Color Coding:

1. Conductor jacket shall be color coded as follows:

AC Power

480V/277 and above	208Y/120V System
Phase A - Brown	Phase A - Blue
Phase B - Orange	Phase B - Black
Phase C - Yellow	Phase C - Red
Neutral - White	Neutral – White

2. Control (Per ICEA Method 1, K-2):

Wire Number	Color
1	Black
2	Red
3	Blue
4	Orange
5	Yellow
6	Brown
7	Red With Black
8	Blue With Black
9	Orange With Black
10	Yellow With Black
11	Brown With Black
12	Black With Red
13	Blue With Red
14	Orange With Red
15	Yellow With Red
16	Brown With Red
17	Black With Blue
18	Red With Blue

Wire Number	Color
19	Orange With Blue

3. DC Power

   a. Positive Lead - RED

   b. Negative Lead - BLACK

4. Instrumentation Signal

Pairs	Triads
Black and White	Black, Red and White

5. Equipment Ground - GREEN

L. Instrumentation Cable Installation:

1. The Contractor shall install all cable or conductors used for instrumentation wiring (4-20 madc, etc.) in a grounded metal raceway.

2. The use of asbestos cement or plastic conduit will not be permitted.

3. Analog signal wires shall exclusively occupy these conduits.

4. Where instrumentation cables are installed in panels, etc., the Contractor shall arrange wiring to provide maximum clearance between cables and other conductors.

5. Instrumentation cables shall not be installed in same bundle with conductors of other circuits.

6. Grounding of cable shield shall be accomplished at one point only, unless otherwise required by instrumentation systems manufacturer.

7. Special instrument cable shall be as specified or recommended by the vendor of the equipment or instruments requiring such wiring.

8. Installation, storage, terminations, etc., shall be per manufacturer's recommendations.

3.02 - IDENTIFICATION

A. Identify wire and cable under provisions of Section 260553.

B. Identify each conductor with its circuit number.

3.03 - FIELD QUALITY CONTROL

A. Perform field inspection and testing under provisions of Section 014500.

B. Inspect wire and cable for physical damage and proper connection.

C. Measure tightness of bolted connections and compare torque measurements with manufacturer's recommended values.

D. Verify continuity of each branch circuit conductor.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Grounding electrodes and conductors.

B. Equipment grounding conductors.

C. Bonding.

1.02 - REFERENCES

A. ANSI/NFPA 70 - National Electric Code.

1.03 - REGULATORY REQUIREMENTS

A. Conform to requirements of ANSI/NFPA 70.

B. Furnish products listed and classified by Underwriters Laboratories, Inc.

PART 2 - PRODUCTS

2.01 - COMPONENTS

A. Ground clamps: OZ ELECTRICAL MANUFACTURING COMPANY, Type "CG", or equal by STEEL CITY or APPLETON.

B. Raceways, conductors, outlet boxes, pull and junction boxes to be furnished in accordance with applicable sections of these specifications.

C. Rod Electrode: Copper, 3/4-inch diameter, 10 feet long.

D. Wire: Copper, sized to meet NFPA 70 requirements.

PART 3 - EXECUTION

3.01 - INSTALLATION

A. General:

1. Clean all conductive surfaces on equipment to be grounded, to assure good electrical continuity.

2. Effectively bond all grounding conductors to grounding rod electrodes, equipment

enclosures and ground busses.

3. Locate all grounding attachments away from areas subject to physical damage. Provide protective covering as required.

4. Install service entrance building ground as per NEC and PSEG requirements.

5. Service entrance shall be bonded to street side of first flange or coupling of incoming main water line with heavy duty ground clamp. Bonding conductor to be sized in accordance with NFPA 70.

6. Generators shall have a dedicated grounding system for separately derived system for switching neutrals.

7. Building steel shall be bonded to ground bus on main service with a conductor the same size as in B.1 below.

8. Install new service grounds and grounding systems for new service as per PSEG and NEC requirements.

B. Feeder/Branch Circuits:

1. All circuits shall have a separate green grounding conductor in conduit sized in accordance with NFPA 70. Minimum size of conductor shall be No. 12 AWG.

2. Flexible conduit will not be approved as achieving continuity of ground. All flexible conduit to have a jumper wire sized to ampacity of branch breaker and to be connected to conduit system on both ends; this applies to fixtures, motors, controls, etc.

C. Transformers: Transformers shall be grounded and grounding conductors and conduits sized in accordance with NFPA 70.

3.02 - TEST

A. Test ground on main service. Ground system resistance shall be no greater than 10 ohms using test equipment similar to a "Biddle" test. Test data to be submitted to the Engineer for approval and such approved test data to become a part of the Record Documents.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. System of supporting devices and hangers for support or bracing for conduit, electrical equipment, fixtures, panel boards, outlet boxes, junction boxes and cabinets.

B. All exposed hardware, hangers, supports, rods, frames, angles, channels, brackets, and any other system, regardless of application, location, or purpose shall be stainless steel.

C. Mounting of electrical devices to handrailing shall not be permitted. All local disconnect switches, pull boxes, transmitters, panels, and junction boxes shall be frame mounted.

D. Hardware used to anchor supports to concrete or masonry shall be stainless steel.

E. Conduit sleeves set in concrete shall be carbon steel with bitumastic coating, inside and outside.

F. Minimum size of threaded rod shall be ¼-inch diameter. All threaded rod shall be type 316 stainless steel.

G. Definitions:

1. Exterior locations shall be locations defined as exposed to outside conditions, located outdoors, located within process tanks, channels, wells, pits and the like.

2. Interior locations shall be areas located within buildings, lean-to structures or the like.

3. Exposed locations are locations that are not concealed within walls and slabs.

H. Under this Section, the Contractor shall provide all labor, equipment and material necessary to furnish, and install supporting devices complete, in place, as shown on the Contract Drawings, specified herein and approved by the Engineer.

I. In general, the supporting devices included under this Section shall include, but not be limited to the following:

1. Channels, fittings, and brackets

2. Conduit supports

3. Concrete inserts

4. Beam clamps and hanger rod or threaded rod supports

1.02 - REFERENCES

A. ANSI/NFPA 70 - National Electric Code.

B. Furnish products listed and classified by Underwriters Laboratories, Inc.

1.03 - SUBMITTALS

A. The Contractor shall submit product catalog cuts in accordance with the requirements contained in Section 013300 – Submittals.

PART 2 – PRODUCTS

2.01 - GENERAL

A. The following sections describe typical supporting devices such as channels, fittings, and brackets. Not all possible components are listed. The Contractor shall furnish and install all required items based on the specification of products listed below.

2.02 - CHANNELS, FITTINGS AND BRACKETS

A. Channels shall be type 316 stainless steel. Channels shall have a minimum thickness of 12 gauge. The cross sectional width dimension shall be 1-$^1/_2$" minimum. The depth shall be as required to satisfy load requirements.

B. Attachment holes, when required, shall be factory punched on hole centers approximately equal to the cross sectional width and shall be 9/16" in diameter.

C. Fittings and brackets shall have 9/16" diameter holes on centers identical to the channel or as required to align with the channel holes. Fittings and brackets shall have the same width as the channel and shall be 1/4" thick minimum. All fittings and brackets shall be type 316 stainless steel. Fittings and brackets shall mate properly with the channel.

2.03 - CONDUIT SUPPORTS

A. All conduit supports shall securely attach the conduit to the structure or to the channel as required.

2.04 - CONCRETE INSERTS

A. Concrete inserts shall be continuous slot or spot type, as required. Concrete inserts shall be 12 gauge steel.

B. Concrete insert finish shall have an electro-plated zinc finish in accordance with ASTM B633.

2.05 - BEAM CLAMPS AND HANGER ROD SUPPORTS

A. Beam clamps, threaded rod, and hanger rod supports shall be type 316 stainless steel regardless of location.

2.06 - HARDWARE AND THREADED COMPONENTS

A. Hardware and threaded components shall include all miscellaneous items to complete the assembly of the support system. This includes nuts, bolts, springs, washers, etc.

B. All hardware, regardless of the location, shall be type 316 stainless steel.

2.07 - MANUFACTURERS

A. The equipment described in the proceeding paragraphs is to form a complete support system associated with a single manufacturer, as different manufacturers have slight variations in dimensions, parts, etc. It is the intention of these specifications that all required parts be furnished and installed for a complete support system.

B. Manufacturers for the supporting devices shall be as follows: ALSTRUT, B-LINE, or KINDORF.

PART 3 - EXECUTION

3.01 - INSTALLATION

A. General:

1. The Contractor shall furnish and install all required supporting devices required to properly mount and secure all electrical equipment furnished under this Contract.

2. All supporting devices shall be installed level, parallel and perpendicular to building walls and floors, such that the support system is installed in a neat and professional manner.

3. Actual designs of the support system shall be the responsibility of the Contractor. The Contractor shall submit support design details to the Engineer for approval before proceeding with fabrication if requested by the Engineer.

4. Wherever equipment to be supported exceeds 50 pounds in weight, a Professional Engineer registered in the State of New York shall prepare a design for the proposed support system for Engineer’s receipt.

5. In all instances, the Contractor shall furnish and install the proper sized rods, channels, fittings, brackets, etc. necessary to adequately support the equipment. Minimum support equipment sizes shall be as specified in PART 2 - PRODUCTS of this Specification Section.

6. All holes in hung ceilings for support rods and other equipment shall be made adjacent to bars where possible, to facilitate removal of ceiling panels.

B. Channels, Fittings and Brackets Support System:

1. The Contractor shall furnish and install channels, fittings, brackets and related hardware for mounting, supporting and installing all electrical equipment furnished under this Contract and for devices furnished by others for installation under this Contract.

2. The support system shall be rigidly bolted together and braced to make a substantial supporting framework.

3. All frameworks that support operator devices, such as control stations, shall be fabricated such that the top of the equipment to be mounted is four (4) feet above finished floor.

4. Final mounting heights shall be as approved by the Engineer.

C. Conduit Supports: All exposed conduits shall be supported with a conduit support system consisting of channels, nuts, bolts and screws, threaded rod, conduit straps and anchors, as required. Each conduit shall be properly supported every six (6) feet, maximum.

D. Concrete and Masonry Inserts:

1. The Contractor shall furnish and install all anchor bolts, masonry inserts and similar devices, as required, for proper installation of support equipment furnished under this Contract.

2. Where motor control centers, switchgear, unit substations and other electrical equipment is being installed on concrete pads being constructed as work of the General Contractor, the Electrical Contractor shall install leveling channels or make arrangements with the General Contractor for their installation.

3. The Contractor shall install leveling channels in concrete housekeeping pads.

E. Beam Clamps and Hanger Rod Support:

1. All equipment fastenings to steel columns, beams and trusses shall be by beam clamps.

2. In lieu of beam clamps, equipment may be welded to steel structures, subject to Engineer approval.

3. No holes shall be drilled in any steel columns, beams, and trusses.

4. Hanger rod supports shall be installed such that threaded rod is parallel and perpendicular to building walls and floors.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Conduit.

B. In general, the conduit system included under this Section shall include, but not be limited to the following:

1. Rigid hot dipped galvanized steel (RGS) conduits

2. PVC coated rigid hot dipped galvanized steel conduits

C. Flexible Liquid Tight Metal Conduit

1. Connecting motors and other equipment subject to vibration, maximum length - 3 feet.

2. Passing through building expansion joints.

D. Conduit fittings: Conduits to be mechanically and electrically continuous from one electrical device to another.

E. In general, the boxes included under this Section shall include, but not be limited to the following:

1. Outlet, switch, and device boxes

2. Junction boxes (with and without terminals)

3. Pull boxes

4. Refer to the Schedule at the end of this Section for locations of box classes

1.02 - REFERENCES

A. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.

B. ANSI/NFPA 70 - National Electric Code.

C. NECA Standard of Installation.

D. ANSI/NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.

E. NEMA RN 1 – Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and

Intermediate Metal Conduit.

F. ANSI/NEMA OS1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers and Box Supports

G. NEMA 250 - Enclosures for Electrical Equipment (1000 volts maximum)

1.03 - SUBMITTALS

A. Submit product data under provisions of Section 013300.

B. Manufacturers specifications and other data required demonstrating compliance with the specific requirements.

C. Materials list showing all items to be furnished and installed under this Section.

D. Complete shop drawings of all work of this Section showing dimensions and locations of all items including supporting structures and clearance requirements.

E. Submit two (2) samples of each type conduit, 2 feet in length.

F. Submit sample of expansion/deflection fitting.

1.04 - REGULATORY REQUIREMENTS

A. Furnish products listed and classified by Underwriters Laboratories, Inc.

B. Conform to requirements of ANSI/NFPA 70.

1.05 - DELIVERY, STORAGE AND HANDLING

A. Deliver and store all products in accordance with the manufacturers recommendation, as approved by the Engineer, with all labels and seals intact and legible.

B. Provide off-site storage and protection when site does not permit on-site storage or protection.

C. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

D. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

E. In case of damage to a product during transportation, handling or storage, the Contractor shall immediately make all repairs and replacements necessary to the approval of the Engineer and at

no additional cost to the Owner.

F. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

G. Each length of conduit shall be shipped with one coupling on one end, a threaded protector at the other end.

1.06 - PROJECT CONDITIONS

A. Verify all conduit routings by field measurements.

B. Verify routing and termination locations of conduit prior to rough-in.

C. Conduit routing is shown on Drawings in approximate locations unless dimensioned. Route as required to complete wiring system. Provide all required sweeps, boxes, and fittings.

PART 2 - PRODUCTS

2.01 - RIGID GALVANIZED CONDUIT

A. Rigid conduit shall be hot dipped, galvanized, or electro-galvanized steel by Wheatland, Triangle, Republic or approved equal.

B. Associated couplings, connectors and fittings shall be as manufactured by THOMAS & BETTS CORP., O.Z. GEDNEY CO., EFCOR or approved equal. Catalog numbers used below are those of THOMAS & BETTS CORP. based on 3/4-inch size and are considered standards by which equivalents are to be judged.

C. ERICKSON couplings, Series 676 or approved equal, shall be used where neither length of conduit can be rotated.

D. Conduit connectors shall be threaded type. Set screw and compression type connections ARE NOT acceptable.

E. Sealing fitting locknuts shall be Series 142SL.

F. Steel or malleable iron insulated bullet hub, Series 370-379, complete with sealing "O" ring. DO NOT use "die cast" material.

G. Entrance ells shall be Series 1491 or approved equal.

H. Combination coupling shall be Series 531 for connecting rigid galvanized conduit to electrical

metallic tubing.

I. Provide explosion proof fittings and equipment for Class 1 Division 1 locations.

2.02 – PVC COATED STEEL CONDUIT

A. Plastic coated steel conduits and fittings shall consist of rigid galvanized steel conduit as described above except covered with bonded 40 mil nominal thickness PVC jacket in accordance with NEMA Standard RN-1 and a 2 mil urethane interior coating. Conduit shall be Robroy Industries "Plasti-Bond", Occidental Coating Company "OCAL-BLUE", or Perma-Cote Industries "Supreme".

B. The conduit shall be coated on the interior and exterior.

2.03 – HAZARDOUS LOCATION FITTINGS CLASS I, DIV. I

A. Conduit Unions: Class 1, Div. 1 Types UNF and UNY as manufactured by O-Z/Gedney or approved equal.

B. Sealing Fittings: Class 1, Div. 1 types EYA and EYAM as manufactured by O-Z or approved equal.

C. Sealing Hub: Class 1, Div. 1 type EYHSG with Sealing Gasket and Locknut as manufactured by O-Z/Gedney or approved equal.

D. Explosion proof sealing compound systems for fittings and hubs shall consist of a fiber material (to form a dam for the sealing material) and the sealing compound itself. Both the fiber and sealing compound shall be rated for use in the classified area and shall be compatible with the fitting or hub being sealed.

1. Manufacturers and their particular products shall be as follows:

a. Appleton Electric Co., "Kwiko Sealing Cement & Fiber Filler"

b. Crouse-Hinds, "Chico A Sealing Compound & Chico X Fiber"

c. O-Z/Gedney, "Type EYC and Type EYF"

E. Conduit Fittings:

1. Conduit fittings shall be furnished and installed as required and shall include unions, threaded hubs, nipples, enlargers, reducers, couplings, locknuts, bushings, etc. All fittings shall be steel with zinc electroplate finish or malleable iron with zinc electroplate

finish. All fittings shall have insulated throats (where applicable).

2. Conduit fittings shall be manufactured by the following: Appleton Electric Company, Crouse-Hinds, O-Z/Gedney

F. Expansion couplings for use in conduit runs shall be the expansion/deflection type. Expansion couplings shall have iron or bronze ends, neoprene sleeves, stainless steel bands and tinned flexible copper braid bonding jumper. Couplings shall be watertight, corrosion resistant and concrete tight.

1. Manufacturers and their particular products shall be as follows: Appleton Electric Company; "Type DF", Crouse-Hinds; "Type XD", O-Z/Gedney; "Type DX".

2. For explosive areas, expansion unions shall be utilized. Expansion unions shall be steel with zinc electroplate finish and have copper or bronze grounding spring or jumper.

a. Manufacturers and their particular products shall be as follows:

1) Appleton Electric Company; "Type UN"

2) Crouse-Hinds; "Type UN"

3) O-Z/Gedney; "Type UN"

G. Grounding Bushings: Grounding bushings shall be insulated, shall be constructed of malleable iron or steel with zinc plated finish, and shall have a tin plated copper saddle. Insulating material shall have a 150E rating. Grounding bushing shall be O-Z/Gedney, "Type BLG", or approved equal.

H. Liquid-tight Fittings: Liquid-tight fittings shall be furnished and installed wherever liquid-tight conduit is used. Liquid-tight fittings shall be constructed of steel or malleable iron. Fittings shall be zinc coated. Fittings shall be liquid, rain and oil tight. Sealing rings shall be neoprene. All throats shall be insulated. Liquid-tight fittings shall be Appleton Electric Company, "Type ST"; O-Z/Gedney "Type 4Q", or approved equal.

I. Explosion-Proof Fittings: Explosion-proof fittings shall be constructed as described above except fittings shall be listed for use in classified areas.

1. Manufacturers and their particular products shall be as follows:

a. Appleton Electric Co., "Types BR, EC, EL, ES, EX, EY, and PLG"

b. Crouse-Hinds, "Types EC, EL, ES, EY, PLG and RE"

c. O-Z/Gedney, "Types EC, EL, EY, PLG, RB and RE"

d. The above products are meant as a guide and products from the above manufacturers not specifically mentioned do not exclude their use, if they comply with these specifications.

J. PVC Coated Fittings: PVC coated fittings shall be as described in the paragraphs above except the fittings shall be PVC coated.

K. Conductive Compound: Conductive compound shall be a grease metallic type and shall be Thomas & Betts, "KOPR-SHIELD", or equal.

L. Conduit Bodies:

1. Conduit bodies shall be cast type with threaded hubs and shall be made of copper-free aluminum or malleable iron. Copper-free aluminum bodies shall have an aluminum enamel finish. Malleable iron bodies shall have a zinc electroplate and aluminum enamel finish. Finishes shall be applied after all machining has been completed.

2. Conduit body covers shall be of the same material and finish as the conduit body. All screws shall be stainless steel. All covers shall come with rubber or neoprene gaskets.

3. Manufacturers and their particular products shall be as follows:

a. Appleton Electric Company; "Form 35 and Form 85"

b. Crouse-Hinds; "Mark 9"

c. O-Z/Gedney; "Malleable iron/copper-free aluminum conduit bodies"

M. Mogul Conduit Bodies:

1. All conduit bodies 2" and larger and where physically necessary, shall be of the "mogul" type. Mogul type conduit bodies shall conform to the specifications above as to materials, finish, covers, etc.

2. Manufacturers and their particular products shall be as follows:

a. Appleton Electric Company; "Mogul Unilets"

b. Crouse-Hinds; "Mogul Conduit Outlet Bodies"

N. Explosion-Proof Conduit Bodies:

1. Explosion-proof conduit bodies shall be constructed as indicated, except the conduit bodies shall be listed for use in the particular classified area.

2. Manufacturers and their particular products shall be as follows:

a. Appleton Electric Company; "CPU, ELB, ER, GU and GR Series"

b. Crouse-Hinds; "CPS, EAB, GU and OE Series"

c. O-Z/Gedney; "GU and LBH Series"

d. The above products are meant as a guide and products from the above manufacturers not specifically mentioned do not exclude their use, if they comply with these specifications.

2.04 - FLEXIBLE LIQUID-TIGHT METAL CONDUITS AND FITTINGS

A. Liquid-tight flexible metal conduit shall be ANACONDA or approved equal.

B. Description: Interlocked steel construction with PVC jacket.

C. Provide flexible liquid-tight conduits and fittings as manufactured by THOMAS & BETTS CORP., O.Z. GEDNEY CO. or approved equal. Catalog numbers used below are those of the THOMAS & BETTS CORP., based on 3/4" size and are to be considered as standards by which equivalents are to be judged. All conduit shall be liquid-tight flexible type, UL type UA, or suitable for exposure to continuous or intermittent moisture.

D. Flexible liquid-tight connectors shall be Series 5333 or equal.

2.05 - BOXES

A. General Purpose:

1. General purpose outlet, switch and device boxes shall be constructed of stamped sheet steel. Minimum box size shall be 4" x 4" x 2-1/8".

2. Box sizes shall have standard industry and manufacturer dimensions. Gangable boxes are not allowed. Conduit knockouts are allowed on these boxes.

3. Box covers, partitions, screws, etc. shall be of the same material as the box, and shall be furnished and installed as required for a complete installation.

4. General purpose outlet, switch and device boxes shall be as manufactured by: Appleton Electric Company, Raco, Steel City, or approved equal

5. Masonry boxes shall be as in paragraph 2.01 (A) (1) but shall be constructed specifically for installation in masonry block or tile walls.

B. Cast Boxes (Non-Explosion Proof):

1. Cast outlet, switch and device boxes shall be constructed of copper-free aluminum or malleable iron, shall have an epoxy powder or zinc electroplate with aluminum enamel coat finish, threaded hubs and integral mounting lugs.

   a. Covers shall be malleable iron or aluminum. Screws shall be stainless steel. Neoprene or rubber gaskets shall be provided for all boxes.

2. PVC coated cast outlet, switch and device boxes shall be constructed as in 1. above except boxes and covers shall be PVC coated.

   a. Cast box manufacturers and their particular products shall be as follows:

      1) Appleton Electric Company, "Type FS & FD"

      2) Crouse-Hinds, "Type FS & FD"

      3) O-Z/Gedney, "Type FS & FD"

      4) Or approved equal

3. Covers for cast boxes shall mate with the device installed as required and shall match the environment, that is, PVC coated, non-corrosive, weatherproof, etc.

   a. Cover manufacturers and their particular products shall be as follows:

      1) Appleton Electric Company, "Type FSK"

      2) Crouse-Hinds, "Type DS, S and WLR"

      3) O-Z/Gedney, "Type FS-1 and FS-2"

      4) Or approved equal

4. Above model types do not exclude cover types not shown, but in general will be the types used in the majority of applications. Special applications may require covers not shown

above.

C. Explosion Proof Boxes:

1. Explosion proof outlet, switch, and device boxes shall be cast type with threaded hubs. Bodies and covers shall be iron with zinc electroplate finish or copper-free aluminum with epoxy powder coat finish. Screws shall be stainless steel. Boxes shall be PVC coated where required.

2. Boxes, covers and devices in explosion proof areas are many times provided by manufacturers as a complete unit in either factory sealed or non-sealed models. The quantity and type required shall be as shown on the Contract Drawings and as needed for a complete installation.

3. The switches, receptacles and devices mounted within these boxes shall be as specified in other sections of this Specification.

4. The box/cover/device manufacturers shall be as follows:

a. Appleton Electric Co.; "EDS, EFS, EPS and GUSC Series"

b. Crouse-Hinds; "EDS, EFD, EFS, FSPC and GUSC Series"

c. O-Z/Gedney; "EFS and EFD Series"

2.06 - JUNCTION AND PULL BOXES

A. General Purpose:

1. General-purpose junction and pull boxes shall be constructed of stamped sheet steel. Minimum box size shall be 4" x 4" x 2-1/8". Box sizes shall have standard industry and manufacturer dimensions. Gangable boxes are not allowed. Conduit knockouts are allowed on these boxes.

a. Box covers, partitions, screws, etc. shall be of the same material as the box and shall be furnished and installed as required for a complete installation.

b. General purpose junction, pull and terminal boxes shall be as manufactured by: Appleton Electric Company, Raco, Steel City, or equal.

2. Masonry boxes shall be as specified above, but shall be constructed specifically for installation in masonry block walls.

B. NEMA 1 Boxes:

1. NEMA 1 boxes shall be used when stamped steel boxes are not available in the sizes required. NEMA 1 boxes shall be sized as shown on the Contract Drawings or, if not specifically dimensioned, as required per NEC requirements.

2. Boxes shall be constructed of steel without conduit knockouts. Boxes shall be constructed as follows:

Maximum Dimension	USS Gauge
Up to 24 inches	No. 16
Greater than 24 up to 36 inches	No. 14
Greater than 36 inches	No. 12

3. Box covers with weights of 10 pounds or greater shall have two (2) handles welded to the cover. Boxes may also be furnished with a door instead of a cover. If provided with a door, box door shall open 180E and shall have quarter turn or flush handle latches.

4. Box covers, doors, screws, partitions, etc., shall be of the same material as the box and shall be furnished and installed as required for a complete installation.

5. Boxes shall have ANSI 61 gray polyester powder finish inside and out.

C. NEMA 12 Boxes:

1. NEMA 12 boxes shall be sized as shown on the Contract Drawings or, if not specifically dimensioned, as required per NEC requirements.

2. Boxes shall be constructed of steel without conduit knockouts and shall be gasketed.

3. Boxes shall be constructed as follows:

Maximum Dimension	USS Gauge
Up to 24 inches	No. 16
Greater than 24 up to 36 inches	No. 14
Greater than 36 inches	No. 12

4. Box covers with weights of 10 pounds or greater shall have two (2) handles welded to the cover. Boxes may also be furnished with a door instead of a cover. If provided with a door, box door shall open 180E and shall have door clamps. Door shall be continuously hinged.

5. Boxes shall have ANSI 61 gray polyester powder finish inside and out.

D. NEMA 4 Boxes:

1. Cast junction and pull boxes shall be malleable iron or copper free aluminum with threaded hubs and integral mounting lugs. Copper-free aluminum boxes shall have an aluminum enamel finish. Malleable iron boxes shall have a zinc electroplate and aluminum enamel finish or epoxy powder coat. Finishes shall be applied after all machining.

a. Covers shall be of the same material and finish as the box. All screws shall be stainless steel. All covers shall come with rubber or neoprene gasket. PVC coated boxes and covers shall be provided where required.

b. Manufacturers and their particular products shall be as follows:

1) Appleton Electric Co.; "GS, JB and SEH Series"

2) Crouse-Hinds; "ARB, GRF, GS, VGR and VXF Series"

c. It is the intention of these specifications to limit the use of cast junction and pull boxes to the types listed above. These types of boxes are generally used for lighting, receptacle, fire alarms, etc. type of circuits which usually have a conduit size of 1" or smaller. Where larger size pull or junction boxes are required in NEMA 4 areas, boxes as described below shall be used.

2. Non-Cast type NEMA 4 junction and pull boxes shall be sized as shown on the Contract Drawings or, if not specifically dimensioned, as required for NEC requirements.

a. Boxes shall be constructed of steel without conduit knockouts and shall be gasketed. Boxes shall be continuously welded.

b. Boxes shall have doors which open 180E, have stainless steel clamps and stainless steel continuous hinge.

E. NEMA 4X Boxes:

1. 304 Stainless Steel-

a. NEMA 4X junction and pull boxes shall be constructed of 304 stainless steel.

b. Boxes shall be continuously welded with no holes or knockouts. Boxes shall have

seamless foam-in-place gasket, body stiffeners where required, stainless steel door clamps and continuous hinge.

c. Box doors and all exterior hardware shall be 304 stainless steel.

d. Boxes shall be unpainted. Boxes shall have smooth brushed finish.

2. Fiberglass-

a. Junction and pull boxes shall be fiberglass reinforced with sealed seams and no knockouts. Boxes shall have seamless foam-in-place gasket.

b. Box doors shall be fiberglass-reinforced with fiberglass-reinforced polyester hinges and quick-release latches.

c. Fiberglass boxes shall have gray exteriors and gray or white interiors.

d. Fiberglass junction and pull boxes shall be Hoffman, Type GQRLP or approved equal.

F. Explosion Proof Boxes:

1. Explosion proof junction and pull boxes shall be constructed of cast iron or cast aluminum with covers or doors of same material. Screws and bolts shall be stainless steel. Boxes shall be PVC coated where required.

a. Boxes shall be rated for use in the hazardous area it is to be installed in

b. Boxes shall be sized as shown on the Contract Drawings or, if not specifically dimensioned, as required per NEC requirements.

c. Boxes, covers and doors shall have a polymer enamel finish.

2. PVC coated cast explosion proof boxes shall be as specified above except boxes, covers and doors shall be PVC coated. All boxes shall contain a neoprene gasket.

a. Cast explosion proof box manufacturers shall be as follows:

1) Appleton Electric Co.; "DER, EJB, EXB, GUB and JBE Series"

2) Crouse-Hinds; "DHE, EJB, EJH, and GU Series"

3) O-Z Gedney; "IG, OFB and YG Series"

G. Terminal Boxes:

1. Terminal boxes shall be identical to junction and pull boxes specified above for the following: NEMA 1 Boxes, NEMA 12 Boxes, NEMA 4 Boxes, NEMA 4X Boxes, Explosion Proof Boxes, or approved equal

2. In addition to the above description, each terminal box shall have a steel panel with terminal blocks installed on mounting studs within the box.

3. The steel panel shall be painted with white enamel and shall be at least one USS gauge size thicker than the box thickness.

4. The terminal blocks shall be screw type, rated 600V, 20A minimum. Terminal blocks shall be phenolic, accept up to a #10 AWG wire and have a marking strip.

H. Pull/Splice Box: Outdoor Above Ground

1. Outdoor pull/splice boxes shall be Nema 4X stainless steel as manufactured by Hoffman or approved equal.

2. Free-standing site pull/splice boxes above ground shall be mounted on a concrete pad.

3. Pull/Splice boxes shall have stainless steel support and accessories.

4. Where splice box size is not indicated, size to permit pulling, racking, and splicing of cables as per NEC.

I. Pull/Splice Box: Outdoor, underground.

1. All pull boxes used for this project shall be minimum PSEG-LI B-3-6 or specifically approved equal for all customer installed power and control circuits.

2. Provide H-20 Cast-Iron Traffic Load Cover. Cover shall have 3” high logo “Electric”.

2.07 - WIRE TROUGH

A. Wire trough shall be manufactured by SQUARE D or equal.

B. Wire trough shall be completely enclosed with removable sealed front cover.

C. Construction: Less than 8-inch square shall not be used. All wire troughs shall be 14-gauge.

D. Finish: ANSI-49 epoxy paint applied by cathodic electro-deposition paint process over a corrosion

resistant phosphate preparation or stainless steel, as indicated in the schedule shown in paragraph 3.01 herein.

E. UL listed.

2.08 – ELECTRICALLY CONDUCTIVE CORROSION-RESISTANT THREAD COMPOUND

A. KOPR-SHIELD or approved equal.

PART 3 - EXECUTION

3.01 – INSTALLATION OF CONDUITS

A. Except as shown on the Contract Drawings, the minimum size conduit permitted is $^{3}/_{4}$ inch.

1. Each length of conduit installed shall be free from blisters and other defects. Each piece installed shall be cut square, taper reamed, and a coat of sealing compound applied to threads. Threads on conduits shall be painted with a conducting compound prior to assembly. Conduit connections shall be screwed tight with only incomplete threads exposed. All conduit joints shall be made with standard couplings and the ends of the conduit shall butt tightly into the couplings. In exposed work only, where standard couplings cannot be used, only Erickson couplings are permitted, or as otherwise acceptable to the Engineer.

2. Conduit threaded in the field shall have standard sizes and lengths. Conduit joints shall be cut square, threaded, reamed smooth, and drawn up tight so conduit ends will butt in couplings, connectors, and fittings.

3. Secure conduits to all boxes and cabinets with double locknuts and bushings so system will be electrically continuous from service to all outlets.

4. Install conduit in accordance with NECA Standard of Installation.

5. Cap ends of conduits to prevent entrance of water and other foreign material during construction.

6. Complete all conduit systems before pulling conductors.

7. Minimum conduit depth shall be 18” below grade, measured to the top of the conduit on exterior underground installations.

B. Support conduits under provisions of Section 260529, unless specifically described herein.

1. Provide cable supports in conduits rising vertically in accordance with the National Electric Code.

2. Provide No. 12 AWG copper pull wires or 250-lb tested polyethylene line in all empty conduits. Steel wire not acceptable as pull wire. Provide two foot slack at each end.

3. Install conduit to preserve fire resistance rating of partitions and other elements.

C. Ground and bond conduit under provisions of Section 260526.

D. Where neither length of conduit can be rotated, ERICKSON couplings Series 676 shall be used.

E. Provide steel, or malleable iron nylon insulated bullet hub, Series 370-379, complete with recessed sealing "O" ring, in areas:

1. Where enclosed and gasketed fixtures and weatherproof devices are specified;

2. Where rigid conduit enters a sheet metal enclosure, junction box and outlet box, and not terminated in a threaded hub.

3. Do not use die cast material.

F. Where exposed conduits running overhead pass through building expansion joints, install flexible liquid tight conduit of same size with sufficient slack to allow conduits on either side of expansion joint to move a minimum of 3-inches in any direction. Provide supports as required on each side of expansion joint, all in accordance with seismic requirements of specific area.

1. Failure to route conduit through building without interfering with other equipment and construction shall not constitute a reason for an extra charge. Equipment, conduit and fixtures shall fit into available spaces in building and shall not be introduced into building at such times and manner as to cause damage to structure. Equipment requiring servicing shall be readily accessible.

2. Factory bent elbows or field bent elbows with approved tools may be used. Heating of conduit to facilitate bending is prohibited.

3. Install exposed conduit either parallel or perpendicular to structural members, unless impractical. Group conduit wherever possible. Conduit shall be attached to structural components with approved supports spaced a maximum of six (6) feet apart and shall form a neat rigid installation. Conduit supported from building walls shall be installed with at least $^{1}/_{4}$-inch clearance from the walls to prevent the accumulation of dirt and moisture behind the conduit.

G. Conduit and/or conduit fittings shall not be welded together or to any steel structure; however, conduit supports may be welded to flanges of steel beams and columns in accordance with approved welding techniques and engineering practice in locations acceptable to the Owner.

H. All conduits extending through the floor behind panels or into control centers or similar equipment shall extend a minimum of 6 inches above the floor elevations, with no couplings at floor elevation.

I. All exposed conduits rising above finished floor elevation, excluding those encompassed by an equipment pad, shall be provided with a 4-inch high curb. Three (3) inches of cover shall be provided horizontally around the conduit.

1. Conduit installed in concrete or masonry walls shall be so arranged that a minimum of 3-inches of covering be obtained. Spacings between conduits shall be sufficient to permit a complete filling with concrete or mortar without voids.

2. Install conduit runs in such location as to avoid steam or hot water pipes. Provide a minimum separation of 12 inches where conduit crosses or parallels hot water or steam pipes.

J. Install conduits containing instrumentation cable to provide the following clearances: Conduits installed parallel to conductors energized at 480 volts shall have a clearance of 18 inches and 208/120 volts shall have a clearance of 12 inches.

K. Conduits installed at right angles to conductors energized at 480 Volts or 120/208 Volts shall have a clearance of six (6) inches.

L. Where practicable, conduits containing instrumentation cable shall cross raceway-containing conductors of other systems at right angles.

M. The cutting of walls or floors for conduit shall be kept to a minimum. Where such cutting is necessary, care shall be taken so as not to weaken the walls or floor involved. Beams or other structural supports shall not be cut under any condition.

N. Protect conduit immediately after installation by installing flat non-corrosive metallic discs and steel bushings, designed for this purpose, at each end. Discs shall not be removed until it is necessary to clean the conduit and pull wire and cable. Before wire or cable is pulled, insulated bushings shall be installed at each end of the conduit.

O. Conduit installation shall be arranged to minimize cleaning. No horizontal runs of conduit will be permitted on brick or masonry walls.

P. When installing PVC coated rigid galvanized steel conduit use only a vise approved for PVC coated conduit. The use of a chain vise will not be permitted. Where PVC coated rigid galvanized steel conduit and fittings are specified, PVC coating damaged during transportation, loading, installation, etc. or cut during threading shall be repaired with the same type of covering obtained from and in accordance with the manufacturers recommendations.

Q. Connections from rigid conduit to motors, limit switches, solenoid valves, level controls, etc. and all devices subject to vibration shall be made with short lengths of flexible metal conduit. These lengths shall be provided with appropriate connectors with devices that will provide an excellent electrical connection between equipment and the rigid conduit for the flow of ground current.

R. Conduit Bodies and Fittings:

1. Install conduit bodies and fittings as necessary and where required, to complete the electrical conduit system. Conduit bodies and fittings shall also be installed wherever a pull point is necessary to keep the number of 90° bends in a conduit run to the maximum specified previously.

2. Paint the threads of all conduit bodies and fittings with a conductive compound prior to assembly.

3. Where all-thread nipples are used between fittings and electrical equipment, install nipples such that no threads are exposed.

4. All conduit bodies and fittings shall be compatible in the environment installed.

5. Seal fittings in explosion-proof areas where required in accordance with the NEC.

6. The use of two (2) locknuts and a grounding bushing will be required at all conduit terminations where hub type fittings are not required.

7. Provide weatherproof insulated throat Meyers hubs on all conduit entries to boxes and devices without integral hubs.

S. Expansion Fittings: Install Expansion fittings in conduit runs wherever conduit crosses structural expansion joints, wherever conduits are attached between the two (2) separate structures, and wherever a conduit run is 100 feet or more in a single straight length.

T. Grounding Bushings: Install grounding bushings wherever conduits enter equipment or enclosures without integral hubs. All grounding bushings within an enclosure or piece of equipment shall be bonded together with a ground cable.

U. Support conduit using lay-in adjustable hangers, clevis hangers, and split hangers.

1. Group related conduits and support using conduit rack. Provide space on each rack for 25 percent additional conduits.

2. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.

3. Do not attach conduit to ceiling support wires.

4. Arrange conduit to maintain headroom and present neat appearance.

5. Avoid moisture traps; provide junction box with drain fitting or breather at low points in conduit system.

V. Conduits for submersible pump seal leak and motor overtemperature control wires shall be installed in separate conduits than the power conductors for the pump.

W. Accurately record actual routing of all conduits.

X. Do not use dissimilar strap or clamp support. Provide dielectric tape, fittings, straps, and bushings where dissimilar metals are used.

Y. Where fittings for liquid-tight flexible conduit are brought into an enclosure with a knockout, a gasket assembly, consisting of one piece "O" ring, with a BUNA-R sealing material, Series 5200, shall be installed on outside of box. Fittings shall be made of either steel or malleable iron only, and shall have insulated throats or insulated bushings.

Z. A copper ground wire sized in accordance with NEC shall be installed on the inside of the conduit as a jumper around flexible conduit to assure a continuity of ground.

AA. Install a copper jumper across all flexible conduit including motors, fixtures, controls and other utilization equipment.

BB. Install liquid-tight flexible conduit in such a manner as to prevent liquids from running on surface toward fittings.

CC. Allow sufficient slack conduit to reduce the effect of vibration.

DD. Complete all conduit systems before pulling the conductors.

EE. Support in accordance with requirements of National Electric Code.

CONDUIT SCHEDULE (UNLESS SHOWN OTHERWISE)	
ENVIRONMENT/LOCATION	**CONDUIT SYSTEM TYPE**
Embedded in Concrete or Masonry	RGS
PSEG Secondary Service	RGS
Class I, Group D locations	PVC coated RGS
Exposed on Process Tankage	PVC coated RGS
All other exposed not Class I, Group D	RGS

FF. All threaded conduits and fittings shall have KOPR-SHIELD compound applied to all threads prior to assembly.

3.02 – INSTALLATION OF BOXES

A. General:

1. Mount all boxes rigidly and securely to the building structure or to supporting devices, which are rigidly and securely supported to the building structure. Boxes shall not be supported from suspended ceiling systems.

2. All boxes and supports, regardless of the location, shall be fastened with 304 stainless steel bolts and expansion shields on concrete or brick, with 304 stainless steel toggle bolts on hollow masonry units, and with stainless steel machine screws or welded studs on steelwork.

3. Mount boxes with sides parallel or perpendicular to walls or equipment, such that the box is installed in a neat and professional manner.

4. Install all boxes such that wiring within them is accessible.

5. Install blanking devices or threaded plugs in all unused holes.

6. Install all boxes concealed in finished walls when possible.

7. Set boxes so that front edges are flush with finished surfaces

B. Locations and Sizes:

1. Box locations shown on the Contract Drawings are approximate. Box sizes shall be as dimensioned on the Contract Drawings, or, if not specifically dimensioned, as required by the NEC. Additional boxes required but not specifically shown shall be furnished and installed under this Contract.

2. The equivalent number of 90 degree bends in a single conduit run is limited to the following:

   a. Runs in excess of 300 feet: 0

   b. Runs of 300 feet to 201 feet : 1

   c. Runs of 200 feet to 101 feet : 2

   d. Runs of 100 feet and less: 3

3. Boxes shall be furnished and installed wherever necessary to satisfy the above criteria.

4. All box sizes and locations shall be confirmed by the Contractor with the Engineer prior to installation.

C. Grounding:

1. All boxes shall be grounded in accordance with NEC requirements.

2. The use of two (2) locknuts and a grounding bushing will be required at all conduit terminations where hub type fittings are not required. Conduit grounding bushings within boxes shall be bonded together with jumper cables where box size or number of conduits warrants their use per NEC requirements.

D. Terminal Boxes: In addition to all box requirements described above, terminal boxes shall have terminal blocks for boxes that contain control or signal wires which must be interconnected. Approximately 20 percent space terminals shall be provided (minimum of two [2]). Terminals shall be lettered or numbered to conform to the wiring diagrams.

BOX & TROUGH SCHEDULE

A. <u>Box Classification:</u>

1. General Purpose: Masonry walls.

2. Cast: Masonry walls.

3. NEMA 1: The following areas fall under this classification: Control Building.

4. NEMA 12: Not used.

5. NEMA 4: Not used.

6. NEMA 4X Stainless Steel: Used in areas subject to weather, sunlight, humidity, moisture, or other areas defined by the Engineer. The following areas fall under this classification: All other interior and exterior locations, not specifically specified elsewhere in this paragraph.

7. NEMA 4X Fiberglass: Not Used.

8. PVC Coated Boxes: Where PVC is preferred over stainless steel by the Engineer. The following area falls under this classification: Polymer room and thickener room in sludge building.

B. Identification: All pull boxes, junction boxes, and terminal boxes shall have a nameplate attached, which properly identifies the box. Nameplates shall be installed as specified in Section 260553 – Identification for Electrical Systems.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Work of this Section includes the following:

1. Nameplates and labels
2. Wire and cable markers
3. Conduit markers
4. Underground warning tape
5. Reflective tape

B. The Prime Electrical Contractor shall install conduit markers immediately after it has been installed. Conduit markers shall be installed on all exposed and buried conduits. Conduits in duct banks or embedded in concrete shall not be marked.

C. Wire and cable markers shall be installed immediately after the wire has been pulled through the conduit and before termination.

D. The conduit and wire installation shall not be considered complete until the conduit and wire/cable has been properly identified. An amount equal to 50% of the scheduled value for the conduit and/or cable installation shall be withheld until the identification has been installed.

E. Furnish and install nameplates for equipment furnished and installed as work of this Contract.

F. Reflective tape shall be installed on all exterior junction boxes and pull boxes. A 6-inch long strip of tape shall be installed on the front door of the box. The strip shall be centered on the front door, and placed in the vertical position.

1.02 - REFERENCES

A. ANSI/NFPA 70 - National Electrical Code

B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

1.03 - SUBMITTALS

A. Submit under provisions of Section 013300 - Submittals.

B. Product Data: Provide catalog data for nameplates, labels, markers, and warning tape.

C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by Underwriters Laboratories, Inc. Include instructions for storage, handling, protection, examination, preparation and installation of product.

PART 2 - PRODUCTS

2.01 - HIGH VOLTAGE SIGNS

A. High voltage signs shall be 20 gauge steel with baked enamel finish. Finish shall be industry standard of red, white and black graphics. Signs shall be 10 inches by 14 inches with the following exceptions:

1. Use 7-inch by 10-inch signs where this is the largest size that can be applied.

2. Use 14-inch by 20-inch signs where needed for adequate vision.

B. High voltage signs shall read; "DANGER - HIGH VOLTAGE".

C. High voltage sign mounting screws shall be stainless steel.

2.02 - EQUIPMENT NAMEPLATES

A. Electrical equipment nameplates shall be laminated plastic with black letters on a white background. Nameplates shall be 2-inches by 6-inches, unless a larger size is required to adequately display the required information. The Engineer shall approve all nameplates. Nameplates for electrical equipment such as MCC's, panelboards, switchgears, etc. shall have the following information:

1. Equipment name and number

2. Voltage

3. Phases and number of wires

B. Typical nameplate is as follows: "MCC No. 2A - 480Y/277V - 3 PH, 4W"

C. All control pullboxes and junction boxes shall have a nameplate similar to the following: "SBR TANKS CONTROL CONDUITS PULL STATION”

D. Nameplates for all electrical equipment shall have similar and additional information as required for proper identification.

E. Nameplate mounting screws shall be stainless steel. Adhesives shall not be used.

2.03 - WIRE MARKERS

A. Manufacturers:

1. 3M ELECTRICAL SPECIALTY DIV., Product Scotch Code.

2. THOMAS & BETTS CORP., Product E-Z Code.

B. Description: Epoxy film tape type wire markers.

C. Locations: Each conductor at panelboards, auxiliary gutters, pull boxes, outlet and junction boxes, circuit breakers and each load connection.

D. The Contractor shall tag all wires as follows:

1. Power and Lighting Circuits: Branch circuit or feeder number as indicated on the Contract Drawings.

2. Control Circuits: Control wire number as indicated on the interconnection point-to-point diagrams required to be furnished as work of Section 260000 –Electrical.

2.04 - CONDUIT MARKERS

A. Manufacturers: THOMAS & BETTS CORP or equal.

B. Description: Self-sticking vinyl; black letters on orange background.

C. Location: Furnish markers for each conduit longer than 6 feet (1.8 m).

D. Spacing: 20 feet (6 m) on center.

2.05 – UNDERGROUND WARNING TAPE

A. Metal detectable type with APWA color-coding. Heavy-duty polyethylene with a minimum total thickness of 5-mil. Tape resistant to alkalis, acids and other destructive elements.

B. Tape shall be 6 inches wide with the words "Caution – Electric Line Buried Below" repeated every 16-36 inches.

C. For buried telephone lines, orange in color, minimum 6 inches wide with the words "Caution – Telephone Line Buried Below" repeated every 16-36 inches.

D. Conform to OSHA regulation 1926.956 (c)(1).

E. Manufacturers: Lab Safety Supply

2.06 – REFLECTIVE STRIPED TAPE

A. Vinyl plastic backing, yellow/black, 2-inches wide.

B. Manufacturers: Lab Safety Supply

PART 3 - EXECUTION

3.01 - PREPARATION

A. Degrease and clean surfaces to receive nameplates and labels.

3.02 - APPLICATION

A. Install all nameplate and labels parallel to equipment lines. Center labels on door front.

B. Secure nameplates to all equipment using stainless steel screws.

C. Secure nameplate to inside surface of door on every panelboard that is recessed in finished locations.

D. Apply conduit markers at 20-foot (6 m) intervals.

E. Install underground warning tape 6 inches below grade located above every underground conduit, ductbank, and direct burial line.

F. Install high voltage sign at every device equal to or greater than 480 volts as directed by the Engineer.

3.03 - ELECTRICAL EQUIPMENT IDENTIFICATION

A. The Contractor shall identify every existing circuit in all existing and new distribution panels, switchboards and disconnect switches.

B. Label all circuits identifying the load served including all individual circuit breakers.

C. Label all new and existing circuit breakers and switches used for new and existing feeder and branch circuits. Label all equipment as “spare” for removed electrical equipment.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Surge protection device.

1.02 - STANDARDS

A. The specified suppressor shall be designed, manufactured, tested and installed in compliance with:

1. American National Standards Institute and Institute of Electrical and Electronic Engineers (ANSI/IEEE C62.11, C62.41 and C62.45).

2. Federal Information Processing Standards Publication 94 (FIP PUB 94).

3. National Electrical Manufacturer Association (NEMA LS-1).

4. National Fire Protection Association (NFPA 20, 70, 75 and 78).

5. Underwriters Laboratories (UL 1449).

6. CAN/C22.2 No. 8-M1986; CSA Electrical Certification Notice No. 516.

7. The system individual units shall be UL listed under UL 1449 Standard for Transient Voltage Surge Suppressions (TVSS) and the surge ratings shall be permanently affixed to the TVSS.

PART 2 - PRODUCTS

2.01 - MANUFACTURERS

A. MCG ELECTRONICS, INC., Deer Park, New York.

B. Approved equal.

2.02 - MANUFACTURED UNITS

A. Surge suppression shall be series Surge Free Model No. SF402XT.

2.03 – SYSTEM REQUIREMENTS

A. The specified surge protective device shall provide effective high energy surge diversion for application ANSI/IEEE C62.41-1991 Location Category C3 environments. Testing per ANSI/IEEE

C62.45-1992 using ANSI/IEEE C62.41 Category C3 waveforms and amplitudes. UL 1449 listing. The specified surge protective device shall provide:

1. 400,000 transient amps, per phase of surge protection.

2. Peak surge current ratings must be independently tested and verified.

3. All mode protection, L-N, L-G, L-L, N-G.

4. Integral disconnect with safety dead front.

5. Each MOV protected from over-current, thermal overload and monitored individually.

6. Self diagnostics with comprehensive LED bar graph on front panel showing the exact % level of protection available.

7. Audible fault alarm with silence switch.

8. Event counter, indication of time and date of last event (battery backup for time and date).

9. Remote alarm relay contacts (surge protected), Form C.

10. Micro-Z low impedance installation cable.

11. Twenty year warranty on entire system.

12. LIFETIME “NO NONSENSE” WARRANTY ON FIELD REPLACEABLE POWER MODULES AND FUSES.

B. Environmental Requirements:

1. Magnetic Fields: Connection shall be made using low impedance Micro-Z cabling provided with the suppressor for maximum magnetic field cancellation. Unit shall be shunt-installed with no series connected elements.

2. Operating Temperature: Operating temperature range shall be –40° to +71° C (-40° to +160° F).

3. Storage Temperature: Storage temperature range shall be –40° to +85° C.

4. Relative Humidity: Operation shall be reliable in an environment with 0% to 95% non-condensing relative humidity.

5. Operating Altitude: The system shall be capable of operation up to an altitude of 13,000 feet above sea level.

6. Operating Voltage: Maximum continuous operating voltage shall be no less than 115% and no greater than 140% of the nominal rated line voltage.

7. Power Frequency: The power frequency range shall be 47 to 440 Hertz.

C. Electrical Requirements:

1. Unit Operating Voltage Requirements:

Voltage	Description	Joules 8/20us	Vpeak L-N 20kV, 10kA	Vpeak L-N 6kV, 500A
277/480 VAC	3phase, 4W + gnd, wye	93600	1096V	1000V

2. Unit shall be installed in parallel with the protected equipment. No series connected protective elements shall be used.

3. The maximum surge current capacity per phase of the specified system, based on the standard IEEE 8/20 microsecond waveform, shall be at least: 1 Event at 400 kA. The surge life (8/20us) shall be at least 10,000 @ 15 kA occurrences. The transient suppression capability shall be bi-directional and suppress both positive and negative impulses.

4. The suppressor shall be capable of interrupting a 200 kA, short circuit current delivered from the AC power line. The interrupt capability must be confirmed and documented by a recognized independent testing laboratory.

5. The suppressor shall be designed so as to minimize the internal surge path impedance. Direct point-to-point internal wiring is inherently inductive and not acceptable. Connection to the power service shall be constructed for best performance.

6. Equipment shall be as manufactured by MCG Electronics, Inc.: Model: SF400XT-Family or engineering department approved equal with supporting test data.

D. Protection System Components:

1. Replaceable modules: The suppressor shall be constructed using field replaceable protection modules. The suppressor shall have individually fused and monitored 40mm Metal Oxide Varistors (MOV's), including neutral to ground protection mode. Each module

will provide five times (5X) redundant protection, with three modules per each phase and five fuses per module. The status of each module shall be locally monitored with a green LED that becomes red in a fault condition. The transient Ipeak rating of the fuse shall be coordinated with the Ipeak handling capability of the MOV so that the surge path capability is not limited by the series fusing. In addition, each MOV shall incorporate a thermal disconnect means to remove a shorted MOV safely from the protection system.

2. Self-Diagnostics: Red, green and yellow solid state LED indicators shall be provided on the hinged front cover to indicate protection status. An illuminated green LED indicates power is present at the protector on all phases, and an illuminated red LED shall indicate that one or more of the modules have reduced protection. An illuminated yellow LED shall indicate a suppression event. Both front panel and internal LEDs are required to provide power and fault indications in the event of even the loss of a single fuse or MOV. Relay operation shall be in a fail-safe operating mode (i.e., continuously energized so that power failure, reduced protection, or a break in the remote monitoring line will cause a fault indication at the remote monitor).

3. Remote Alarm Capability: Relay alarm contacts shall be provided for remote alarm monitoring capability of unit status. Form C normally open and normally closed contacts shall be provided with voltage and current limiting protection.

4. Audible Alarm: The specified system shall be equipped with an audible alarm which shall be activated when any one or more of the modules has a reduced protection condition. A mute option shall be provided for the audible alarm.

5. Advanced Diagnostic LED Display: A front panel, microprocessor controlled LED display, in the form of a bar graph, will indicate the protection status of each MOV on each phase including neutral to ground. A event counter will display number of suppressed transient events with a time and date stamp.

6. Integral Disconnect: Unit shall be provided with dead front disconnect to remove power from protector for maintenance access. The disconnect should not be accessed from the front panel unless the unit meets the minimum clamp voltage requirements.

7. NEMA 12 Enclosure: 14 gauge steel, with stainless steel hardware.

PART 3 – EXECUTION

3.01 – INSTALLATION AND MAINTENANCE

A. The unit shall be factory installed in the Outdoor Switchgear by the Switchgear manufacturer, in accordance with the manufacturer's printed instruction to maintain warranty. All local and national codes must be observed.

B. A 3-pole disconnect shall be provided to insure safety of maintenance personnel.

3.02 – TWENTY YEAR WARRANTY

A. Manufacturer to provide twenty (20) year warranty to cover repair or replacement with a new device. Manufacturer to provide no cost replacement of fused protection modules for the life of the suppressor.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Dry type transformers.

1.02 - REFERENCES

A. ANSI/NFPA 70 - National Electric Code.

B. NEMA ST20 - Dry Type Transformers for General Applications.

1.03 - SUBMITTALS

A. Submit product data under provisions of Section 013300.

B. Provide outline and support point dimensions of enclosures and accessories, unit weight, voltage, KVA and impedance ratings and characteristics, tap configurations, insulation system type and rated temperature rise.

1.04 - REGULATORY REQUIREMENTS

A. Conform to requirements of NFPA 70.

B. Furnish products listed and classified by Underwriters Laboratories, Inc.

PART 2 - PRODUCTS

2.01 - MANUFACTURERS

A. Dry type transformers shall be manufactured by General Electric Type QL.

B. Approved equal.

2.02 - EQUIPMENT REQUIREMENTS

A. Three-phase and Single-phase general purpose dry type transformers be self-cooled, with ratings (KVA) as indicated on the drawings.

B. Copper windings.

C. Sound levels not to exceed the following:

1. 0-9 KVA: 40 db.

2. 10-50 KVA: 45 db.

3. 51-150 KVA: 50 db.

4. 151-300 KVA: 55 db.

5. 301-500 KVA: 60 db.

6. 501-700 KVA: 62 db.

D. Three-phase transformers rated above 15 KVA to be insulated with UL listed Class 220 rated materials; and have a maximum average full load temperature rise of 115 degrees C.

E. Transformers to have voltage ratios as indicated on drawings. Transformers between 15 KVA and 300 KVA to be provided with six 2-1/2% full capacity taps, two above and four below primary rated voltage.

F. Nameplate: Include transformer connection data.

PART 3 - EXECUTION

3.01 - INSTALLATION

A. Install transformers in accordance with manufacturer's recommendations.

B. Provide both primary and secondary protection as shown on drawings.

C. Set transformer plumb and level.

D. Provide grounding and bonding in accordance with provisions of Section 260526.

E. Transformers shall be factory installed in the Motor Control Center by the manufacturer of Motor Control Center where indicated on drawings.

3.02 - FIELD QUALITY CONTROL

A. Check for damage and tight connections prior to energizing transformer.

B. Measure primary and secondary voltage and make appropriate tap adjustments.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Distribution panel boards.

1.02 - REFERENCES

A. ANSI/NFPA 70 - National Electric Code.

B. NECA Standard of Installation.

C. NEMA AB1 - Molded Case Circuit Breakers.

D. NEMA PB1 - Panel Boards.

E. NEMA PB1.1 - Instructions for Safe Installation, Operation and Maintenance of Panel Boards Rated 600 Volts or Less.

F. NEMA ICS2 - Industrial Control Devices, Controllers and Assemblies.

G. NEMA KS1 - Enclosed Switches.

1.03 - SUBMITTALS

A. Submit product data under provisions of Section 013300.

B. Indicate outline and support point dimensions, voltage, main bus ampacity, integrated short circuit ampere rating, and circuit breaker arrangement and sizes.

PART 2 - PRODUCTS

2.01 - MANUFACTURERS

A. Panel Boards shall be manufactured by Siemens.

B. Approved equal.

2.02 - PANELBOARD REQUIREMENTS

A. Provide panel boards of circuit breaker, dead-front safety type, UL labeled, and meeting all applicable requirements of the National Electrical Manufacturers Association.

B. Provide panel boards with lugs (both main lugs and branch circuit lugs) suitable and UL approved for both aluminum and copper conductors.

C. Provide electrically isolated neutral bars.

D. Provide separate ground bars complete with lugs or connectors on bar.

E. Provide key operated door lock.

F. Provide panel boards with sequence phased bus bars or distributed phase bussing for voltage and phase as indicated on drawings.

G. Refer to drawings for numbers of branch circuits, their ratings, number of poles, arrangements, etc.

H. Provide typed circuit directory cards.

I. Provide front filler plates for unused breaker knockouts.

J. Refer to drawings for Ratings and Features.

K. All bus bars, including ground bars shall be tin-plated copper.

PART 3 - EXECUTION

3.01 - INSTALLATION

A. Ground separate ground bars to panel boxes and to the main service entrance ground bus with a code-sized grounding conductor installed in the same conduit as the phase and neutral conductors under provisions of Section 260526.

B. Install all circuits using a common neutral bus bay in accordance with the National Electric Code. Balance all circuits to achieve not greater than 10% unbalanced neutral current in panel feeders.

C. Provide six circuit breaker handle lock-on devices for each lighting and miscellaneous power panel board for installation by the contractor on circuits as directed by the Engineer to prevent unauthorized personnel from turning off circuits to controls, unit heaters, autodial alarm system, etc. Provide spare lock-on devices over to the Engineer.

D. Install panel boards in accordance with NEMA PB 1.1.

E. Install panel boards plumb.

F. Height: 6 feet (2 m) to top of panel board.

G. Provide typed circuit directory for each branch circuit panel board. HANDWRITTEN CIRCUIT DIRECTORY CARDS WILL NOT BE ACCEPTED. Revise directory to reflect circuiting changes required to balance phase loads.

H. Provide engraved plastic nameplates under the provisions of Section 260553.

I. Panel Boards shall be factory installed in the motor control center by the manufacturer of Motor Control Center where indicated on drawings.

3.02 - FIELD QUALITY CONTROL

A. Maintain proper phasing for multi-wire branch circuits.

B. Visual and Mechanical Inspection: Inspect for physical damage, proper alignment, anchorage, and grounding. Check proper installation and tightness of connections for circuit breakers, fusible switches, and fuses.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Main Switchboard - Furnish and install the Service Entrance switchboard(s) as herein specified and shown on the associated electrical drawings.

1.02 - REFERENCES

The switchboard(s) and overcurrent protection devices referenced herein are designed and manufactured according to the following appropriate specifications.

A. ANSI/NFPA 70 - National Electrical Code (NEC).

B. ANSI/IEEE C12.16 - Solid State Electricity Metering.

C. ANSI C57.13 - Instrument Transformers.

D. NEMA AB 1 - Molded Case Circuit Breakers and Molded Case Switches.

E. NEMA PB 2 - Deadfront Distribution Switchboards, File E8681

G. NEMA PB 2.1 - Proper Handling, Installation, Operation and Maintenance of Deadfront Switchboards Rated 600 Volts or Less.

H. NEMA PB 2.2 - Application Guide for Ground Fault Protective Devices for Equipment.

I. UL 50 - Cabinets and Boxes.

J. UL 98 - Enclosed and Dead Front Switches.

K. UL 489 - Molded Case Circuit Breakers.

L. UL 891 - Dead-Front Switchboards.

M. UL 943 - Ground Fault Circuit Interrupters.

N Federal Specification W-C-375B/Gen - Circuit Breakers, Molded Case, Branch Circuit and Service.

1.03 - SUBMITTALS

A. Shop Drawings shall indicate front and side enclosure elevations with overall dimensions shown; conduit entrance locations and requirements; nameplate legends; one-line diagrams; equipment schedule; and switchboard instrument details.

1.04 - QUALIFICATIONS

A. To be considered for approval, a manufacturer shall have specialized in the manufacturing and assembly of switchboards for at least fifty (50) years.

B. Furnish products listed by Underwriters Laboratories Incorporated and in accordance with standards listed in Article 1.03 - References.

C. The manufacturing facility shall be registered by Underwriters Laboratories Inc. to the International Organization for Standardization ISO 9002 Series Standards for quality.

1.05 - DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect, and handle products in conformance with manufacturer's recommended practices as outlined in applicable Installation and Maintenance Manuals.

B. Each switchboard section shall be delivered in individual shipping splits for ease of handling. They shall be individually wrapped for protection and mounted on shipping skids.

C. Inspect and report concealed damage to carrier within their required time period.

D. Store in a clean, dry space. Maintain factory protection and/or provide an additional heavy canvas or heavy plastic cover to protect structure from dirt, water, construction debris, and traffic. Where applicable, provide adequate heating within enclosures to prevent condensation.

E. Handle in accordance with NEMA PB 2.1 and manufacturer's written instructions. Lift only by lifting means provided for this express purpose. Handle carefully to avoid damage to switchboard internal components, enclosure, and finish.

1.06 - ENVIRONMENTAL REQUIREMENTS

A. Conform to NEMA PB 2 service conditions during and after installation of switchboards.

1.07 - MAINTENANCE MATERIALS

A. Provide two (2) sets of installation and maintenance instructions with each switchboard. Instructions are to be easily identified and affixed within the incoming or main section of the line-up.

1.08 - WARRANTY

A. Manufacturer shall warrant equipment to be free from defects in materials and workmanship for the lesser of one (1) year from date of final payment.

PART 2 - PRODUCTS

2.01 - MANUFACTURERS

A. Outdoor Switchgear shall be Siemens SB3 or approved equal.

2.02 - SWITCHBOARD - GENERAL

A. Utility Metering Compartment: The utility current transformer compartment shall comply with the local utility construction specifications.

B. Short Circuit Current Rating: Switchboards shall be rated with a minimum short circuit current rating of 100k rms symmetrical amperes at 480 VAC maximum.

C. Future Provisions: All unused spaces provided, unless otherwise specified, shall be fully equipped for future devices, including all appropriate connectors and mounting hardware.

D. Enclosure: 3R - Rain tight with Dead-Front Cover.

1. Sections shall be aligned front and rear.
2. Removable steel base channels (1.5 inch floor sills) shall be bolted to the frame to rigidly support the entire shipping section for moving on rollers and floor mounting.
3. The switchboard enclosure shall be painted on all exterior surfaces. The paint finish shall be a medium gray, ANSI #61, applied by the electro-deposition process over an iron phosphate pre-treatment.
4. All front covers shall be screw removable with a single tool and all doors shall be hinged with removable hinge pins.
5. Top and bottom conduit areas shall be clearly indicated on shop drawings.
6. For multiple bay lineups, include continuous ground bus through the switchgear assembly, securely connected to the steel frame of each cubicle.
7. Outdoor units shall be designed with a sloped, drip-proof roof. The cubicles must have a door-in-door construction. The outer door shall be a bulkhead type door with three-point

latching and vault type handle with provisions for padlocking. Cubicles are to be designed to allow front and rear access and shall not require the routing of line side or load side connections in front of the switch/fuse compartment.

8. The metal-enclosed switchgear shall be fully assembled, inspected and tested at the factory prior to shipment. Large line-ups shall be split to permit normal shipping and handling as well as for ease of rejoining at the job site.

9. Space Heaters: For 120 VAC internal source, sized by the manufacturer, with thermostats.

E. Nameplates: Provide 1 inch high x 3 inches engraved laminated (Gravoply) nameplates for each device. Furnish black letters on a white background for all voltages.

F. Bus Composition: Shall be plated copper. Plating shall be applied continuously to all bus work. The switchboard bussing shall be of sufficient cross-sectional area to meet UL Standard 891 temperature rise requirements. The phase and neutral through-bus shall have an ampacity as shown on the plans. For 4-wire systems, the neutral shall be of equivalent ampacity as the phase bus bar. Tapered bus is not acceptable. Full provisions for the addition of future sections shall be provided. Bussing shall include all necessary hardware to accommodate splicing for future additions.

G. Ground Bus: Sized per NFPA70 and UL 891 Tables 25.1 and 25.2 and shall extend the entire length of the switchboard. Provisions for the addition of future sections shall be provided.

H. Key Interlocks: Kirk-key interlock.

2.02A - SWITCHBOARD - INCOMING MAIN SECTION DEVICES

A. Main Circuit Breaker

1. Thermal magnetic molded case circuit breaker(s) through 800A

a. Molded case circuit breakers shall have integral thermal and instantaneous magnetic trip in each pole.

b. Circuit protective devices shall be Siemens molded case circuit breaker(s). Circuit breaker(s) shall be true current limiting. Ampere ratings shall be as shown on the drawings.

2.02B - SWITCHBOARD - DISTRIBUTION SECTION DEVICES

A. Group mounted circuit breakers through 400A

1. Circuit breaker(s) shall be group mounted plug-on with mechanical restraint on a common pan or rail assembly.

2. The interior shall have three flat bus bars stacked and aligned vertically with glass reinforced polyester insulators laminated between phases. The molded polyester insulators shall support and provide phase isolation to the entire length of bus.

3. Circuit breaker(s) equipped with line terminal jaws shall not require additional external mounting hardware. Circuit breaker(s) shall be held in mounted position by a self-contained bracket secured to the mounting pan by fasteners. Circuit breaker(s) of different frame sizes shall be capable of being mounted across from each other.

4. Line-side circuit breaker connections are to be jaw type.

5. All unused spaces provided, unless otherwise specified, shall be fully equipped for future devices, including all appropriate connectors and mounting hardware.

   (Select Electronic trip 100%, Electronic trip 80% or Thermal Magnetic)

6. Thermal magnetic molded case circuit breakers through 400A

   a. Molded case circuit breakers shall have integral thermal and instantaneous magnetic trip in each pole.

   b. Circuit protective devices shall be Siemens molded case circuit breaker(s). Circuit breaker(s) shall be true current limiting. Ampere ratings shall be as shown on the drawings.

B. Individually Mounted circuit breakers greater than 400A

1. Thermal magnetic molded case circuit breaker(s) through 400A

   a. Molded case circuit breakers shall have integral thermal and instantaneous magnetic trip in each pole.

   b. Circuit protective devices shall be Siemens molded case circuit breaker(s). Circuit breaker(s) shall be true current limiting. Ampere ratings shall be as shown on the drawings.

2.03 - POWER MONITOR

A. Manufacturer: ACCUENERGY

1. Model No: ACUVIM II Series.

2. 480 volt.

B. Quantity: Two (2) required, 480V, 3 phase 4W.

C. Provide current and potential transformers for all three phases and neutral for digital ammeters/voltmeters.

D. The power monitor shall incorporate a vacuum display and keypad to allow the user to read the following parameters:

1. Voltage V1, V2, V3.

2. Current I1, I2, I3, In, Iavg.

3. Power P1, P2, P3, Psum.

4. Reactive Power Q1, Q2, Q3, Qsum.

5. Apparent Power S1, S2, S3, Ssum.

6. Frequency.

7. Power Factor.

8. Energy.

9. Reactive Energy.

10. Apparent Energy.

11. Demand.

12. Load Features.

13. Four Quadrant Powers.

14. Power Quality.

15. Voltage Harmonics.

16. Current Harmonics.

17. Voltage Crest Factor.

18. Current K Factor.

19. Voltage Unbalance Factor.

20. Current Unbalance Factor.

21. Max/Min Statistics with Time Stamps.

E. Power monitor shall have the following features:

1. Alarms

2. I/O Option Module

3. Anti-tampering Seal

4. Data Logging (8mb)

5. Automatic Frequency adaption.

6. Power Quality Event Logging.

7. Communication

a. Modbus RTU Protocol and DNP 3.0 via RS485

b. Ethernet (Modbus TCP, HTTP, SMTP, SNTP)

c. Profibus DP

d. BACnet IP, BACnet MS/TP

e. Dual RS485 Communication Ports

8. 0.2% accuracy.

F. Power monitors shall be factory installed on the Switchboard enclosure doors as indicated on drawings.

1. The power monitor shall be installed in ATS cabinet and shall monitor Utility and Emergency.

2.06 - ACCESSORIES

A. For switchboards installed outdoor only, provide thermostatically-controlled electric heaters in each section. [Provide terminals for separate source connection of heater power circuit. Voltage Rating: 120V (Provide control power transformer with the total VA rating of the electric heaters in the switchboard.)

PART 3 - EXECUTION

3.01 - INSPECTION

A. Examine area to receive switchboard to provide adequate clearance for switchboard installation.

B. Check that concrete pads are level and free of irregularities.

C. Start work only after unsatisfactory conditions are corrected.

3.02 - INSTALLATION

A. Install switchboard in accordance with manufacturer's written guidelines, the NEC, and local codes.

3.03 - FIELD QUALITY CONTROL

A. Inspect completed installation for physical damage, proper alignment, anchorage, and grounding.

B. Measure, using a Megger, the insulation resistance of each bus section phase-to-phase and phase-to-ground for one minute each, at minimum test voltage of 1000 VDC; minimum acceptable value for insulation resistance is 1 megohms. NOTE: Refer to manufacturer's literature for specific testing procedures.

C. Check tightness of accessible bolted bus joints using calibrated torque wrench per manufacturer's recommended torque values.

D. Physically test key interlock systems to check for proper functionality.

E. Test ground fault systems by operating push-to-test button.

3.04 - ADJUSTING

A. Adjust all operating mechanisms for free mechanical movement per manufacturers specifications.

B. Tighten bolted bus connections in accordance with manufacturer's instructions.

C. Adjust circuit breaker trip and time delay settings to values indicated and as instructed by the Architect/Engineer.

3.05 - CLEANING

A. Touch up scratched or marred surfaces to match original finish.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Under this Section, the Contractor shall provide all labor, equipment and material necessary to furnish, install and test wiring devices, complete, in place, as shown on the Contract Drawings, specified herein and approved by the Engineer.

B. In general, the wiring devices included under this Section shall include, but not be limited to receptacles and lighting switches.

1.02 - REFERENCES

A. ANSI/NFPA 70 - National Electric Code.

B. NEMA WD1 - General Purpose Wiring Devices.

1.03 - SUBMITTALS

A. Submit product data under provisions of Section 013300.

B. Provide manufacturer's catalog information showing dimensions, colors and configuration.

PART 2 - PRODUCTS

2.01 – SWITCHES

A. Due to the large number of possible combinations of devices available, only the most frequently used devices are detailed in the following sections. Where devices are required which are not specified here, the device shall be specified on the Contract Drawings.

B. Devices shall be furnished with all necessary auxiliary items, as required, for a proper installation and operation. This shall include items such as screws, gaskets, protective boots, explosion proof seals, etc. These items shall be furnished and installed if specified or not.

2.02 - RECEPTACLES – GENERAL PURPOSE

A. Receptacles shall be heavy duty, specification grade, duplex type, 125V, 20A, NEMA WD-1, 2 poles and 3 wires grounding type, unless shown otherwise on the Contract Drawings.

B. Receptacles shall be back and side wired, have a green ground screw terminal, automatic ground clip, fully enclosed in composition case and nylon face. Receptacles shall also have a wrap around bridge with integral ground contacts and heat resistant base for dimensional stability.

C. Receptacles shall be brown unless shown otherwise on the Contract Drawings. Where brown receptacles are not available for a particular type, the Contractor shall receive Engineer's approval for alternate color.

D. All receptacles shall be corrosion resistant, have an isolated ground, and ground fault interrupter.

E. The receptacles shall be equal to Hubbell, "5362 Series", or approved equal.

F. Receptacles for winches shall be equal to Hubbell "9530 Series" 30A, 250V.

G. Specialty receptacles that have either high amperage or voltage rating, or other configuration, shall be as identified on the Contract Drawings.

2.03 - SWITCHES

A. Switches shall be heavy duty, specification grade, toggle type, 120/277V, NEMA WD-1, 20A, single pole, unless shown otherwise on the Contract Drawings.

B. Switches shall be back and side wired, fully enclosed in composition case and shall have rivetless spring contact arm to eliminate stress and weak points. Contacts shall be silver cadmium oxide to eliminate welding. Switches shall have a #8 brass, green ground screw and stainless steel automatic grounding clip.

C. Switches shall be brown unless shown otherwise on the Contract Drawings. Where brown switches are not available for a particular type, Contractor shall receive Engineer approval for alternate color.

D. Where indicated on the Contract Drawings, provide switches that are double pole, 3-way, 4-way, key operated, illuminated, etc.

E. The switches shall be equal to Hubbell, "HBL 1220 Series".

F. Where 15A and 30A switches are shown, they shall be equal to Hubbell, "HBL 1200 Series" and Hubbell, "HBL 3030 Series".

G. Specialty switches with other configurations shall be as identified on the Contract Drawings.

H. Switches - Explosion Proof:

1. Switches shall be 125V, 20A, 120/277V, single pole unless shown otherwise on the Contract Drawings.

2. Switches shall be installed in an aluminum-sealing chamber (when factory sealed) and shall have a malleable iron cover with a front operated handle. The handle shall be lockable in either the "on" or "off" position. The cover shall be compatible with the back box finish, such as epoxy powder coated, as specified in Section 260533.

3. The switch housing shall mount onto an appropriate black box with four (4) stainless steel screws.

4. Where indicated on the Contract Drawings, provide switches that are 2-pole, 3-way or 4-way.

5. The switches shall be equal to Appleton Electric Co., "Types EDS and EFS".

2.04 - DEVICE PLATES - FLUSH MOUNTED

A. Device plates for flush mounted devices shall be smooth metal, 302 stainless steel type. Edges shall be contoured with satin finish. Device plates shall be 0.040 inches thick. Screws shall be stainless steel.

B. Device plate manufacturers and their particular products shall be as follows: General Electric, "93000 Series", Hubbell, "97000 Series".

C. Device plates for surface mounted devices shall be sheet steel, aluminum, or malleable iron for non-corrosive/weatherproof devices, and shall be die cast aluminum or malleable iron, with gasketed covers for corrosive/weatherproof devices.

D. All screws shall be stainless steel.

E. Corrosive/weatherproof device plates shall match the finish of the device box, such as epoxy powder coated, etc., as specified in Section D-1.11, "Boxes".

F. The device plates shall be as manufactured by the following: Appleton Electric Co., "Type FSK", Crouse-Hinds, "Types DS and WLR".

G. Device plates for explosion proof devices are an integral part of the device. The device plate shall be as described in the explosion-proof receptacle and switch paragraphs above.

2.05 – SPECIAL DEVICES

A. Acceptable Manufacturers: Hubbel or approved equal.

B. 20 Amp, 250 Volt, 2 Pole, 3 Wire Watertight Pin & Sleeve Model No. HBL420R9W with mating

plug Model No. HBL420P9W

2.07 – MULTIPIN RECEPTACLE/PLUG

A. Acceptable Manufacturers: Meltric or approved equal.

B. 30 Amp, 600 Volt, 6 Pole + Ground, Pin & Sleeve Mechanical Interlocks Model No. 37-34561-173-4X with mating plug Model No. 37-38561-173-4X.

C. IP54/IP55 Rated

PART 3 - EXECUTION

3.01 - INSTALLATION

A. All wiring device locations are approximate. The Contractor shall determine the proper location of wiring devices based on field conditions and equipment requirements. The Contractor shall review wiring device locations with Engineer.

B. General-purpose receptacles shall be mounted 1'-6" above finished floors (to centerline of receptacle) unless shown otherwise.

C. Lighting switches shall be mounted 4'-6" above finished floor (to centerline of switch) unless shown otherwise.

D. Receptacles and switches shall be mounted at different heights, where necessary, due to field conditions or where required by specific equipment (such as a kitchen stove, water cooler, etc.).

E. Polarity: Properly wire all receptacles so that the hot wire, the neutral wire and the ground wire connect to the proper terminal on all receptacles.

F. Grounding: Install all receptacles in boxes specified under Section 260533 and install a No. 12 green ground wire from device grounding terminal to the outlet box in accordance with the National Electric Code.

3.02 - BOXES

A. Boxes used for the wiring devices shall conform to the requirements of Section 260533.

3.03 - CIRCUITING

A. Wiring devices shall be circuited as shown on the Contract Drawings and shall comply with the requirements of the NEC.

B. All receptacles shall be pigtailed to the supply circuit with #12 AWG wires. Pigtails shall be stranded copper. Pigtail wire colors shall match supply circuit colors. Connection to the supply circuit shall be with UL listed, properly sized wire nuts.

3.04 - DEVICE PLATES

A. Device plates shall be installed wherever a wiring device is installed. All device plates shall be set true and plumb and shall fit tightly against the finished wall surfaces and device boxes.

B. Where multiple devices are mounted in a box, gang plates shall be used. Gang plates shall be one (1) piece. Assembled gang plates shall not be allowed.

C. Where plugs are being furnished with receptacles, the Contractor shall connect the plugs to the flexible cords of equipment as directed by the Engineer. The Contractor shall furnish and install all necessary devices for proper connection of plug to flexible cord.

3.05 - FIELD QUALITY CONTROL

A. Inspect each wiring device for defects. Operate each wall switch with circuit energized and verify proper operation. Verify that each receptacle device is energized. Test each receptacle device for proper polarity. Test each GFCI receptacle device for proper operation.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Disconnect switches.

B. Fuses.

C. Enclosed Circuit Breakers.

1.02 - REFERENCES

A. NEMA KS-1 - Enclosed Switches.

B. ANSI/UL 198C - High Intensity Capacity Fuses, Current Limiting Types.

C. ANSI/UL 198E - Class R Fuses.

D. FS W-S 865 - Switch, Box (Enclosed), Surface Mounted.

E. NEMA AB1 - Molded Case Circuit Breakers.

1.03 - SUBMITTALS

A. Submit product data under provisions of Section 013300.

B. Include outlet drawings with dimensions and equipment ratings for voltage, capacity, horsepower and short circuit current ratings.

1.04 - RELATED SECTION

A. Section 260553 - Identification for Electrical Systems.

1.05 – COORDINATION

A. Coordinate layout and installation of switches, circuit breakers, and components with equipment served and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

PART 2 - PRODUCTS

2.01 - DISCONNECT SWITCHES

A. Disconnect switches shall be GENERAL ELECTRIC, heavy-duty Type TH or approved equal.

B. 75ºC conductor ratings.

C. Ratings: 600VAC

D. Quick-break, quick-make, load interrupter enclosed knife switch with externally operable handle interlocked to prevent opening front cover with switch in ON position. Handle lockable in OFF position.

E. Suitable for use as service entrance equipment.

F. UL listed for Class R 200,000 RMS amps, symmetrical IC.

G. Class R fusing kit.

H. Enclosures: Refer to drawings.

2.02 - FUSES

A. Fuses shall be Littlefuse KLNR Class RK1 or approved equal.

B. Fuses shall be rated for 600 volts AC.

C. Interrupting Rating: 200,000 RMS amps.

2.03 - EXTRA MATERIALS

A. Provide one complete set based on number of poles of spare fuses for each fused disconnect switch. Provide to Owner.

PART 3 - EXECUTION

3.01 - INSTALLATION REQUIREMENTS

A. Install individual wall-mounted switches with tops at uniform height unless otherwise indicated.

B. Temporary Lifting Provisions: Removed temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.

C. Provide switches at locations as indicated on drawings.

D. Refer to disconnect switch schedule on drawings for ampacity ratings, fuse sizes, number of poles and enclosure ratings.

E. Install fuses in fusible devices.

F. Install engraved nameplates on each switch and enclosed circuit breaker identifying the following:

1. Switch designated.

2. Load served.

3. Power origination.

4. Fuse size as indicated on drawings.

3.02 - ADJUSTING

A. Adjust moving parts and operable components to function smoothly, and lubricate as recommended by manufacturer.

END OF SECTION

PART 1 - GENERAL

1.01 – SCOPE OF WORK

A. This Section includes all labor, equipment, and materials necessary to furnish and install solid state reduced voltage motor controllers herein referred to as soft starts.

1.02 - REFERENCES

A. National Electrical Manufacturers Association (NEMA) - No. ICS-1, General Standards for Industrial Control and Systems; No. ICS-2, Industrial Control Devices, Controllers and Assemblies; No. ICS-6, Enclosures for Industrial Control and Systems.

B. ANSI/NFPA 70 - National Electrical Code.

C. Underwriters Laboratories, Inc. (UL) - No. 845, Motor Control Centers, Electric.

1.03 – QUALITY ASSURANCE

A. The soft start motor starter shall be listed by an independent testing laboratory in accordance with Electric Industrial Control Equipment Specification UL508.

B. The soft start shall carry the CE mark for indication of compliance to low voltage and EMC directives.

C. The manufacturer shall be a certified ISP 9002 facility.

D. The equipment shall be manufactured by Siemens/Furnas.

E. The brand name product specified was chosen based on past performance, and constitute a standard for quality and performance for the specific purpose for which it is intended. Products other than that specified will be considered for use under the provisions set forth as follows:

1. The named products constitute the “Base Bid” system. All bidders are advised to provide “Base Bid” pricing since the magnitude of the expenses involved with engineering redesign or modifications may be difficult to determine during the bidding period. Refer to Section 012500 - Product Options regarding product substitutions.

2. If an alternate unit is proposed, the Supplier shall prepare and submit to the Engineer three (3) copies of the “Evaluation Documentation” as listed below. The information shall be in a form that is neat, clear, precise, legible and computer drafted and prepared so as to allow the Engineer to evaluate the proposed equipment. The “Evaluation

Documentation" shall be hand delivered directly to the Engineer at least fifteen (15) calendar days prior to the date set for the bid opening. The pre-bid "Evaluation Documentation" shall consist of the following:

a. Descriptive technical information for the proposed product(s) highlighted to show the differences between the proposed unit(s) and the specified unit(s). Descriptive technical information shall include model numbers, type, sizes, weights, performance data, and materials of construction.

b. List of facilities showing facility name, active contact name and telephone number, years in service, design conditions and parameters and design engineer's name and current telephone number of the company.

c. Equipment cuts showing dimensional data for all enclosure components.

3. The Supplier shall state if he/she is in compliance with each and all Sections of the Specifications. Any variance from the specified equipment shall be listed and a description of each variance must be in letter form. Facsimile transmissions will not be accepted.

4. Failure to submit the above listed information fifteen (15) calendar days prior to the date set for the bid opening shall be cause for non-evaluation and the product will not be considered for the project.

F. The Engineer will issue an addendum of approved products prior to the date set for the bid opening.

G. The acceptance of products prior to the bid date does not relieve the Contractor of his/her responsibility regarding the performance or ability to meet the requirements of the Contract Documents.

H. After Contract execution, the Contractor shall submit shop drawings of the system as specified herein and in compliance with the requirements contained in Section 013300 - Submittals. The Contractor shall remain fully responsible for all design revisions, including but not limited to, the following: structural, mechanical, electrical, and instrumentation because of utilization of substitute equipment. Refer to Section 12500 - Product Options for costs associated with redesigns and/or modifications caused by the use of a substitute product offered by the Contractor.

I. All costs, including other prime contractor, engineering, and legal costs, associated with accommodating alternate equipment shall be borne by the Contractor.

1.04 - WARRANTY

A. The equipment furnished under this Section shall be free of defects in design, workmanship, and materials for a period of one (1) year commencing on the date that the equipment was placed in fault free operation. The manufacturer shall repair or replace a defective component during the warranty period free of all charges, including labor.

1.05 - SUBMITTALS

A. Submit product data under provisions of Section 013300.

B. Technical data including, but not limited to electrical ratings, dimensions, mounting, material, running overcurrent protection, branch circuit overcurrent protection, wiring diagrams and accessories.

C. Operations and Maintenance Manuals prepared in accordance with the requirements contained in Section 017823.

1.06 – RECORD DRAWINGS

A. Comply with the requirements contained in Section 017839.

1.07 – MANUFACTURER SUPPLIED FIELD SERVICES

A. The Supplier shall supply and credit to the Owner the costs for field services as specified in Section 014500 - Quality Control.

B. The following field services shall be provided as a minimum in accordance with the requirements contained in Section 017500 - Starting and Adjusting:

1. Three (3) days totaling three (3) trips once the system has been installed to check the completed installation, make all necessary adjustments, startup the system, provide operations and maintenance instruction to the Owner, and otherwise place the system into permanent, fault free operation as specified in Section 017500 - Starting and Adjusting.

2. Two (2) days, two (2) trips, approximately three (3) and six (6) months after system startup to review the operation with the plant superintendent and the Engineer and to make system adjustments, as necessary. Dates shall be selected by the Owner and may be used by the Owner any time within a one-(1) year period from the date of initial startup.

PART 2 – PRODUCTS

2.01 - MANUFACTURERS

A. Full Voltage Non-Reversing and Reversing (FVNR):

1. SIEMENS, Class 14.

2. Specifically approved equal.

2.02 - MOTOR STARTERS

A. Motor starters shall have the following features:

1. Enclosed type as shown on the Drawings.

2. Circuit breakers within the motor controller enclosures shall have external operating handles with lock-open padlocking provisions and shall indicate the ON and OFF positions.

3. Motor Control Circuits:

a. Shall operate at not more than 120 volts.

b. Shall be grounded except as follows:

1) Where isolated control circuits as shown.

2) Where manufacturers of equipment assemblies recommend that the control circuits be isolated.

c. Incorporate a separate, heavy duty, control transformer within each motor controller enclosure to provide the control voltage for each motor operating over 120 volts.

d. Incorporate overcurrent protection for control power transformers in accordance with NFPA 70.

4. Overload Current Protective Devices:

a. SIEMENS, Solid State Model ESP100 overloads for all contactors including bypass contactors. Provide only SIEMENS thermal overloads on all output contactors for variable speed drives.

b. One for each pole.

c. Manual reset on the door of each motor controller enclosure to reset Motor from any condition which tripped motor, such as high pressure, overload or incomplete valve cycle.

d. Correctly sized for the associated motor's rated full load current.

5. Elapsed non-resettable time meters as indicated on the Drawings. As manufactured by Fourth Dimension, 2-1/2" diameter minimum.

6. Ammeters and 4 position phase selector switch (3-1/2" Square minimum) as manufactured by SIMPSON.

7. Provide current and potential transformers for all three phases for ammeters and voltmeters.

8. Voltmeters and seven position selector switch (3 1/2" square minimum) as manufactured by SIMPSON.

9. Enclosures:

a. Shall be the NEMA Type 1.

b. Where the types of motor controller enclosures are not indicated, they shall be the NEMA types which are the most suitable for the environmental conditions where the motor controllers are being installed.

c. Doors mechanically interlocked to prevent opening unless the breaker or switch within the enclosure is open.

d. Thoroughly clean and paint the enclosures at the factory with manufacturer's prime coat and standard finish.

10. Pilot lights shall be press-to test 30.5 mm Heavy Duty Oiltight pushbuttons.

11. Pushbuttons and selector switches shall be 30.5 mm Heavy Duty Oiltight.

B. Motor controllers incorporated with equipment assemblies shall also be designed for the specific requirements of the assemblies.

2.03 - FULL VOLTAGE STARTERS

A. All Full Voltage Starters shall be NEMA rated for the load it serves.

B. Manufacturers: SIEMENS, Class 14.

PART 3 - EXECUTION

3.01 - INSTALLATION

A. Installation shall be in accordance with NFPA 70 and as shown on the Drawings.

B. All starters shall be factory installed in the Motor Control Center.

3.02 - DESCRIPTION OF CONTROL, VARIABLE SPEED DRIVES / ISOLATION / INPUT / OUTPUT / BYPASS CONTACTORS

A. In the AUTOMATIC position the H-O-A or H-O-R selector switch will provide control power to the pump starter circuit through the isolation, input and output contactors and variable speed drive. The bypass contactor will be electrically and mechanically interlocked via the reversing starter.

B. In the HAND position the H-O-A or H-O-R switch the pump motor shall start and run whether or not the demand is called for based on level controls. Motor shall operate as in above except speed control will be via the speed control potentiometer either Local or Remote.

C. In the Drive position of the Drive-Bypass selector switch, the switch shall provide control power to the HAND-OFF-AUTOMATIC (H-O-A or H-O-R) selector switch and the motor shall be controlled as described in A & B above. In the bypass position the selector switch shall provide control power to the H-O-A or H-O-R selector switch to maintain either automatic or manual pump control with the addition of disabling the isolation, input and output contactor and the variable speed drive from the running/starting sequence. In bypass position, the motor shall start and run via bypass contactor (full voltage starter) which is electrically and mechanically interlocked via the input/output contactors.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Motor Control Centers (MCC's).

B. The MCC's included under this Section shall include, but not be limited to the following: main disconnect device, solid state motor starters and their bypass contactors, variable frequency drives, across the line motor starters, controls, feeder disconnecting devices, control wiring and interlocking.

C. Coordinate the fabrication of the MCC to form a completely prewired system including, but not limited to, the emergency generator transfer switch specified in Section 262916 (MCC) motor starters specified in Section 262913, surge protection specified in Section 261823, generator annunciator specified in Section 263214 (Natural Gas), incoming power section and tie breaker section as shown on the Contract Drawings. Variable frequency drives shall be as specified in Section 262923 and be furnished and installed in the MCC for equipment as specified therein.

D. The MCC shop drawings shall not be submitted until the emergency transfer switch, variable frequency drives and load bank control panel submittals have been found to be in general compliance with the Contract Documents. The MCC shop drawings shall be based on the use of the approved equipment. Coordinate the factory fabrication of the MCC by arranging for the factory wiring and installation of all equipment at the MCC manufacturer's factory.

1.02 - REFERENCES

A. National Electrical Manufacturers Association (NEMA) - No. ICS-1, General Standards for Industrial Control and Systems; No. ICS-2, Industrial Control Devices, Controllers and Assemblies; No. ICS-6, Enclosures for Industrial Control and Systems.

B. ANSI/NFPA 70 - National Electrical Code.

C. ASTM D 178 - Specification for Rubber Insulating Matting.

D. Underwriters Laboratories, Inc. (UL) - No. 845, Motor Control Centers, Electric.

1.03 - SUBMITTALS

A. Submit under provisions of Section 013330:

1. Include electrical ratings, dimensions, mounting, material, running overcurrent protection, branch circuit overcurrent protection, wiring diagrams and accessories.

2. Provide detailed control drawings on 24” x 36” blueprints for all motor controls that shall include all interface wiring between motor controls.

3. Provide point-to-point wiring diagrams showing interface between motor controls and instrumentation components and control panels furnished as work of other construction contracts. Refer to Section 260000 for additional information concerning the submission of point-to-point wiring diagrams.

4. Provide detailed scaled ½ inch = 1 foot drawings of motor control center including instrumentation and control drawings on 24” x 36” blueprints for floor plans showing MCC layout, locations and clearances.

5. Provide detailed scaled ¾ inch = 1 foot elevation drawings of motor control center including instrumentation and controls. Elevation drawings shall show all switches, pilot lights, timers, keypads, timers and meters including scaled locations of all knockouts and cutouts on exterior of enclosures.

6. Provide detailed scaled ¾ inch = 1 foot elevation drawings of motor control center including instrumentation and controls for interior mounting of all equipment. Drawings shall show scaled locations of all drives, starters, contactors, relays, protective devices, circuit breakers, fuses, wiring, timers, terminal blocks and cable connection points.

7. Provide catalog cuts for every device type, including pilot lights, switches, timers, breakers, fuses, meters, protective devices, located within the MCC.

B. Submit operations and maintenance manuals prepared in accordance with the requirements contained in Section 017823.

C. Submit the following information pertaining to the manufacturer(s):

1. Certification that manufacturer has been producing MCCs for a minimum of ten (10) years.

2. Complete literature, performance and technical data describing the proposed equipment and listing of items made by the manufacturer.

3. Location of closest service office from which this equipment shall be serviced.

4. Location of closest parts inventory for item installation.

1.04 – QUALITY ASSURANCE

A. Comply with ANSI, IEEE, NEMA, NEC, UL, and all applicable Federal, State and municipal codes.

B. In all cases where a device or part of the equipment is referred to in this Section in the singular (such as motor starter), it is intended that such references shall apply to as may such devices as are required to complete the installation.

C. Qualifications of Manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in the manufacturing, installing and servicing of similar items with a history of successful production acceptable to the Engineer as specified herein.

1.05 – RECORD DRAWINGS

A. Comply with the requirements contained in Section 017839.

B. Final wiring schematics shall be provided in single sided 11 inch x 17 inch format and shall be laminated.

1.06 – MANUFACTURER SUPPLIED FIELD SERVICES

A. Supply and credit to the Owner the costs for field services as specified in Section 014500 - Quality Control. The following field services shall be provided by the MCC manufacturer, as a minimum, in accordance with the requirements contained in Section 017500 - Starting and Adjusting:

1. Five (5) days totaling five (5) trips to the project site, once the system has been installed, to check the completed installation, make all necessary adjustments, startup the system, provide operations and maintenance instruction to the Owner, and otherwise place the system into permanent, fault free operation as specified in Section 017500 - Starting and Adjusting.

2. Two (2) days, two (2) trips, approximately three (3) and six (6) months after system startup of both MCC groups to review the operation with the plant superintendent and the Engineer and to make system adjustments, as necessary. Dates shall be selected by the Owner and may be used by the Owner any time within a one-(1) year period from the date of initial startup.

1.07 - WARRANTY

A. Provide a Warranty Certificate typed on manufacturer letterhead and signed by an authorized officer of the manufacturer. A notary public in the state in which the company headquarters is located shall witness the certificate. The Warranty Certificate shall be submitted, verbatim and

without exception, as follows:

"We, (MANUFACTURER) guarantee all components of the system specified in Section 262915 for the Calverton Sewage Treatment Facility specifications to be free from defects in design, materials and workmanship for a period of one (1) year commencing on the date the system was permanently placed on-line.

During the guarantee period, if any part or equipment component is defective or fails to perform when operating at design conditions and if the equipment has been installed and is being operated and maintained in accordance with the written instructions we provided, then we shall repair or exchange such defective part (s).

The replacement or repair of parts normally consumed in service shall include pilot light bulbs and lubrication. These parts only shall be considered as part of routine maintenance and upkeep and shall not be considered eligible for exchange free of charge under this Warranty.

Agreed upon this _____ *day*
(DATE)

by _____ *of*
(NAME OF AUTHORIZED AGENT)

_____*, who,*
(NAME OF MANUFACTURER)

by signing this document, affirms that he/she is legally authorized to submit this warranty on behalf of the manufacturer.

_____ _____
AUTHORIZED SIGNATURE DATE

_____
NOTARY

1.08 - DELIVERY, STORAGE AND HANDLING

A. Comply with the requirements contained in Section 016500 - Product Delivery, Storage and Handling.

B. The MCC shall be wood crated and be delivered to the site. A truck equipped with a suitably sized lifting mechanism to off load the sections shall be provided.

1.09 – SPARE PARTS

A. Provide the following spare parts in accordance with the requirements contained in Section 016500:

1. Ten (10) Fuses of each type furnished.

2. One (1) Contactor of each type furnished.

3. One (1) Solid-State Overload Relay for each type furnished.

4. Two (2) Contactor Coils for each type furnished.

5. Two (2) Sets of Contact Kits for each type furnished.

6. Four (4) Contactor Auxiliary Interlocks for each type furnished.

7. Two (2) Relays of each type furnished.

8. Two (2) Timing Relays for each type furnished.

9. One (1) Circuit Breaker of each type and size furnished.

10. Two (2) Phase Failure Undervoltage Relays of each type furnished.

11. One (1) Control Circuit Transformer of each type and size furnished.

12. One (1) Variable Frequency Drive for each size furnished. The contractor shall have all variable frequency drives furnished operate for a minimum of 30 days, remove one drive of each size and replace with a spare drive furnished. The original drive operational for 30 days shall be packaged in the “spare drives” factory packing and shall be the furnished spare drive.

PART 2 - PRODUCTS

2.01 - MANUFACTURERS

A. The MCC shall be manufactured by SIEMENS Tiastar or Approve Equal.

B. Manufacturer of motor control center shall engage a custom switchgear manufacturer to custom build all incoming switchgear, including cubicles, top hats, corner section and custom bussing. Motor control center is based on SIEMENS Tiastar dimensions. Contractor shall be responsible to meet dimension requirements.

C. Substitute manufacturers shall be responsible to fit MCC line-up to the dimensions detailed on the drawings.

2.02 - MOTOR CONTROL CENTERS

A. MCC enclosures shall be NEMA Type 1A with gasketed doors.

B. Motor control center shall be same manufacturer for motor controls and all instrumentation and control cubicles.

C. Motor control centers shall be complete, floor mounted, metal enclosed, grounded, indoor type. The motor control centers shall be NEMA Standard, Class 11, Type C except where other NEMA Standard classes and types are shown on the Drawings.

D. Ratings shall be 65,000 AIC for all motor control center and all circuit breakers. All ratings shall be stand alone not series rated. All circuit breakers rated 1000 amps or greater shall be equipped with ground fault protection in accordance with utility company requirements.

E. The equipment shall conform to the arrangements and details of the Drawings and to the spaces designated for installation. All MCC door enclosures shall open 90 deg. with all accessories mounted. All doors shall be hinged left-hand side.

F. All MCC doors shall be removable with a wiring plug harness for quick removal of doors with disconnecting wire terminations.

G. Design the centers to withstand the mechanical stresses caused by rough handling during shipment in addition to the electrical and mechanical stresses that will occur during operation of the centers.

H. Coordinate components of the centers and their arrangements electrically and mechanically. The components and the control wiring shall conform to the shop drawings found in general compliance with the contract documents as furnished for the various applicable electrical and mechanical sections of the specifications.

I. Assemble, connect and wire the centers at the factory in accordance with the NEMA Standard class and type for each of the centers.

J. Thoroughly clean, phosphatize, and paint the metal surfaces at the factory with primer and baked enamel or lacquer finishes.

K. The centers shall have the following features:

1. Standard Vertical Sections:

a. Approximately 90 inches high, front and rear line-up, fabricated by a single manufacturer.

b. Rugged steel assemblies with bracing, reinforcing gussets and jig-welding to assure rectangular rigidity. The sections shall be completely metal-enclosed,

including their bottoms.

c. Steel shall not be less than code gauge, leveled.

d. Bolts, nuts and washers shall be stainless steel.

e. Spaces within the sections shall be suitable and adequate.

f. Mount the sections on adequate structural steel supports at the factory, front and rear, for the full length of each center. Install the centers so the supports will rest on top of the concrete floor surfaces except where concrete pads are indicated. Anchor the centers with bolts, not less than 1/2-inch diameter.

g. Each present and future motor controller shall have an individual door with hinges and latches.

h. End panels shall be screw-removable to facilitate future additions.

i. Removable panels shall have screws that remain in the panels when the panels are removed. Self-aligning, self-retaining nuts attached within the assemblies shall receive screws.

j. Isolated vertical full height wiring troughs.

2. Bus Bars and Interconnections:

a. Shall be copper, rated as indicated on Contract Drawings. Minimum size shall be 800 amps for Control Building. Bus bars shall be totally enclosed.

b. Bus bar joints and interconnection joints shall be plated, constant high-pressure type with high strength copper-silicon bolts and nuts.

c. Provide continuous bars through dead corner cubicles to adjoining cubicles.

d. Insulation:

1) High strength polyester glass or equal.

2) High track-resistance.

3) High impulse and dielectric strength, especially at elevated temperatures, for withstanding the maximum short circuit currents.

4) High flame-retardant, self-extinguishing.

5) NEMA Standard for 65°C temperature rise shall apply.

e. Shall have horizontal main buses and vertical buses for connecting the motor controllers, circuit breakers, and switches and have an adequate ground bus that extends across the entire width of each center.

f. Bus bars shall be designed to extend to additional sections when so shown on the Drawings in addition to extending through dead corner cubicles.

g. Temperature rises shall not exceed the NEMA Standards.

3. Completely equipped spaces for future motor controllers, circuit breakers, and switches.

4. Motor Controllers:

a. Motor controllers shall be stab-on type except for large ratings that require bolted connections.

b. Motor starters shall be as specified in Section 262913 and be the products of a single manufacturer. They shall be interchangeable for the same ratings in all of the motor control centers being installed for this Contract.

c. Disconnecting contact devices:

1) Silver-plated copper, full floating, self-aligning, self-coupling, designed for cleaning action during engaging and disengaging movements.

2) Adequate flexibility between the stationary and movable components.

3) Adequate pressure maintained on the contacts.

4) Shall engage silver plated buses.

d. Doors mechanically interlocked to prevent their opening unless the disconnect is opened. Incorporate "defeater" mechanisms for inspection by qualified personnel.

e. External operating handles with lock-open padlocking provisions and ON and OFF position indicators.

5. Identify each motor controller, circuit breaker and switch with a separate nameplate of

laminated black phenolic resin with white core and engraved lettering not less than $^{3}/_{16}$-inch high. Identify each motor by its number or other designation and indicate function fulfilled by the motor. Identify pilot light with ON and OFF designation.

6. Line Monitoring Devices:

   a. The motor control center shall be equipped with a three phase monitoring relay to interlock each starter upon phase failure, phase loss or phase reversal. The phase monitor shall be manufactured by FURNAS, Class 47. Three-phase monitoring shall be provided for each of all three-phase motors including motors controlled via variable frequency drives.

L. The following control elements and features shall be provided for every motor operated unit powered from the MCC:

1. Power on push-to-test white pilot light mounted on the MCC section enclosure door.

2. Red push-to-test pilot light indicating that the motor is running.

3. Green push-to-test pilot light indicating that the motor is not running.

4. Overload push-to-test amber alarm pilot light mounted on the MCC section enclosure door.

5. Overload fault reset pushbutton mounted on the MCC section enclosure door.

6. Elapsed Time Meter: LED type flush mounted on the MCC section enclosure door.

7. Disconnecting Means: Include integral circuit breaker on the line side of each motor controller.

8. Two position selector switch marked “NORMAL/BYPASS” or “DRVE/BYPASS”. When placed in the “NORMAL” or “DRIVE” position the motor shall start via solid-state motor controller. When placed in the “BYPASS” position the motor shall start via a bypass motor starter installed within the same MCC section as the solid-state motor starter. This switch is not applicable to motors controlled via across-the-line motor starters.

9. Ammeter and four-position phase selector switch.

10. Each unit and the units provided with VFD’s, shall have a front panel mounted “HAND/OFF/AUTO” three-position selector switch. The unit shall run in the "HAND" mode. When in the "OFF" position the unit shall not run. When in “REMOTE” position

the unit shall be controlled by a remote control panel.

11. Isolation contactors (Input and Output) and Bypass contactors (NEMA Rated)

12. Auxiliary NO and NC contacts

13. Lightning/surge arrestor with individual line-to-line and individual line to ground protection. Clamping voltage levels shall be specifically sized for the applied system voltage.

14. Provide solid-state overload relay on load side of bypass contactor and thermal overload relay on load side of output contactor as specified in Section 262913.

15. Fast acting fuses on load side of main circuit breaker sized in accordance with manufacturers recommendations.

16. Pilot lights and switches shall be door mounted as part of a door mounted control station. The control station shall be removable for the purpose of mounting and wiring the pilot devices. Contact blocks of the pilot devices shall be mounted in a recessed control station housing to minimize the hazard of accidental contact when the unit door is opened.

17. Pilot Lights shall be LED type with push-to-test capabilities. No incandescent pilot lights shall be permitted."

M. Main circuit breaker and other cicuit breakers as indicated on drawings shall be ground fault circuit interrupter in accordance with electric utility LIPA and NEC requirements. Provide MCP type breakers for motors.

2.03 – WIRING

A. Control and power wiring shall be flame-retardant (VW-1) moisture, heat and oil resistant thermoplastic insulation rated 600V, 90EC, with stranded copper conductors, types MTW and THW.

B. Control wires shall be red. Power wires shall be black. Neutral wires shall be white. Ground wires shall be green.

C. Control wire size shall be #14 AWG minimum. Power wire size shall be #12 AWG minimum.

2.04 – SOURCE QUALITY CONTROL

A. Test motor control centers at the factory to assure that the centers do not have defects.

2.05 - ACCESSORIES

A. Electrical Matting: Dielectric strength 30,000 volts, 3 feet wide, 1/4 inch thick corrugated ASTM D 178 Type 2, Class II.

PART 3 - EXECUTION

3.01 – INSTALLATION

A. General:

1. Verify NEC clearances as shown on the Contract Drawings, prior to installation.

2. The MCC shall be level, plumb and securely installed. Where MCC is to be installed on a concrete pad, leveling steel channels shall be installed in the concrete.

3. Coordinate conduit entry locations through the floor slab with the General Contractor. Conduit locations shall be based on manufacturers shop drawings.

4. Follow manufacturers instructions as to lifting requirements, connecting shipping splits and attachment to structure.

B. Overload Heaters: Furnish and install all overload heaters required, based on motor nameplate data.

C. Wiring: Wire all equipment per Contract Drawings and as required.

3.02 - ADJUSTING

A. Test and adjust all equipment within the MCC. This includes short circuit device settings, electronic trip settings of breakers, MCP settings, timing relay settings, etc. All devices shall be properly adjusted such that the MCC protection and control circuits operate correctly and safely.

B. The MCCs shall be properly grounded per NEC requirements. The MCC ground bus shall be connected to ground grid where shown on the Contract Drawings.

C. Conduits entering the MCC shall have insulated grounding bushings tied together with copper jumper cables.

D. Provide electrical matting on the floor in front of the MCC, switchboard, and at locations selected by the Engineer. Matting shall be trimmed to fit in front of each MCC section. Extra mating shall be turned over to the Owner.

E. Each MCC shall have identifying nameplates as specified in Section 260553.

F. Install in accordance with NEC and manufacturer's instructions, and as shown on the Drawings.

3.03 - DEMONSTRATION

A. Provide step-by-step procedures for manually testing the transfer switch and load bank. The procedure shall be typed in 18-point font and then laminated and attached to the front of the transfer switch section with loop tape. Submit draft for review. Demonstrate procedures with Owner.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Automatic transfer switch.

1.02 - REFERENCES

A. NFPA 70 - National Electrical Code.

B. NEMA ICS 1 - General Standards for Industrial Control and Systems.

C. NEMA ICS 2 - Standards for Industrial Control Devices, Controllers, and Assemblies.

D. NEMA ICS 6 - Enclosures for Industrial Controls and Systems.

1.03 - SUBMITTALS

A. Submit product data under provisions of Section 013300.

B. Submit product data for transfer switches showing overall dimensions, electrical connections, electrical ratings, environmental restrictions, voltage, short circuit ratings, enclosure details and all accessories.

C. Submit manufacturer’s installation instructions. Include instructions for storage, handling, protection, examination, preparation, installation and starting of product.

D. Submit manufacturer’s operation and maintenance manual as part of shop drawing submittal.

1.04 - OPERATION AND MAINTENANCE DATA

A. Submit operation and maintenance data under provisions of Section 017823.

B. Include instructions for operating equipment.

C. Include instructions for operating equipment under emergency conditions.

D. Identify operating limits which may result in hazardous or unsafe conditions, whether switch is being operated automatically or manually.

E. Document ratings of equipment and each major component.

F. Include manufacturer’s recommended routine preventative maintenance schedule.

G. List any special tools, maintenance materials and recommended spare parts.

1.05 - EXTRA SERVICES

A. The supplier shall include as a part of the package a 5-year warranty and 5-year planned maintenance agreement at no additional cost to the Owner. The agreement shall include, as a minimum, one service call per year. The services must be performed by the authorized distributor of the equipment furnished and may not be subcontracted. The following services shall be performed once a year.

1. Check switches for loose, bare or broken wiring (replace as needed).

2. Test transfer switch operation, time delays and manual operators.

3. Test transfer switch operations and plant exerciser.

B. Manufacturer's Instructions: The manufacturer's instructions shall indicate application conditions and limitations of use stipulated by product testing agency specified under regulatory requirements. Include instructions for storage, handling, protection, examination, preparation, installation and starting of product.

1.06 - REGULATORY REQUIREMENTS

A. Conform to all applicable national, state, city or local codes for standby electrical systems.

PART 2 - PRODUCTS

2.01 - MANUFACTURERS

A. Transfer switch shall be ONAN Model OTPC. Motor Control Centers and sizing restrictions were designed with ONAN Model OTPC.

B. Transfer switch shall be supplied and warranted for five (5) years including 100% parts and labor, including a five-year planned maintenance agreement by the single system source supplier. No exceptions.

C. Proposal for any substitute equipment shall provide complete submittal data, as specified to the Engineer for approval or disapproval. Physical dimensions of transfer switches are based on ONAN Model OTPC. Substitute equipment shall be field verified for adequate equipment spacing relative to other equipment to be installed in the same locations.

D. It is intended that all products specified herein be of standard ratings, therefore, the ampere ratings, withstand and closing ratings, etc., shall be the manufacturer's next available larger size of rating until the specifications are exactly met.

2.02 - AUTOMATIC TRANSFER

A. Description: NEMA ICS 2; automatic transfer switches.

B. The switches shall be mechanically held, electrically operated and shall be interlocked mechanically and electrically to insure that normal power and emergency power mixing is impossible. The automatic transfer switches shall be suitable for use with emergency sources.

2.03 - AUTOMATIC TRANSFER SWITCH

A. Sequence of Operation: Automatic switching shall occur from normal power to emergency power when there is a phase reversal or when any phase of the normal power drops between an adjustable voltage range of 75 to 98% voltage and to automatically restore the load to normal when all phases are between an adjustable voltage range of 75 to 98% normal voltage or phase rotation is corrected.

B. Main switch contacts shall be high-pressure silver alloy in order to improve interrupting and withstand capabilities. Main contacts shall be rated for 600 volts AC minimum. Contact assemblies shall have arc chutes for positive arc extinguishment. Arc chutes shall have insulating covers to prevent interphase flashover.

C. Transfer switches shall be equipped with transparent protective covers over all live parts of the switch. These covers are to serve as protection to operators or service personnel from contact with live parts, and from contact with arcing by-products if the switches operate with the door open. Barriers shall be transparent to allow for visual inspection for contact position and for damage.

D. Automatic transfer switches utilizing components of molded case circuit breakers are not acceptable.

E. All transfer switches and accessories shall be UL listed and labeled, tested per UL Standard 1008 and CSA approved.

F. Solid state undervoltage sensors shall simultaneously monitor all phases of both sources. Pick-up and drop-out setting shall be adjustable between 75 and 98% of system voltage. Voltage sensors shall allow for adjustment to sense partial loss of voltage on any phase. Voltage sensors

shall have field calibration of actual supply voltage to nominal system voltage. Switches that do not monitor all three phases of both normal and emergency sources will not be acceptable.

G. Provide frequency sensing relay which will not permit transfer to emergency power until the generator set is operating at 60 Hz.

H. Control wiring shall be terminated interlocking, plug-type connectors. Operating current for the transfer shall be obtained from the source to which the load is to be transferred.

I. The controls shall include latching diagnostic indicators to pinpoint the last successful step in the sequence of control functions, and to indicate the present status of the control functions in real time, as follows:

1. Source 1 OK.

2. Start Generator Set.

3. Source 2 OK.

4. Transfer Timing.

5. Transfer Complete.

6. Retransfer Timing.

7. Retransfer Complete.

8. Timing for Stop.

2.04 - RATINGS

A. Ratings shall be as follows:

1. Voltage: 277/480 volts, three phase, four wire, 60 Hz.

2. Switched Poles: 4, (overlapping neutral not acceptable).

3. Load Inrush Rating: Combination Load.

B. All automatic transfer switches shall meet the following withstand ratings as a minimum. In order to protect the system under current or possible future conditions, whether protected by circuit breakers or current limiting fuses, the transfer switches must meet <u>both</u> of the following molded

case circuit breaker and current limiting fuse withstand and closing ratings as a minimum. Ratings are stated in symmetrical RMS amperes for three phase faults.

TRANSFER AMPERAGE	WCR @ 480 VOLTS W/ MOLDED CASE C/B'S	WCR @ 480 VOLTS W/ CURRENT LIMIT FUSES
800	65,000	200,000

C. Transfer switches shall be continuously rated in ambient temperatures of -40 to +50 degrees C, relative humidity up to 95% (non-condensing), and altitudes up to 10,000 feet.

2.05 - AUTOMATIC SEQUENCE OF OPERATION

A. Initiate Time Delay to Start Alternate Source Engine Generator: Upon initiation by normal source monitor.

B. Time Delay to Start Alternate Source Engine Generator: 0 to 15 seconds, adjustable.

C. Engine Start: Automatic controls shall signal the engine-generator set to start upon a signal from normal source sensors, after time delay to start has terminated.

D. Initiate Transfer Load to Alternate Source: Upon initiation by normal source monitor and permission by alternate source monitor.

E. Time Delay Before Transfer to Alternate Power Source: 2 to 120 seconds, adjustable.

F. Initiate Retransfer Load to Normal Source: Upon permission by normal source monitor.

G. Time Delay Before Retransfer to Normal Power: 0 to 30 minutes, adjustable; bypass time delay in the event of the alternate source failing.

H. Time Delay Before Engine Shut Down: 0 to 10 minutes, adjustable, of unloaded operation; factory set at 5 minutes.

I. Engine Exerciser: An Exerciser shall, once a week, start the generator set, transfer building load to the generator sets and after a set period of time, transfer the building load back to normal power. It shall be readily accessible and easy to start. Exercisers shall be furnished with load/no load selector switches. Provide bypass exerciser controls if the normal source fails during the exercise period.

2.06 - ENCLOSURE

A. Enclosures: Transfer switch shall be provided as open type for installation in the Outdoor Switchgear by the Outdoor Switchgear manufacturer. All controls which will be located on cabinets shall be key operated. Manual operating handles and all control switches, (other than key-operated switches) shall be accessible to authorized personnel only by opening the key-locking cabinet doors. Transfer switches with manual operating handles and/or non key-operated control switches located on the outside of the cabinet do not meet this specification and are not acceptable.

2.07 - ACCESSORIES

A. Indicating Lights: Mounted in cover of MCC by MCC manufacturer to indicate the following. Source lights shall be 30.5 mm heavy duty oiltight press-to-test by SIEMENS.

1. NORMAL SOURCE AVAILABLE.

2. EMERGENCY SOURCE AVAILABLE.

3. NORMAL SWITCH POSITION.

4. EMERGENCY SWITCH POSITION..

5. AC POWER FAILURE.

B. Test Switches: Mounted in enclosure of MCC by MCC manufacture to simulate failure of normal source. Switches to be keyed operated. Provide TEST/NORMAL/RETRANSFER positions. Retransfer position to provide immediate Retransfer to normal, bypassing time delay. The test switch shall be capable of receiving a remote signal. The generator load shed control panel shall provide a signal to initiate transfer to emergency source based on facility load. After the facility load has reduced the PLC shall deenergize the start signal. The transfer switch shall retransfer to the normal source and go into engine cool down mode 0-10 minutes adjustable.

C. Emergency Kill Switch Pushbutton (Maintained): When depressed shall shut down generator. This switch shall be in series with new exterior emergency kill switch.

D. Transfer Switch Main Shaft Auxiliary Contacts: Two normally open; two normally closed. Wired to terminal block for easy access for indication of switch position. Rated at 10 Amps continuous and 250 VAC maximum.

E. Transfer switches are to be equipped with permanently attached operating handles and quick-break, quick-make mechanisms suitable for normal operation under load. Loose manual operating handles that need to be field attached for operation will not be acceptable.

F. All transfer switches shall be provided with a field adjustable time delay during the switching in both directions, during which time the load is isolated from both power sources, to allow load residual voltage to decay before closure to opposite source. The delay feature shall have an adjustable range of 0 to 7.5 seconds. Phase angle monitor/inphase type monitors are not acceptable.

G. Provide a voltage monitoring relay and pneumatic time delay relay control circuit to energize a relay contact when power to the load terminals of the transfer switch is lost for a pre-selected time interval. The voltage phase monitor relay shall monitor 3-phase voltage, phase failure, phase reversal and voltage imbalance. The phase monitor shall have a normally closed contact in Series with a time delay relay. The pneumatic time delay relay shall have a 0-5 minute timer with automatic reset when power is restored to the coil. The normally open contact of the time delay relay shall be input to the PLC.

H. Provide generator 20 light remote annunciator located inside the Outdoor Switchgear on the ATS Cubicle. Interface generator set controls with battery charger alarms for all status conditions. Provide all power, control wiring including conduits.

I. Battery Chargers: One 10 amp voltage regulated battery charger shall be provided for each engine-generator set. Input AC voltage and DC output voltage shall be as required. Chargers shall be equipped with float, taper and equalize charge settings. New battery charger shall be located in the ATS cubicle. Operational monitors shall provide visual output along with individual form C contacts rated at 4 amps, 120 VAC, 30 VDC for remote indication of :

1. Loss of AC Power - red light.

2. Low Battery Voltage - red light.

3. High Battery Voltage - red light.

4. Power ON - green light (no relay contact).

PART 3 - EXECUTION

3.01 - INSTALLATION

A. Installation of transfer switches shall be by the Outdoor Switchgear manufacturer. Outdoor Switchgear manufacturer shall provide applicable U.L. labeling for installed system.

3.02 - POWER OUTAGE

A. After the transfer switch is installed, the Contractor shall be responsible to inspect the installation and field verify that the switch has been installed per manufacturer's recommendations. Owner's operating personnel shall be instructed on the use and service requirements of the transfer switch by the manufacturer. A minimum of two (2) hours manufacturers training is required.

3.03 - DEMONSTRATION

A. Demonstrate operation of transfer switch under provisions.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. The Contractor shall provide all labor, equipment and material necessary to furnish, install, and test variable frequency drives complete, in place, as shown on the Contract Drawings, as specified herein and approved by the Engineer.

B. The following equipment shall be provided with variable frequency drives and shall function as specified herein:

1. Three (3) Sludge Holding Tank/Pre-Eq Blowers blowers (Blower No. 1, No. 2, and No. 3). - Speed control at MCC section (local position). The speed of each blower shall be manually adjusted at the MCC via the speed pot. CP-1 will monitor the blower and will shutdown blowers based on pressure setpoints.

2. Three (3) MBR Air Scour blowers (Blower No. 4, No. 5, and No. 6). – Speed control at CP-3 (Auto position) and at MCC section (local position). The speed of each blower shall be automatically adjusted based on maintaining a desired pressure level. CP-3 will be provided with a PLC program that will allow the operator to select a desired pressure level by either speeding up or slowing down the SBR blower motors, or by shutting them down completely. CP-3 will generate a proportional 4-20mA signal that shall be used to set the blower motor speed.

3. Three (3) MBR Aeration blowers (Blower No. 7, No. 8, and No. 9). – Speed control at CP-3 (Auto position) and at MCC section (local position). The speed of each blower shall be automatically adjusted based on maintaining a desired dissolved oxygen concentration in the process tanks. CP-3 will be provided with a PLC program that will allow the operator to select a desired dissolved oxygen (D.O.) concentration in the reactor by either speeding up or slowing down the SBR blower motors, or by shutting them down completely (zero D.O.). Two SBR blowers are required to run simultaneously in order to produce sufficient oxygen for the process. The setpoint(s), high and low, are required to maintain a range of desired D.O. CP-3 will generate a proportional 4-20mA signal that shall be used to set the blower motor speed.

4. Two (2) Influent Station pumps (Pump No. 1 and No. 2). – Speed control at CP-1 (Auto position) and at the VFD Enclosure (local position). The Influent Station Pump motors are to be automatically adjusted by an external control signal from CP-1. CP-1 will generate a proportional 4-20mA signal that shall be used to set the pump motor speed.

5. Two (2) Pre-Equalization pumps (Pre-Equalization Pump No. 3 and No. 4). – Speed

control at CP-1 (Auto position) and at the VFD Enclosure (local position). The Pre-Equalization pump motors are to be automatically adjusted by an external control signal from CP-1. CP-1 will generate a proportional 4-20mA signal that shall be used to set the pump motor speed.

6. Four (4) Anoxic Basin pumps (Pump No. 5, No. 6, No. 7 and No. 8). – Speed control at CP-3 (Auto position) and at MCC section (local position). The Anoxic Basin pump motors are to be automatically adjusted by an external control signal from CP-3. CP-3 will generate a proportional 4-20mA signal that shall be used to set the pump motor speed.

7. Two (2) MBR Sludge Waste pumps (Pump No. 9 and No. 10). – Speed control at CP-3 (Auto position) and at MCC section (local position). The MBR Sludge Waste pump motors are to be automatically adjusted by an external control signal from CP-3. CP-3 will generate a proportional 4-20mA signal that shall be used to set the pump motor speed.

8. Three (3) MBR Permeate pumps (Pump No. 11, No. 12 and No. 13). – Speed control at CP-3 (Auto position) and at MCC section (local position). The MBR Permeate pump motors are to be automatically adjusted by an external control signal from CP-3. CP-3 will generate a proportional 4-20mA signal that shall be used to set the pump motor speed.

9. Two (2) Effluent Station pumps (Pump No. 1 and No. 2). – Speed control at CP-1 (Auto position) and at the VFD Enclosure (local position). The Effluent Station Pump motors are to be automatically adjusted by an external control signal from CP-1. CP-1 will generate a proportional 4-20mA signal that shall be used to set the pump motor speed.

C. Control panels designated as CP-1 and CP-2 will be furnished by the General Contractor for installation by the Electrical Contractor. The Electrical Contractor shall prepare point-to-point interconnection wiring diagrams as specified in Section 260000 and shall otherwise coordinate and manage the system design with the MCC supplier and VFD manufacturer so as to form unified, properly functioning variable speed systems.

1.02 - REFERENCES

A. National Electrical Manufacturers Association (NEMA) - No. ICS-1, General Standards for Industrial Control and Systems; No. ICS-2, Industrial Control Devices, Controllers and Assemblies; No. ICS-6, Enclosures for Industrial Control and Systems.

B. ANSI/NFPA 70 - National Electrical Code.

C. Underwriters Laboratories, Inc. (UL) - No. 845, Motor Control Centers, Electric.

1.03 – QUALITY ASSURANCE

A. The Contractor shall comply with ANSI, IEEE, NEMA, UL, and all applicable Federal, State and municipal codes including revisions to date of Contract.

B. In all cases where a device or part of the equipment is referred to in this Section in the singular (such as motor starter), it is intended that such references shall apply to as may such devices as are required to complete the installation.

C. Qualifications of Manufacturers:

1. Products used in the work of this Section shall be produced by manufacturers regularly engaged in the manufacturing, installing and servicing of similar items with a history of successful production acceptable to the Engineer as specified herein.

2. Contractor shall submit the following information pertaining to the manufacturer(s):

a. Certification that manufacturer has been producing the product for a minimum of five (5) years.

b. Complete literature, performance and technical data describing the proposed equipment and listing of items made by the manufacturer.

c. Location of closest service office from which this equipment shall be serviced.

d. Location of closest parts inventory for item installation.

1.04 – COORDINATION

A. The Contractor shall coordinate the work of this Section with the General Contractor as it relates to supplying a complete variable frequency drive system for aeration blowers and submersible pumps as shown on the Drawings.

B. Comply with the requirements contained in Section 013100 and Section 260000.

C. The Contractor shall review installation procedures under other Sections and contracts and coordinate them with the work specified herein.

D. The Contractor shall notify other prime contractors in advance of the installation of the work included to provide them with sufficient time for installation and coordination of interrelated items that are included in their contracts and that must be installed in conjunction with the work included in this Section.

E. The manufacturer will be provided with shop drawings of Control Panel (CP-1) and Control Panel (CP-3) and all aeration blowers furnished as work of the General Construction contract for the purposes of providing a complete and functional system. The manufacturer shall be responsible for the design, fabrication and supply of VFD's compatible with equipment and controls furnished under Contract G. The Engineer will supply the Electrical Contractor with the necessary shop drawings submitted as work of other contracts.

F. The MCC supplier shall furnish point-to-point interconnection wiring diagrams for approval by the Engineer prior to fabrication.

1.06 - FACTORY TESTS

A. The Contractor shall perform all factory testing (shop tests) as specified herein.

B. Before shipment, perform factory testing at the manufacturer's facility to verify that system components are functioning properly and that they meet the functional and performance requirements of the Contract Documents. All necessary personnel, equipment, facilities, temporary wiring, and incidentals required for testing shall be provided by the Contractor.

C. The Contractor shall submit information on factory testing procedures to verify that testing will fulfill the requirements as specified herein. Submittal shall be made at least two (2) months in advance of any scheduled testing and shall include dates of scheduled tests.

D. The Contractor shall notify Engineer in writing at least four (4) weeks before expected initiation of tests. Factory testing of all VFD panels, enclosures, disconnects, VFD software, and communications shall be witnessed by Owner and Engineer, if desired. Cost of lodging, meals, and travel for the Owner and Engineer are not to be included in the bid price. However, if factory tests are not performed satisfactorily on the agreed date as a result of Contractor's or manufacturer's action, those costs will be borne by the Contractor. The presence of Owner and Engineer during testing does not relieve the Contractor from conforming to the requirements of the Contract Documents and shall in no way imply acceptance of the equipment. The Owner and Engineer reserve the right not to attend factory tests.

E. The factory test shall not begin until all related VFD Shop Drawings have been submitted and approved.

F. All system hardware components shall be tested to verify proper operation of the equipment as stand-alone units. Test shall include, but not be limited to, the following:

1. System Checks:

a. Input / Output current test.

b. Input voltage test.

c. Ground fault test.

d. Short circuit test.

2. Verify Operator interface communication properties.

3. Verify automatic operation of process trip circuits.

4. Dynamic System Testing:

a. Test drive at 110% full load for one (1) hour at ambient temperature.

b. Input / Output current unbalance test.

5. VFD's shall not be shipped from the factory until two copies of certified factory test reports indicating satisfactory performance have been submitted to and approved by Engineer. Factory test reports shall include the following information:

a. List of tests performed.

b. Certified check lists or documentation verifying all sub-systems has been tested, as specified above.

c. Documentation verifying all VFD panel wiring has been checked.

d. List of required modifications or corrections identified during the Factory Test and corrective action taken.

e. Factory test reports shall be signed and dated by an authorized representative of the VFD drive and the Contractor.

1.07 – SUBMITTALS

A. Comply with the requirements contained in Section 013300. Submit the following:

1. Product Data: Manufacturer's specifications and other data demonstrating compliance with these specifications.

2. Schematic wiring diagrams for drive units.

3. Point-to-point interconnection wiring diagrams.

4. Complete shop drawings of all work of this Section, showing dimensions and locations of all items including supporting structures and clearance requirements.

5. Samples and Test Reports: The Contractor shall submit for review and approval samples of materials, supporting data, and testing methods and results for all materials and tests specified in this Section in accordance with Articles 4 and 5 of the General Conditions.

6. Operation and Maintenance Manuals: Within thirty (30) days after receiving approved shop drawings, and on a condition of its acceptance, the Contractor shall deliver to the Engineer the materials compiled in accordance with the provisions of Section 017823.

7. Drive submittal shall include any derating required for the selected carrier frequency and the recommended default frequency. Submittal shall be rejected and returned for revision and resubmittal if this information is not provided.

1.08 – MANUFACTURER SUPPLIED FIELD SERVICES

A. The Supplier shall supply and credit to the Owner the costs for field services as specified in Section 014500 - Quality Control.

B. The following field services shall be provided as a minimum in accordance with the requirements contained in Section 017500 - Starting and Adjusting:

1. Five (5) days totaling five (5) trips once the system has been installed to check the completed installation, make all necessary adjustments, startup the system, provide operations and maintenance instruction to the Owner, and otherwise place the system into permanent, fault free operation as specified in Section 017500 - Starting and Adjusting.

C. Manufacturer's representative, after initial field startup, shall remove all logic PC boards and install, and adjust, a spare set of PC boards. These boards shall remain in the drives and the initial boards shall be provided as spares to the Owner.

1.09 - WARRANTY

A. The Supplier shall provide a Warranty Certificate typed on company letterhead and signed by an authorized officer of the Supplier. The certificate shall be witnessed by a notary public in the state in which the company headquarters is located. The Warranty Certificate shall be submitted, verbatim and without exception, as follows:

"We, (SUPPLIER) guarantee all components of the system specified in Section 262923 for Calverton Sewage Treatment Facility specifications to be free from defects in design, materials and workmanship for a period of one (1) year commencing on the date the system was permanently placed on-line.

During the guarantee period, if any part or equipment component is defective or fails to perform when operating at design conditions and if the equipment has been installed and is being operated and maintained in accordance with the written instructions we provided, then we shall repair or exchange such defective part (s).

The replacement or repair of parts normally consumed in service shall include pilot light bulbs and lubrication. These parts only shall be considered as part of routine maintenance and upkeep and shall not be considered eligible for exchange free of charge under this Warranty.

Agreed upon this _____ *day*
(DATE)

by _____ *of*
(NAME OF AUTHORIZED AGENT)

_____*, who,*
(NAME OF SUPPLIER)

by signing this document, affirms that he/she is legally authorized to submit this warranty on behalf of the manufacturer.

_____ _____
AUTHORIZED SIGNATURE DATE

_____
NOTARY

1.10 - DELIVERY, STORAGE AND HANDLING

A. The system supplier and the Contractor shall comply with the requirements contained in Section 016500 – Product Storage and Handling Requirements.

1.11 - EXTRA MATERIALS

A. Provide three of each fuse size and type.

B. Provide one complete set of spare logic boards for each system provided.

PART 2 - PRODUCTS

2.01 - MANUFACTURERS

A. Variable frequency drives shall be Yaskawa IQPump.

B. Variable frequency drives shown on drawings are based on Yaskawa IQPump

C. Substitute Manufacturer shall be responsible to fit drive to dimension of MCC detailed on the drawings.

2.02 - DESCRIPTION

A. Provide enclosed variable frequency controllers suitable for operating the indicated loads. Conform to requirements of NEMA ICS 3.1.

B. Minimum efficiency at full load: 98 percent.

2.03 - ENVIRONMENT RATINGS

A. Operating Ambient: -10 degrees C to 50 degrees C.

B. Relative Humidity: 5 to 95% non-condensing, all power ratings.

C. Altitude: 3,300 feet maximum without derating.

D. Vibration: 0.006 inches (0.152 mm) displacement, 1G peak.

E. Shock: 15G peak for 11ms duration (+-1.0 ms).

2.04 - VARIABLE SPEED DRIVE RATINGS

A. Voltage: 460V AC +-10%

B. Frequency: 57 to 63 Hz

C. Phase: 3-phase

D. Motor Horsepower: Provide minimum HP for all drives as indicated on Drawings.

E. Minimum Efficiency: 98% at Full Load

F. Line Transient Protection: Line transients up to 5,000 volts peak. 320 Joules phase-to-phase 380 Joules phase-to-ground

G. Logic Power Ride-Thru: 2 seconds or longer

H. Drive Characteristics: Drive shall use isolated gate bi-polar technology

I. Control Logic Noise Immunity: Showering arc transients from 350 to 2,000 volts peak

J. Voltage: 0 to applied input voltage, 480V AC, maximum output voltage shall not exceed applied input voltage.

K. Frequency Range: 0.1 to 400 Hz with local programmable minimum and maximum limits

L. Frequency Output Resolution: 0.01 Hz

M. Volts-per-Hertz: Fully programmable minimum 1 to 14.3 V/Hz through local programming

N. Intermittent Overload Capability: Programmable MOPC from 50 to 150% of rated output current for up to 1 minute maximum

O. Carrier Frequency: Carrier frequency shall be adjustable from 1KHZ up to 15 KHZ.

P. Employ switching power supply operating off DC link. Design for ability to operate controller with motor disconnected from output.

Q. Design to attempt ten automatic restarts following a non-volatile fault condition before locking out and requiring manual restart.

R. Overtorque protection and multi-Speed operation. Acceleration/Deceleration operation shall have capabilities for linear or s-curve ramp operations.

S. In case of sustained power loss, the control shall shut down safely without component failure. In the event of momentary power loss, the control shall shut down safely without component failure. Upon return to power the system shall automatically return to normal operation, being able to restart into a rotating motor, regaining positive speed control without power failure.

T. Drive shall have two and three wire control capability. Drive shall have Energy Saving Voltage reduction during lightly loaded motor condition. Drive shall have PID control capability or accept external PID control capability. Drive shall have full range automatic torque boost.

U. Analog Inputs: 4-20 mA DC or 0-10V DC.

V. Drive shall have five (5) programmable output control contacts for external interface with remote control panels as confirmation that the motor was called to start. Show this on the point-to-point

interconnection diagram.

W. Drive shall have nine (9) input preset speed inputs.

X. Keypad shall be English with 2-line by 16-character LCD display.

Y. Drive shall have built-in overload relay.

2.05 - VARIABLE SPEED DRIVE SYSTEM

A. The variable speed drive system shall include a diode bridge converter, filter network and a transistorized inverter section. Base driver signals used to control firing of the power transistors shall be designed with optically coupled isolators for optimum drive protection. The output shall be sinusoidal wave, pulse width modulated, voltage waveform for reduced harmonic heating in the motor. The systems shall include all the necessary control circuits, synchronizing the equipment and protective devices as required by design. The drive unit shall be able to withstand a phase-to-phase and a phase-to-ground short without damage to the drive unit.

B. The systems protection as a minimum shall provide the following:

1. Current Limit: 115% of rated current

2. Overcurrent: 180% of rated output current IET (trip fault)

3. Short-circuit: Phase-to-phase (trip fault)

4. Overvoltage: High D.C. bus voltage (trip fault)

5. Undervoltage: 20% below line voltage (trip fault)

6. Momentary Power Failure: 30 to 500 milliseconds

7. Burn-out: D.C. bus fuse protection or 3 phase input fusing

8. Alarms: Fault contact (Form C)

9. Digital Indication

10. Individual Fault Condition: Overcurrent of a transistor. Output overcurrent or short-circuit. Overcurrent while running. Thermal overload. Overvoltage of the D.C. bus due to regeneration. Overvoltage of the D.C. bus due to high line voltage. Overtemperature of the enclosure and ground fault shall also be provided.

11. LED Indication: D.C. bus capacitor charge

12. Stall Protection: Prevents current limit activation during overload condition to prevent stall

13. Ground Fault: Detects output short-circuit due to a ground (trip fault)

14. Voltage Limit: Prevents the overvoltage of the D.C. bus during deceleration.

15. Acceleration & Deceleration Time: Fully programmable.

C. The system parameters shall be shown on the digital display meter before, during, and after the adjustment. The digital display shall indicate the actual setting of the adjustment, not percentage of setting. The following adjustment shall be provided:

1. Acceleration: 0.1 to 60 seconds

2. Deceleration: 0.1 to 60 seconds

3. Upper Frequency Limit: 0 to 80 Hz

4. Lower Frequency Limit: 0 to 80 Hz

5. Auto Reference Bias: 0 to 80 Hz

6. Auto Reference Gain: 0 to 80 Hz

D. The unit shall be self-protecting to prevent any misadjustments by the operator. The upper limit cannot be set below the lower limit, and will signal the operator of this misadjustment.

2.06 – DRIVE AND MCC FEATURES

A. Operator Interface with Display: Each VFD shall be provided with an operator interface with digital display to set VFD parameters and motor speed and to indicate output voltage, output frequency, and output current. Display shall be flush mounted on the MCC section enclosure door containing the VFD unit.

B. Elapsed Time Meter: LED type flush mounted on the MCC section enclosure door containing the VFD unit.

C. A separate line voltage monitor shall be included in the motor control center for each motor to interlock motor when either undervoltage, overvoltage phase loss or phase reversal occurs.

D. Input Signal: All units shall be furnished to accept a 4- 20 mA control signal.

E. Disconnecting Means: Include integral circuit breaker on the line side of each controller.

F. Each MCC section containing the VFD unit shall be equipped with the following:

1. 0 to 30 mA D.C. ammeter to monitor 4-20 mA input signal from PID controller, (3-1/2 square minimum).

2. Two position selector switch marked “DRIVE / BYPASS”. When placed in the “DRIVE” position the motor shall start via the VFD. When placed in the “BYPASS” position the motor shall start via a bypass motor starter installed within the same MCC section as the VFD.

3. Ammeter and four position phase selector switch

4. Power on push-to-test white pilot light mounted on the MCC section enclosure door.

5. VFD fault push-to-test amber alarm pilot light mounted on the MCC section enclosure door.

6. VFD run push-to-test amber alarm pilot light mounted on the MCC section enclosure door.

7. Overload push-to-test amber alarm pilot light mounted on the MCC section enclosure door.

8. Overload fault reset pushbutton mounted on the MCC section enclosure door.

9. 0-10 units D.C. analog amp meter to represent the motor speed in percent of full speed.

10. Isolation contactor, output contactor and bypass contactor (NEMA Rated)

11. Auxiliary NO and NC contacts

12. Lightning/surge arrestor with individual line-to-line and individual line to ground protection. Clamping voltage levels shall be specifically sized for the applied system voltage.

13. Pilot lights and switches shall be door mounted as part of a door mounted control station. The control station shall be removable for the purpose of mounting and wiring the pilot devices. Contact blocks of the pilot devices shall be mounted in a recessed control station housing to minimize the hazard of accidental contact when the unit door is opened.

14. Each MCC section equipped with a VFD shall be equipped with a large capacity cooling fan with finger guard to increase air circulation within the section.

B. Provide solid-state overload relay on load side of bypass contactor and thermal overload relay on load side of output contactor as specified in Section 262913.

C. Fast acting fuses on load side of main circuit breaker sized in accordance with manufacturers recommendations.

D. Isolated 4-20 mA input for follower signal input.

E. 4-20 mA scaled output proportional to drive speed. Input to PLC.

F. Drive shall have three inputs for preset speeds initiated by remote contacts.

G. Drive shall have speed contacts to close when speed is reached and be input to the PLC.

H. Each variable speed drive have the following:

1. Broad Band Harmonic Filter for compliance with IEEE 519-1992.

I. A critical speed avoidance circuit shall be included for the selection of three critical speeds with a rejection band centered on that speed. The drive shall ignore any speed signals requiring drive operation within the rejection band.

J. PID (Proportional-Integral-Derivative) process controller shall be included, and shall be provided with a menu driven selection and programming via door-mounted keypad.

1. Provide Acceleration/Deceleration time separately adjustable from 2 to 60 seconds. Set both initially at 45 seconds.

2. When called upon to stop, the motor shall decelerate to minimum speed before stopping.

3. Auto restarting after controller faults shall function in the "Auto" mode, and shall disable the drive after a pre-determined number of faults have occurred.

4. The number of automatic restarts shall be set based on the on specific experience or equipment manufacturer’s recommendations.

K. Each VFD shall include a comprehensive microprocessor based digital diagnostic system that monitors its own control functions and displays faults and operating conditions.

L. Microprocessor systems must be products of the same manufacturer as the VFD (to assure single source responsibility, availability of service and access to spare parts).

2.07 – VARIABLE SPEED DRIVE FILTER NETWORK

A. Interface between the outputs of the PID controllers and the variable speed drive analog inputs shall be provided with custom designed filter networks to attenuate both common mode and normal mode voltage transients induced by the drives.

B. Filter networks shall be Model No. ECC-0231 as manufactured by Eagle Control Corporation, Yaphank, New York or approved equal.

2.08 - FABRICATION

A. Wiring Terminations: Match conductor materials and sizes indicated.

B. Enclosure: NEMA 250, Open Type.

C. Finish: Manufacturer's standard enamel.

2.09 – PUMPS P1, P2, P3, P4, P14, AND P15 OUTDOOR VFD

A. Variable Frequency drives for the Influent and Effluent Pump Station pumps and Pre-Equalization tank pumps shall be provided in a NEMA 4X, S.S. enclosure as shown on the drawings.

B. VFD enclosure shall have a local main circuit breaker with an external operable handle.

2.10 - SOURCE QUALITY CONTROL

A. Inspect and production-test each product specified in this Section.

B. Test shall include simulated operation.

C. Notify Engineer at least five (5) days prior to test. Owner or Engineer may witness test.

PART 3 - EXECUTION

3.01 - INSTALLATION

A. Controllers shall be factory installed in the motor control center by the MCC manufacturer. Install controller in accordance with manufacturer's written instructions and NEMA ICS 3.1.

B. Tighten accessible connections and mechanical fasteners after placing controller. Install fuses in fusible switches.

C. Select and install overload heater elements in controllers to match installed motor characteristics.

D. Provide engraved plastic nameplates as specified in Section 260553 – Identification for Electrical Systems.

E. Provide neatly typed label inside each motor controller door identifying motor served, nameplate horsepower, full, load amperes, code letter, service factor, and voltage/phase rating.

3.02 - ADJUSTING

A. Make final adjustments to installed drive to assure proper operation of system. Obtain performance requirements from installer of driven loads.

3.03 - DEMONSTRATION

A. Demonstrate operation of controllers in automatic and manual modes.

B. Provide the services of the manufacturer's trained personnel to completely check the VFD system installations and adjust the drive for operation.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Packaged engine generator set.

B. Exhaust piping, fittings, silencer and insulation.

C. Control panels.

D. Battery and charger.

E. Vibration isolation.

1.02 - REFERENCES

A. NEMA AB1 - Molded Case Circuit Breakers.

B. NEMA MG1 - Motors and Generators.

C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

D. ANSI/NFPA 70 - National Electric Code.

E. NFPA 110 - Emergency Standby Systems.

F. NFPA 30 - Flammable and Combustible Liquids Code.

G. NFPA 37 - Installation of Stationary Engines.

H. NFPA 101 - Life Safety Code.

1.03 - SUBMITTALS

A. Submit product data under provisions of Section 013300.

B. Shop Drawings: Indicate electrical characteristics and connection requirements. Show 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.

C. Product Data: Provide data showing dimensions, weights, ratings, interconnection points and internal wiring diagrams for engine, generator, control panel, battery, battery rack, battery charger, exhaust silencer, vibration isolators, radiator and derating schedules, operating performance,

exhaust flow data, and cooling system data. Submit generator alternator output curves, deration curves and temperature data on the complete genset individual components.

D. Test Reports: Indicate results of performance testing including 0.8 power factor test at 100 percent load.

E. Prototype Test Reports: Submittals will not be received without submission of prototype test reports. No exceptions.

F. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation and starting of product. Provide typical system interconnection wiring diagrams.

G. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

H. Manufacturer's Field Reports: Submit under provisions of Section 017500. Indicate procedures and findings.

1.04 - OPERATION AND MAINTENANCE DATA

A. Submit under provisions of Section 017823.

B. Operation Data: Include instructions for normal operation.

C. Maintenance Data: Include instructions for routine maintenance requirements, service manuals for engine and day tank, oil sampling and analysis for engine wear, and emergency maintenance procedures.

1.05 - QUALITY ASSURANCE

A. Perform work in accordance with NFPA 110.

1.06 - QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum ten years experience, and with an authorized distributor offering 24-hour parts and service availability within 50 miles of the project. The manufacturer shall fabricate the engines, generators and control panel. Automatic transfer switches and generator enclosures shall be supplied, warranted and serviced by a single system source supplier.

B. Supplier: Authorized distributor of specified manufacturer with minimum six years documented experience with specified products and factory-trained service technicians. The supplier must be factory authorized to perform warranty service on the entire system, including but not limited to, the engines, generators, control panels and automatic transfer switches. The supplier must show proof of factory trained service technicians on all components.

C. The complete engine generator system shall be standard of a single manufacturer. It shall be factory built, tested and shipped by this single manufacturer.

1.07 - REGULATORY REQUIREMENTS

A. Conform to requirements of NFPA 70 and NFPA 110.

B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and indicated.

1.08 - EXTRA SERVICES

A. The single source supplier shall provide as part of the package a 5-year warranty and 5-year planned maintenance agreement at no additional cost to the Owner. This warranty shall cover the generator system, transfer switches and generator enclosures. Agreement shall include, as a minimum, one service call per year. The services must be performed by the authorized distributor of the equipment furnished, and may not be subcontracted. The following services shall be performed once a year.

1. Replace engine-lubricating oil and remove used oil from premises.

2. Replace oil and fuel filters.

3. Check coolant system for proper levels and condition. Replace coolant filters and add corrosion inhibitor as needed.

4. Check air filter.

5. Check and clean crankcase breathers.

6. Check turbocharger free-spin and end play.

7. Check and adjust belts as required.

8. Check engine for loose, bare or broken wiring. Replace as needed.

9. Check entire equipment for fuel or water leaks.

10. Check condition of batteries and report any action necessary for recharging or replacing.

11. Start and run all engines, check temperatures and pressures.

12. Test engine safety shutdown systems.

13. Test all transfer switches operation and time delays.

14. Submit a report of this inspection to the Owner and advise of any further work required.

PART 2 - PRODUCTS

2.01 - MANUFACTURERS

A. ONAN CORPORATION, Minneapolis, Minnesota, or Kohler Generator, or specifically approved equal.

B. Proposal for any substitute equipment shall provide complete submittal data, as specified in Section 012500 - Substitution Procedures and specified herein, to the Engineer for approval or disapproval. The supplier must submit detailed sizing calculations for each generator to verify models are capable of picking up the entire loads with voltage dips as herein specified.

C. Approval of Substitute Equipment: Design has been based on ONAN Model Generators. If substitute equipment is approved, the contractor shall be responsible for the charges of any necessary revisions to the plans and specifications, drawings, and project documentation; and charges related to equipment spacing, enclosure sizes, foundation sizes, mounts, electrical wiring, ventilation equipment, fuel, exhaust components, etc., as well as any engineering costs. If a brand name other than that specified is proposed for use, the supplier must provide a locally available generator system for the Owner and engineer to review and inspect, as well as witness testing to show compliance with the specifications. Also, the supplier must furnish a list of completed installations, including name, address and telephone number of at least five comparable installations which can prove the proposed products have operated satisfactorily for three years.

D. It is intended that all products specified herein be of standard ratings, therefore, the KW and KVA, starting KVA and maximum allowable voltage dip, ratings, etc., shall be the manufacturer’s next size or rating to exactly meet the specifications. No exceptions.

2.02 - SYSTEM REQUIREMENTS

A. The engine generator shall start and provide continuous power to the loads with 100 percent block loading at the time of transfer.

2.03 – NATURAL GAS ENGINE GENERATOR SET

A. Rating: The AC engine generator set, ONAN Model 200GFPC and shall be rated by the manufacturer for standby operation at 200 KW/250 KVA at 0.8 PF, 60 Hz, 1800 RPM for use at 277/480 volts, 3 phase, 4 wire. Ratings shall be at an elevation of 500 feet above sea level, and at 104 degrees F.

1. Voltage regulation shall be +/- 1.0 percent of rated voltage for any constant load between no load and rated load.

2. Frequency regulation shall be isochronous under varying from no load to 100% rated load.

3. Random Voltage Variation: The cyclic variations in RMS voltage shall not exceed +/- 1.0% of rated speed for constant loads from no load to rated load, with constant ambient and operating temperature.

4. Random Frequency Variation: Speed variations for constant loads from no load to rated load shall not exceed plus or minus 0.5% of rated speed, with constant ambient and operating temperature.

5. Telephone Harmonic Distortion: The sum of AC voltage waveform harmonics, from no load to full linear load, shall not exceed 5% of rated voltage (L-N, L-L, L-L-L) and no single harmonic shall exceed 3% of rated voltage.

6. Telephone Influence Factor: TIF shall be less than 50 per NEMA MG1-22.43.

7. The diesel engine generator set shall be capable of picking up 100% of nameplate KW and power factor in one step with the engine generator set at operating temperature, in accordance with NFPA Standard 110, Paragraph 5-13.2.6.

8. The maximum allowable engine BMEP on the engine shall not exceed 204 psi at 100% rated load.

9. The engine generator shall start and provide power to the loads in the following step starting sequence with a maximum instantaneous voltage dip of 8% and a maximum frequency dip of 4%.

Step No.	Description	Load	Volts/ Phase	Motor Code	Load Type	Starting Method
1	Misc. Load	15KVA	208/3	-	Misc. Load	Full Voltage
	Lighting Load	1kW	120/1	-	Lighting Load	Full Voltage
	AC-1	1.3A	208/1		Motor Load	Full Voltage
	CU-1	6 Tons	480/3	-	AC Load	
	CU-1 Fan	3A	480/3	-	Motor Load	Full Voltage
	AC-2	1.3A	208/1	-	Motor Load	Full Voltage
	CU-2	4 Tons	208/1	-	AC Load	
	CU-2 Fan	1A	208/1	-	Motor Load	Full Voltage
	AC-3	0.29A	208/1	-	Motor Load	Full Voltage
	AC-4	0.16A	208/1	-	Motor Load	Full Voltage
	AC-5	0.16A	208/1	-	Motor Load	Full Voltage
	Vault Heater	3kW	480/3	-	Resistive Load	Full Voltage
2	Pump P1	3.5HP	480/3	-	Motor	VFD
	Pump P3	3.5HP	480/3	-	Motor	VFD
3	Pump P5	3HP	480/3	-	Motor	VFD
	Pump P7	3HP	480/3	-	Motor	VFD
	Pump P5B	3HP	480/3	-	Motor	VFD
	Pump P7B	3HP	480/3	-	Motor	VFD
4	MX-1	2.3HP	480/3	G	Motor	Full Voltage
	MX-1B	2.3HP	480/3	G	Motor	Full Voltage
	MX-2	2.3HP	480/3	G	Motor	Full Voltage
	MX-2B	2.3HP	480/3	G	Motor	Full Voltage
	Pump P11	3HP	480/3	-	Motor	VFD
	Pump P11B	3HP	480/3	-	Motor	VFD
	Pump P13	3HP	480/3	-	Motor	VFD
	Pump P13B	3HP	480/3	-	Motor	VFD
	Blower B4	10HP	480/3	-	Motor	VFD
	Blower B4B	10HP	480/3	-	Motor	VFD
	Blower B6	10HP	480/3	-	Motor	VFD
	Blower B6B	10HP	480/3	-	Motor	VFD
5	Pump P9	1.5HP	480/3	-	Motor	VFD
	Pump P9B	1.5HP	480/3	-	Motor	VFD
	Pump P14	7.2HP	480/3	-	Motor	VFD
	Blower B1	3HP	480/3	-	Motor	VFD
	Blower B1B	3HP	480/3	-	Motor	VFD
	Blower B3	3HP	480/3	-	Motor	VFD
	Blower B3B	3HP	480/3	-	Motor	VFD
6	Blower B7	10HP	480/3	-	Motor	VFD
	Blower B7B	10HP	480/3	-	Motor	VFD
	Blower B9	10HP	480/3	-	Motor	VFD
	Blower B9B	10HP	480/3	-	Motor	VFD

10. The generator shall at a minimum provide the following performance.

B. The generator as a packaged unit (engine, alternator and controls) provide a minimum of 920 SKVA sustaining a minimum of 90% of rated no load voltage with the specified 920 SKVA load at near zero power factor applied to the generator.

C. The alternator performance shall be designed to provide a minimum of 820 locked rotor KVA at a maximum voltage dip of 30%.

D. The following performance verifications shall be provided for substitute generators.

1. Submit five copies of generator sizing program based upon the specified step/starting sequence and associated voltage/frequency dips and required starting KVA.

2. As part of the substitution requirements the contractor shall enter all design step/starting sequence loads into the manufacturer's generator sizing program in the presence of the engineer to verify model proposed by substitute manufacturer meets the specified requirements for ambient temperature, site altitude, voltage dip, frequency dip, and starting KVA.

2.04 - AC GENERATOR, REGULATOR AND EXCITER UNIT

A. The AC generator, exciter and voltage regulator shall be designed and manufactured by the engine generator set manufacturer as a complete generator system.

B. The AC generator shall be synchronous, four pole, revolving field, dripproof construction, single prelubricated sealed bearing, air cooled by a direct drive centrifugal blower fan and directly connected to the engine with flexible drive discs. The armature shall have skewed laminations of insulated electrical grade steel, two-thirds pitch windings in order to minimize field heating and voltage harmonics. The rotors shall have amortissuer (damper windings) layer wound mechanically wedged winding construction. The rotors shall be dynamically balanced. The exciters shall be brushless, three phase, with full wave silicon diodes mounted on the rotating shaft and a surge suppressor connected in parallel with the field winding. Field discharge resistors shall not be acceptable. Systems using three wire solid state devices (such as SCRs or transistors) mounted on the rotor shaft shall not be acceptable.

C. All insulation system components shall meet NEMA MG1 standard temperature limits for Class H insulation system. Actual temperature rise measured by resistance method at full load shall not exceed 105 degrees C to provide additional allowance for internal hot spots. The main generator and exciter insulation systems must be suitably impregnated for operation in severe environments for resistance to sand, salt and sea spray.

D. Generator shall be a Permanent Magnet Generator (PMG). Permanent magnet generators shall provide excitation power to the automatic voltage regulator for immunity from voltage distortion caused by nonlinear SCR controlled loads on the generator. The PMG's shall sustain main field excitation power for optimum motor starting and to sustain short circuit current for selective operation and coordination of system overcurrent devices.

2.05 - ENGINE GENERATOR SET CONTROLS

A. The generator sets shall be provided with microprocessor-based control systems which are designed to provide automatic staring, monitoring, and control functions for the generator set. The control systems shall also be designed to allow local monitoring and control of the generator sets, and remote monitoring and control as described in this specification. The controls shall be mounted on the generator sets, and shall be vibration isolated and prototype tested to verify the durability of all components in the system under vibration conditions encountered. The controls shall be UL-508 labeled, CSA282-M1989 certified, and meet IEC-8528 part 4. All switches, lamps and meters shall be oil-tight and dust-tight, and the enclosure doors shall be gasketed. There shall be no exposed points in the controls (with the door open) that operate in excess of 50 volts. The controls shall meet or exceed the requirements of Mil-Std 461C part 9, and IEC Std. 801.2, 801.3 and 801.5 for susceptibility, conducted and radiated electromagnetic emissions. The entire controls shall be tested and meet the requirements of IEEE587 for voltage surge resistance. The generator set mounted controls shall include the following features and functions:

1. The generator control panel shall provide a network interface for the future Scada System. This network interface shall communicate all the generator status, control, display messages, troubleshooting and safety features as described below. Software shall be available for interfacing PLC Software with generator control panel communications. This interface and software development will be performed by another contract.

2. Three position control switch labeled RUN/OFF/AUTO. In the RUN position the generator set shall automatically start, and accelerate to rated speed and voltage. In the OFF position the generator set shall immediately stop, bypassing all time delays. In the AUTO position the generator set shall be ready to accept a signal from a remote device to start and accelerate to rated speed and voltage.

3. Red "mushroom-head" push-button EMERGENCY STOP switch. Depressing the emergency stop switch shall cause the generator set to immediately shut down, and be locked out from automatic restarting.

4. Push-button RESET Switch: The RESET switch shall be used to clear a fault and allow restarting the generator set after it has shut down for any fault condition.

5. Generator Set AC Output Metering: The generator set shall be provided with a metering set with the following features and functions:

   a. 2.5-inch, 90 degree scale analog voltmeter, ammeter, frequency meter, and kilowatt (KW) meter. These meters shall be provided with a phase select switch and an indicating lamp for upper and lower scale on the meters. Ammeter and KW meter scales shall be color coded in the following fashion: readings from 0-90% of generator set standby rating: green; readings from 90-100% of standby rating: amber; readings in excess of 100%: red.

   b. Digital metering set, 0.5% accuracy, to indicate generator RMS voltage and current, frequency, output current, output KW, KW-hours and power factor. Generator output voltage shall be available in line-to-line and line-to-neutral voltages, and shall display all three phase voltages (line to neutral or line to line) simultaneously.

6. Generator Set Alarm and Status Message Display: The generator set shall be provided with alarm and status indicating lamps to indicate non-automatic generator status, and existing alarm and shutdown conditions. The lamps shall be high-intensity LED type. The lamp condition shall be clearly apparent under bright room lighting conditions. The generator set control shall indicate the existence of the following alarm and shutdown conditions on a digital display panel:

   Low Oil Pressure (alarm)
   Low Oil Pressure (shutdown)
   Oil Pressure Sender Failure (alarm)
   Low Coolant Temperature (alarm)

   High Coolant Temperature (alarm)
   High Coolant Temperature (shutdown)
   Engine Temperature Sender Failure (alarm)

   Fail to Crank (shutdown)
   Overcrank (shutdown)
   Overspeed (shutdown)
   Low DC Voltage (alarm)
   Low Coolant Level (alarm or shutdown-selectable)
   High DC Voltage (alarm)
   Weak Battery (alarm)
   Low Fuel-Daytank (alarm)
   High AC Voltage (shutdown)
   Low AC Voltage (shutdown)

Under Frequency (shutdown)
Over Current (warning)
Over Current (shutdown)
Short Circuit (shutdown)
Ground Fault (alarm)
Over Load (alarm)
Emergency Stop (shutdown)

a. In addition, provisions shall be made for indication of two customer-specified or future alarm or shutdown conditions. These two alarm conditions shall be interfaced with leak detection/overfill alarm panel for overfill and leak detection. Labeling of the customer specified or future alarm or shutdown conditions shall be of the same type and quality as the above specified conditions. The non-automatic indicating lamp shall be red, and shall flash to indicate the generator set is not able to automatically respond to a command to start from a remote location.

7. Engine Status Monitoring: The following information shall be available from a digital status panel on the generator set control:

Engine Oil Pressure (psi of kPA)
Engine Coolant Temperature for left and right block temperatures (degrees F or C; both)
Engine Oil Temperature (degrees F or C)
Engine Speed (rpm)
Number of Hours of Operation (hours)
Number of Start Attempts
Battery Voltage (DC volts)

8. Control Functions: The control system shall provide for the following functions:

a. The control system provided shall include a cycle cranking system, which allows for user selected crank time, reset time, and number of cycles. Initial settings shall be for 3 cranking periods of 15 seconds each, with 15 second rest period between cranking periods.

b. The control system shall include an idle mode control, which allows the engine to run in idle mode in the RUN position only. In this mode, the alternator excitation system shall be disabled.

c. The control system shall include an engine governor control, which functions to provide steady state frequency regulation as noted elsewhere in this specification. The governor control shall include adjustments for gain, damping, and ramping function to control engine speed and limit exhaust smoke while the unit is starting.

The governor control shall be suitable for use in paralleling applications without component changes.

d. The control system shall include time delay start (adjustable 0-300 seconds) and time delay stop (adjustable 0-600 seconds) functions.

e. The control system shall include sender failure monitoring logic for speed sensing, oil pressure, and engine temperature which is capable of discriminating between failed sender or wiring components, and an actual failure condition.

9. Alternator Control Functions: The generator set control shall include the following alternator control functions:

a. The generator set shall include an automatic voltage regulation system which is matched and prototype tested with the governing system provided. It shall be immune from misoperation due to load-induced voltage waveform distortion and provide a pulse width modulated output to the alternator exciter. The voltage regulation system shall be equipped with three-phase RMS sensing and shall control build up of AC generator voltage to provide a linear rise and limit overshoot. The systems shall include a torque-matched characteristic, which shall reduce output voltage in proportion to frequency below a threshold of [58-59] HZ. The voltage regulator shall include adjustments for gain, damping and frequency roll-off. Adjustments shall be broad range, and made via digital raise-lower switches, with an alpha-numeric LED readout to indicate setting level.

b. The voltage regulation system shall include provisions for reactive load sharing and electronic voltage matching for paralleling applications. Motorized voltage adjust pot is not acceptable for voltage matching.

c. Controls shall be provided to monitor the output current of the generator set and initiate an alarm when load current exceeds 110% of the rated current of the generator set on any phase for more than 60 seconds. The controls shall shut down and lock out the generator set when output current level approaches the thermal damage point of the alternator.

d. Controls shall be provided to monitor the KW load on the generator set, and initiate an alarm condition when total load on the generator set exceeds the generator set rating for in excess of 5 seconds.

e. Controls shall include a load shed control, to operate a set of dry contacts (for use in shedding customer load devices) when the generator set is overloaded.

f. An AC over/under voltage monitoring system which responds only to true RMS voltage conditions shall be provided. The system shall initiate shutdown of the generator set when alternator output voltage exceeds 110% of the operator-set voltage level for more than 10 seconds, or with no intentional delay when voltage exceeds 130%. Under voltage shutdown shall occur when the output voltage of the alternator is less than 85% for more than 10 seconds.

g. A battery monitoring system shall be provided which initiates alarms when the DC control and starting voltage is less than 25VDC or more than 32VDC. During engine starting, the low voltage limit shall be disabled, and if DC voltage drops to less than 14.4 volts for more than two seconds a “weak battery” alarm shall be initiated.

h. The control system shall include a ground fault monitoring relay. The relay shall be adjustable from 100-1200 amps, and include adjustable time delay of 0-1.0 seconds. The relay shall be for indication only, and not trip or shut down the generator set. Note bonding and grounding requirements for the generator set, and provide relay which will function correctly in system as installed.

10. Control Interfaces for Remote Monitoring: All control and interconnection points from the generator set to remote components shall be brought to a separate connection box. No field connections shall be made in the control enclosure or in the AC power output enclosure. Provide the following features in the control system:

a. Form “C” dry common alarm contact set rated 2A @ 30VDC to indicate existence of any alarm or shutdown condition on the generator set.

b. One set of contacts rated 2A @ 30VDC to indicate generator set is ready to load. The contacts shall operate when voltage and frequency are greater than 90% of rated condition.

c. A fused 10 amp switched 24VDC power supply circuit shall be provided for customer use. DC power shall be available from this circuit whenever the generator set is running.

d. A fused 20 amp 24VDC power supply circuit shall be provided for customer use. DC power shall be available from this circuit at all times from the engine starting/control batteries.

e. The control shall be provided with provisions for connection of remote monitoring equipment as described herein or shown on the drawings.

2.06 - ENGINES

A. The natural gas engine shall be manufactured by Cummins Engine Company and designed specifically for generator set duty. The natural gas engine shall be 4 cycle, natural gas fueled, direct injection, 1800 RPM, with forged steel crankshaft and connecting rods. Minimum engines shall be 677 cubic inches. Engines shall have a minimum of 6 cylinders. The cylinder blocks shall be cast iron with replaceable wet liners and have four valves per cylinder. The engines shall be turbocharged and aftercooled.

B. Two cycle engines will not be acceptable.

C. Electronic governor systems shall provide automatic isochronous frequency regulation. The engine governing systems shall not utilize any exposed operating linkage.

D. The engines shall be cooled by a unit-mounted closed loop radiator system including belt-driven pusher fan, coolant pump and thermostat temperature control. The cooling systems shall be rated for full rated load operation in 104 degrees F (40 degrees C) ambient condition. The cooling capability of the generator sets shall be demonstrated by prototype tests on a representative generator set model conducted by the generator set manufacturer; calculated data from the radiator manufacturer only is not sufficient. Radiators shall be provided with a duct adapter flange permitting the attachment of an air discharge duct to direct the radiator air outside according to the manufacturer's instructions.

E. Rotating parts shall be guarded against accidental contact per OSHA requirements.

F. The maximum radiator cooling air shall not exceed 18,221 scfm. The maximum alternator cooling air shall not exceed 1,314 cfm for the genset. The maximum allowable static restriction shall not exceed 0.5 inches of water. The entire cooling air system is based on the above data. All costs incurred if an alternate manufacturer is purchased shall be the responsibility of the electrical contractor. These costs shall include costs to all other trades as well as any associated engineering fees.

2.07 - ENGINE ACCESSORY EQUIPMENT

A. The engine generator sets shall include the following accessories:

1. Electric starters capable of three complete cranking attempts without overheating, before overcrank shutdown (75 seconds).

2. Positive displacement, mechanical, full pressure, lubrication oil pumps. Full flow lubrication oil filters with replaceable spin-on canister elements and dipstick oil level indicators. Provide bypass oil filters.

3. Replaceable heavy duty dry element air cleaners with restriction indicators and safety element.

4. Engine mounted battery charging alternators, 45 ampere and solid-state voltage regulators.

5. Anti-condensation heater for alternator.

2.08 - BASES

A. The engine-generator set shall be mounted on a heavy duty steel base to maintain proper alignment between components. The engine-generator set shall incorporate battery trays with battery hold down clamps on the base rails. Provisions for stub up of electrical connections shall be within the footprint of the generator set base rails and within the base tanks as specified in the housing section of the specification. Vibration isolators, spring type, shall be provided to be mounted under the generator set base.

2.09 - GENERATOR SETS CIRCUIT BREAKERS

A. Generator main circuit breaker shall be solid state UL listed, molded case type, rated as listed below. Circuit breakers shall be mounted in a separate NEMA 1 enclosure and be shipped completely wired to the gensets. No exceptions. Enclosures shall include neutral blocks for field connection.

B. Solid State circuit breakers shall be 100% rated: Refer to drawings for sizes.

C. Circuit breaker (CB) shall be long time current and instantaneous pickup with solid state trip unit. CB shall have visible mechanical fault indicator and push button trip.

D. Circuit breakers shall be rated at 65,000 AIC.

E. Provide auxiliary contacts on breaker position.

2.10 - ACCESSORIES

A. Vibration isolators: Spring type.

B. Starting and control Batteries: Two (2) 24 volt starting batteries each genset, lead acid type, 24 volt DC (12 volt DC will not be accepted), sized to accommodate 45 seconds of cranking at an ambient of 0 degrees F without being recharged.

C. Battery Chargers: One 10 amp voltage regulated battery charger shall be provided for each engine-generator set. Input AC voltage and DC output voltage shall be as required. Chargers shall be equipped with float, taper and equalize charge settings. New battery charger shall be located in the ATS cubicle. Operational monitors shall provide visual output along with individual form C contacts rated at 4 amps, 120 VAC, 30 VDC for remote indication of :

1. Loss of AC Power - red light.

2. Low Battery Voltage - red light.

3. High Battery Voltage - red light.

4. Power ON - green light (no relay contact).

D. Block Heaters: Thermostatically controlled jacket water heater shall be supplied for each genset with a minimum size shall be 2500 watts. Input voltage of heaters shall be 480 VAC 1 phase.

E. Provide generator 20 light remote annunciator located inside the Outdoor Switchgear on the ATS Cubicle. Interface generator set controls with battery charger alarms for all status conditions. Provide all power, control wiring including conduits.

2.12 - ENCLOSURE

A. The generator set shall be provided with a factory-installed sound attenuated housing which allows the generator set to operate at full rated load in the ambient conditions previously specified. The enclosure shall reduce the sound level of the generator set while operating at full rate load to a maximum of 72 dBA at any location 7 meters from the generator set in a free field environment. Housing materials used shall be steel. Fiberglass and plastic are not acceptable. Acoustical materials used shall be oil and water resistant. No foam materials shall be used.

B. The enclosure shall include hinged doors for access to both sides of the engine and alternator, and the control equipment and a hinged rear see-through control door. Key-locking and padlockable door latches shall be provided for all doors. Door hinges shall be stainless steel.

C. The enclosure shall be provided with an exhaust silencer which is mounted on top of the enclosure, and allows the generator set package to meet specified sound level requirements. Silencer and exhaust shall include a rain cap and rain shield.

D. All sheet metal shall be primed for corrosion protection and finish painted with the manufacturers standard color using a two step electrocoating paint process, or equal meeting the performance

requirements specified below. Metal part surfaces shall be prepared, primed and painted. The painting process shall result in a coating which meets the following requirements:

1. Primer thickness, 0.5-2.0 mils. Top coat thickness, 0.8-1.2 mils.
2. Gloss, per ASTM D523, 80% plus or minus 5%. Gloss retention after one year shall exceed 50%.
3. Crosshatch adhesion, per ASTM D3359, 4B-5B.
4. Impact resistance, per ASTM D2794, 120-160 inch pounds.
5. Salt spray, per ASTM B117, 1000+ hours.
6. Humidity, per ASTM D2247, 1000+ hours.
7. Water Soak, per ASTM D2247, 1000+ hours.

E. Painting of hoses, clamps, wiring harnesses, and other non-metallic service parts will not be acceptable. Fasteners used shall be corrosion resistant, and designed to minimize marring of the painted surface when removed for normal installation or service work. The enclosure shall be built and tested by the engine generator manufacturer.

2.13 - SOURCE QUALITY CONTROL

A. To provide proven reliability of the system, three series of tests shall be performed: prototype model tests, production model tests and field tests. The manufacturer shall provide documentation demonstrating satisfactory prototype and production test results. Generator sets that have not been prototype tested and factory tested at 0.8 PF will not be acceptable.

B. Generator Set Factory Production Tests and Evaluation: These tests and evaluations must have been performed on a prototype generator set representative of the Model specified. A summary of the generator set testing results shall be submitted for review. The manufacturer's standard series of components development tests on the generator system, engine and other major components shall also be performed and available for review, but shall not be acceptable as a substitute for prototype testing on the complete representative generator set prototype.

C. Torsiograph Analysis and Test: The manufacturer of the generator set shall verify that the engine generator set, as configured, is free from harmful torisional stresses. The analysis shall include correlation of empirical data from tests on a representative prototype. The empirical data must include spectrum analysis of the torsional transducer output within the operating speed range of the engine generator set. Calculations based on engine and generator separately are not acceptable.

D. Temperature Rise Test: Complete thermal evaluation of a prototype generator rotor and starter must include actual measurement of internal generator and exciter temperatures by embedded detector method, and measurement of average temperature rise by resistance method. No position measured any place in the windings may exceed the temperature rise limits of NEMA for the particular type of insulation system used. Resistance method temperature rise data shall be confirmed by a full load test on the generator set prototype to include conducted and radiated heat from the engine.

E. Short Circuit Test: A test on a prototype generator set shall have demonstrated that the generator set is designed to withstand the mechanical forces associated with a short circuit condition. With the generator set operating at rated load and speed, the generator terminals must be short circuited on all three phases for a duration of 20 seconds. At the conclusion of this test, the generator set must be capable of full load operation.

F. Endurance Run Test: A minimum of 500 continuous hours of endurance testing with a representative generator set prototype operating as defined by the manufacturer's standby rating shall have been performed. Endurance testing shall be used to verify structural soundness and durability.

G. Maximum Power Test: With the prototype generator set at normal operating temperature and with all power consuming auxiliaries in place, the maximum power available at rated speed shall be determined with the governor set at its fuel stop. The generator set shall maintain this power for a minimum of two minutes.

H. Linear Vibration Test: A test for in-line motion of components occurring along a repeatable path shall meet the manufacturer's acceptance criteria.

I. Cooling System Test: A cooling system test shall demonstrate the ability of the generator set cooling system to maintain normal operating temperature while operating at full rated load and power factor at the highest ambient temperature (122°F) of the system rating. Cooling air requirements, radiator air flow and maximum allowable restriction at radiator discharge, shall be verified by this test.

J. Maximum Motor Starting KVA: Motor starting KVA shall be determined by test, based on a sustained RMS recovery voltage of at least 90 percent of no load voltage with the specified load KVA at near zero power factor applied to the generator set.

K. Transient Response, Steady State Speed Control and Voltage Regulation: Prototype generator set tests shall demonstrate consistent performance as follows; stable voltage and frequency at all loads from no load to full rated load, consistent frequency backwidth with steady state load,

maximum voltage and frequency kp on load acceptance and rejection and restoration to steady state after sudden load changes. Transient response is a complete generator set (engine, generator, exciter, and regulator) performance criteria and cannot be established on generator data alone.

L. Witnessed Generator Set Factory Production Tests: On the equipment to be shipped, an 8-hour test shall be performed at rated load and 0.8 PF. These tests shall include certified data to document the following: run at full load, maximum power, voltage regulation, transient and steady state governing, single step load pickup and safety shutdowns. Provide a factory certified test record of the production testing. Certified test record shall be sealed by a licensed professional engineer. The contractor and/or equipment supplier at their expense shall coordinate and provide all transportation and lodging for the Owner and an Owner's engineering representative to witness the above stated factory-test.

2.14 - WARRANTY

A. Provide a 5-year manufacturer's limited warranty, including 100% parts and labor, ONAN Option L031. The complete electrical power system, including but not limited to, generator set, controls, associated switches, enclosures, and accessories, as provided by the single source manufacturer, shall be warranted by the manufacturer against defects in materials and workmanship for a period of five (5) years from the date of system startup. Coverage shall include parts, labor, travel expenses, and labor to remove/reinstall the equipment, per ONAN's standard published limited warranty. Supplier must be factory authorized to perform warranty service on the entire system, including, but not limited to, the engine, the generator, the control panels, and the automatic transfer switches.

PART 3 - EXECUTION

3.01 - INSTALLATION

A. Install engine generator and all appurtenances in accordance with manufacturer's recommendations.

B. Enclosure manufacturer shall install all exhaust components as shown on the drawings and as required to comply with NFPA 37 and local codes and regulations. Components shall be sized to assure full load operation without excessive backpressure sized as per manufacturer's recommendations with actual site dimensions when installed as shown on the drawing. Make provisions as required for pipe expansion and contraction.

C. Coordinate installation of anchor bolts with generator enclosure manufacturer.

D. Installation shall comply with applicable State and local codes as required by the authority having jurisdiction. Install equipment in accordance with manufacturer's instructions and instructions included in the listing or labeling of UL listed products.

3.02 - FIELD QUALITY CONTROL

A. Initial startup and field acceptance tests are to be conducted by the authorized representative of the system manufacturer who supplies the equipment.

B. Test data shall be collected and recorded on the following: time of day, coolant temperature, operating oil pressure, battery charging rate, cranking time, crank-to-rated frequency time, voltage and frequency overshoot, load assumption-to-steady state voltage and frequency stabilization time, operating voltage, frequency, current, kilowatts and power factor. All data shall be taken every fifteen (15) minutes.

C. Procedure: Generator manufacturer shall conduct a six (6) hour load bank test at 1.0 power factor for each generator set. Contractor shall provide load bank for testing generator set at 100% load. Contractor is not permitted to use load bank specified as part of the testing requirements. Load bank test shall test generator at full nameplate KW rating. Generator manufacturer's representative shall record test data, as described in (B) above. Test data shall be tabulated and typed for submission and approval by the engineer for final acceptance. No handwritten field notes will be allowed.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Interior and exterior luminaries and accessories.

B. Emergency lighting and units.

1.02 - REFERENCES

A. ANSI C78.379 - Electric Lamps - Incandescent and High-Intensity Discharge Reflector Lamps - Classification of Beam Patterns.

B. ANSI C82.1 - Ballasts for Fluorescent Lamps - Specifications.

C. ANSI C82.4 - Ballasts for High-Intensity Discharge and Low Pressure Sodium Lamps (Multiple Supply Type).

D. NEMA WD 6 - Wiring Devices - Dimensional Requirements.

E. NFPA 70 - National Electric Code.

F. NFPA 101 - Life Safety Code.

G. LM-79-08, IESNA Approved Method for the Electrical and Photometric Measurements of Solid-Sate Lighting Products

H. LM-80-08, IESNA Approved Method for Measuring Lumen Maintenance of LED Light Sources

1.03 - SUBMITTALS

A. Submit product data under provisions of Section 013300.

B. Shop Drawings: Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.

C. Product Data: Provide dimensions, ratings, performance data and installation instructions.

D. Submit manufacturer’s installation instructions. Indicate application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation and installation of Product.

E. All foot candle calculations and photometrics must be provided with substitute products. Photometrics shall include a room by room analysis showing walls, room names and room numbers. Calculation points shall be 2 feet on center, measured at 30" above the floor. Maintained foot candle levels shall meet or exceed those listed in Section 2.03B of this specification. On each drawing, provide a table showing the Room Name, Room Number, Maximum Light Level, Minimum Light Level, Average Light Level, Min:Max Ratio and, IES File Model Number.

F. All substitute LED light fixtures and LED retrofit lighting kits must be Design Lights Consortium (DLC) qualified.

G. All substitute LED replacement lamps must be listed by Energy Star as Certified Light Bulbs.

1.05 - REGULATORY REQUIREMENTS

A. Conform to requirements of ANSI/NFPA 70.

B. Furnish products listed and classified by Underwriters Laboratories, Inc.

1.06 - EXTRA PRODUCTS

A. Section 017800 – Closeout Submittals.

B. Furnish four (4) replacement lamps for each lamp type.

C. LED Fixtures: At completion of installation, deliver to Owner.

a. Four (4) additional fixtures for each type specified listed on the light fixture schedule.

PART 2 - PRODUCTS

2.01 - LIGHTING UNITS

A. Refer to LIGHTING FIXTURE SCHEDULE on drawings for fixture manufacturer, catalog number, and fixture description.

B. Provide electronic energy saving ballasts. Where dimming is shown on drawings, provide dimmable type ballasts.

C. Incandescent and high intensity discharge recessed lighting fixtures are to be furnished with thermal cut outs as required by NEC.

D. All fixtures equipped with emergency battery packs shall have test light and switch accessible and visible from the room floor.

2.02 - LIGHTING FIXTURE NOTES

A. MOUNTING: Electrical Contractor is responsible for reviewing all mounting arrangements prior to ordering any products. Electrical Contractor is responsible for ordering all of the proper fixtures, mounting hardware and miscellaneous fasteners to complete project. Fixtures to be secured to the structure from a minimum of two points, at opposing ends of the fixture when ceiling recessed or surface mounted. Four points shall be secured where necessary for the fixture to be parallel and tight to underside of ceiling. All recessed fixtures to fit tight to ceiling to eliminate all light leaks. Trim kits, when not secured internally to fixture, shall be secured to structure at a minimum of two points.

B. MOUNTING: Prior to submitting and ordering any light fixture, Contractor is responsible for verifying adequate mounting clearances for all light fixtures that are to be recessed into a grid type ceiling. Where new ceilings are to be installed, contractor shall coordinate with ceiling installers for exact mounting heights and required mounting spaces.

C. FINISHES: All exposed portions (permanent or adjustable) of fixtures to be finished by the manufacturer in a finish as specified.

D. Fixtures shall come pre-assembled and complete with all sockets (incandescent to be spring supported), lamp ends, ballasts, transformers, fixture ends, trim rings, plates, and low density mounting kits (as required) for a complete installation.

E. LENSES:

1. Flourescent – Minimum 0.125” thick and to be virgin acrylic.

2. Low voltage – Tempered glass, to enclose lamp.

F. LAMPS: SYLVANIA, PHILLIPS or GENERAL ELECTRIC, as selected by the Electrical Contractor. Note, all lamps for one project to be furnished by the same manufacturer unless otherwise specified. At the end of the project, the Electrical Contractor shall turn over to the Owner one lamp envelope from each type installed. The Contractor shall be responsible for replacing all lamps which burn out during construction and **up to ninety (90) days after Owner occupancy of the building.**

G. VOLTAGE: As noted on the LIGHTING FIXTURE SCHEDULE. Contractor is responsible for field verifying available voltage(s) and ordering fixtures, ballasts, and transformers accordingly.

H. ORDERING: It is solely the responsibility of the Contractor to order fixtures, lamps, mounting brackets and accessories so that the fixtures will be installed and operating upon Owner Occupancy opening. Contractor is responsible for all delays because of his/her lack of effort to order the products in a timely manner.

I. SHIPPING: The light fixture manufacturer shall mark the fixture type as indicated on the contract drawings and/or shop drawings on the respective carton when shipping luminaries. The Contractor shall be responsible for checking each carton immediately upon receipt for verification that fixtures are undamaged and no contents are missing. All discrepancies must be reported to shipper and manufacturer immediately; otherwise the Contractor shall be responsible for items which are lacking or damaged.

2.03 - WARRANTY

A. All light fixtures shall have a 5-year manufacturer's warranty. Warranty shall begin on date of substantial completion.

PART 3 - EXECUTION

3.01 - INSTALLATION

A. Install fixtures in accordance with manufacturer's instructions.

B. Mount fixtures in locations as shown on drawings and as called for in schedule on electrical drawings. Determine type of ceiling to be installed in each space from drawings and schedules and furnish fixtures suitable for the exact type.

C. Joints in fixture wiring shall be made using wire nuts, pre-insulated Scotch locks, or other approved mechanical means of connection.

D. Adjustable type fixtures shall be adjusted by the Contractor to illuminate intended area to satisfaction of the Engineer.

E. Surface fixtures in or on plastered or drywall ceilings shall be supported from pieces of support channel spanning across main support channels and shall not depend on ceilings for support.

F. Coordinate fixture locations to clear diffusers, ductwork, piping, etc.

G. Maintain integrity of enclosures on all enclosed and gasketed fixtures. Minimize number of enclosure penetrations and make such penetrations water and dust tight with appropriate gasketing and fittings.

H. Fixtures are to fit tight against construction to eliminate light leaks.

I. Recessed downlights are to be provided with adjustable mounting bars/frames for drywall or lay-in ceilings as required. Fixtures shall be securely fastened to the ceiling framing member by mechanical means such as bolts, screws, rivets, or listed clips identified for use with the type of ceiling framing members and fixtures.

J. Support recessed fixtures 2 foot x 2 foot and larger using a minimum of four independent wire hangers, one on each corner, of same gauge as ceiling suspension system supported from building structure independent of ceiling framing. Install earthquake clips to secure recessed grid-suspended luminaries in place.

K. Wall-mounted fixtures shall be mounted plumb with building lines and installed with proper box and cover hardware.

L. Surface-mounted fixtures are to cover mounting hardware. Use a canopy that is no longer than the length and width of the fixture and at a height that is no higher than required to mount the fixture absolutely vertical. Fixtures shall be plumb and shall align with building lines and with each other. Support surface mounted luminaries on grid ceiling directly from building structure. Secure to prevent movement.

M. Stem-mounted fixtures are to be mounted to be absolutely vertical or horizontal. Install suspended luminaries using pendants supported from swivel hangers or in accordance with details shown in drawings. Provide pendant length required to suspend luminaire at indicated height. Support stem-mounted fixtures directly from the building structure.

N. Install recessed luminaries using accessories and firestopping materials to meet regulatory requirements for fire rating. In fire rated ceilings, recessed luminaries must carry one-hour UL fire rating classification.

O. Install all accessories specified with each fixture. Install recessed luminaries to permit removal from below.

P. Bond products and metal accessories to branch circuit equipment grounding conductor.

Q. At completion of installation and before turning over to owner, clean and remove all dirt and smudges from all lighting fixtures including lenses, louvers and reflectors.

R. Relamp luminaries that have failed at completion of project.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Main CB/current transformer/meter cabinet and meter pan.

B. Transformer to be mounted on a reinforced concrete pad/pull box.

C. Secondary conduits, conductors, excavation, concrete and backfill.

1.02 - REFERENCES

A. ANSI/NFPA 70 - National Electric Code.

1.03 - SUBMITTALS

A. Submit product data under provisions of Section 013300.

PART 2 - PRODUCTS

2.01 - METERING EQUIPMENT

A. Meter pans, meter, and current transformers shall be on PSEG's approved lists of manufacturers and models.

B. CT Cabinets and Current Transformers shall be factory installed into Outdoor Switchgear manufacturer’s structures as per PSEG specifications.

2.02 - COMBINATION TRANSFORMER PAD/PULL BOX

A. Combination transformer pad/pull box shall be as per PSEG requirements.

B. Conduit penetrations shall be provided for both primary and secondary penetrations into transformer and into pull box so that minimum ground cover is maintained in accordance with NEC and PSEG requirements. Enter primary and secondary conduits/conductors into transformer pullbox in accordance with PSEG requirements.

2.03 - PULL BOXES

A. Provide pull boxes including property line pull boxes as per PSEG requirements for both primary and secondary services.

B. Provide PSEG approved type TS for all primary services and secondary services above 400 amperes.

C. Provide PSEG approved type B-3-6 for secondary services 400 amperes and less.

2.04 - CABLE

A. Install new primary and secondary service conductors in conduit.

B. Primary service conductors shall be 15 KV, copper size 1/0, type TR-XLPE with 220 mils insulation thickness as per PSEG requirements.

C. Secondary service conductors shall be copper type XHHW-2 as per PSEG requirements.

PART 3 - EXECUTION

3.01 - INSTALLATION

A. Coordinate primary and secondary service installation with PSEG prior to beginning work.

B. Provide secondary service to incoming cubicle of motor control center, coordinate service requirements with PSEG prior to commencing work.

C. All metering equipment and ground fault protection shall be factory installed in motor control center.

D. Contractor shall file application for new electrical service. Contractor shall coordinate with owner for all information related to the service application.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Temporary electric service for construction.

1.02 - REFERENCES

A. ANSI/NFPA 70 - National Electric Code.

1.03 - SUBMITTALS

A. Submit under provisions of Section 013300.

B. Shop Drawings: Indicate locations where temporary electric service will be located and routed.

1.04 - REGULATORY REQUIREMENTS

A. Obtain required permits from authorities.

B. Notify affected utility companies before starting work and comply with their requirements.

C. Do not close or obstruct egress width to exits.

D. Do not turn off electric equipment without authorization from Owner and Engineer. Provide 72 hours advance notification.

PART 2 - PRODUCTS

2.01 - TEMPORARY ELECTRIC SERVICE

A. Temporary service shall be available during the entire contract period and during all phases of work, day and night for the existing Sewage Treatment Plant.

B. Temporary service shall be installed and maintained per NEC, OSHA, N.Y. State Uniform Building Code and PSEG requirements.

C. The temporary electrical service shall be sized correctly for all of the new and existing loads.

D. All existing equipment shall be protected against damage caused by the installation, operation and removal of the temporary service. Any equipment or items damaged shall be replace at no cost to the Owner.

E. Provide temporary lighting for existing Sewage Treatment Plant, Control building, influent station and existing Process Tank. Minimum foot candle for temporary lighting: 30 F.C., measured at floor surface. The Contractor shall set up light to minimize glare.

F. Provide wiring, utility poles, metering equipment, distribution panel and other equipment for temporary light and power to existing Sewage Treatment Plant. Contractor shall pay all fees required for temporary service and complete all required applications. Contractor shall pay all application and construction fees required for temporary service and complete all required applications. Contractor shall pay for all electrical consumption for temporary service.

G. Provide Owner with three (3) keys to all distribution panels for temporary power for distribution to General Contractor and District Personnel.

H. Wiring for temporary light, controls and power shall include a distribution panel for 4 wire, 120/208 volt, 200 AMP service. Feeders in building shall have branch circuits of #12 conductors minimum. Contractor shall pay all application and construction fees required for temporary service and complete all required applications

I. Provide 20 amp branch circuits with fused ground type receptacle outlet for single phase power.

J. Where distribution panels are provided for temporary power provide four (4) 20 amp circuits with #12 AWG SO cord pigtails with 20 amp plugs with strain relief. Provide one (1) 30 amp circuit with #10 AWG SO cord pigtail with 30 amp plug with strain relief.

K. Provide lamps and fuses, including replacements required.

L. Provide new materials for temporary light and power.

M. Provide ground fault protection (such as portable plug-in type ground fault circuit interrupters) on single phase 20 amp receptacle outlets.

N. Provide receptacle outlets, portable cord connectors and attachment plugs with standard NEMA configurations.

O. Install all temporary light and power materials in accordance with National Electrical Code.

P. Upon completion of the project, remove all temporary electric light and power work and restore all affected finishes, connections and sitework.

PART 3 - EXECUTION

3.01 - EXAMINATION

A. Verify existing system voltage characteristics and match to existing system voltage characteristics.

B. Verify that the temporary service is sized to accommodate all loads.

C. Determine locations and routings for temporary electric wires, cables and conduits with Engineer and Owner.

3.02 - TEMPORARY POWER

A. Temporary wiring and power shall be installed so as not to be a hazard and shall be protected from damage. Separate circuits shall be provided for light and power. Overcurrent protective devices and switches shall be provided. All equipment, tools, metal cabinets and boxes shall be grounded.

B. Disable existing power only to make final connections or when new service is to be installed.

C. Remove and dispose of all temporary power and control feeds after receiving written approval from Engineer. Restore all finishes to original specified conditions.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Removal and storage of subsoil.

B. Cutting, grading, filling and rough contouring the site prior to placement of topsoil or pavement base for final grading.

1.02 - RELATED SECTIONS

A. Section 311100 – Site Clearing.

B. Section 312316 – Excavation – Removal of Unsuitable Soils.

C. Section 312323.13 – Backfilling – Replacement of Unsuitable Soils.

1.03 - REFERENCES

A. ANSI/ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb. Rammer and 18 inch Drop.

1.04 - SUBMITTALS

A. Submit under provisions of Section 013300.

B. Sieve Analysis: Submit a sieve analysis of all types of fill material to be used.

1.05 - PROJECT RECORD DOCUMENTS

A. Accurately record actual locations of utilities remaining, by horizontal dimensions, elevations or inverts, and slope gradients.

PART 2 - PRODUCTS

2.01 - MATERIALS

A. Subsoil: Reused excavated material, graded, free of lumps, rocks and gravel larger than 3 inches in size, debris and contaminants.

PART 3 - EXECUTION

3.01 - EXAMINATION

A. Verify site conditions.

B. Verify that survey benchmark and intended elevations for the work are as indicated.

3.02 - PREPARATION

A. Identify required lines, levels, contours and datum.

B. Identify known underground, aboveground and aerial utilities. Stake and flag locations.

C. Coordinate the removal or relocation of utilities with the necessary utility companies.

D. Protect above and below-grade utilities that are to remain.

E. Protect plant life, lawns, rock outcropping and other features remaining as a portion of final landscaping.

F. Protect benchmarks, existing structures, fences, sidewalks, paving and curbs from excavation equipment and vehicular traffic.

3.03 - APPLICATION

A. Excavate subsoil from areas to be further excavated, re-landscaped or re-graded. Do not excavate wet subsoil.

B. Stockpile in area designated on site. Remove excess subsoil not being reused from site.

C. Stockpile subsoil to a height not exceeding 8 feet. Cover to protect from erosion.

D. When excavation through roots is necessary, perform work by hand and cut roots with sharp axe.

E. Fill areas to contours and elevations with unfrozen subsoil material, aggregate base course or paving.

F. Place and compact subsoil fill material in continuous layers not exceeding 6 inches compacted depth, compacted to 95 percent maximum dry density in accordance with ANSI/ASTM D1557.

G. Maintain optimum moisture content of fill materials to attain required compaction density.

H. Make grade changes gradual. Blend slope into level areas.

I. Remove surplus fill materials from site.

3.04 - TOLERANCES

A. Maximum Variation From Top Surface of Subgrade: 1 inch.

3.05 - FIELD QUALITY CONTROL

A. Perform field inspection and testing under provisions of Section 014500.

B. Perform tests and analysis of fill material in accordance with ANSI/ASTM D1557.

C. Perform compaction tests at a rate of one for every 10 cubic yards of material placed.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Excavation for slabs-on-grade, paving and landscaping.

B. Excavation for site structures.

C. Excavation for recharge basins.

D. Site excavation.

E. Refer to Section 312333 for pipe trenching requirements including underground utility mapping.

1.02 - RELATED SECTIONS

A. Section 312213 – Rough Grading.

B. Section 312323.13 - Backfilling: Backfilling excavated material.

C. Section 314116.13 – Excavation Support and Protection

D. Section 312333 - Trenching

1.03 - QUALITY ASSURANCE

A. Do not excavate wet or frozen materials without written approval from the Engineer.

B. Provide safety barricades around open excavations.

C. If excavation exceeds a depth of four feet (1.2 m), place temporary sheeting. Refer to Section 314116.13.

1.04 - FIELD MEASUREMENTS

A. Verify that survey benchmark and intended elevations for the work are as indicated.

1.05 - COORDINATION

A. Coordinate work under provisions of Section 013100.

B. Coordinate excavation with installation of sheeting and pile work (if required).

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.01 - PREPARATION

A. Comply with the requirements contained in Section 312333 – Trenching regarding the location, verification, and mapping of underground utilities (pipelines, water, gas, electrical conduit, electricity, etc.) prior to starting any excavation required under this project.

B. Identify required lines, levels, contours and datum.

C. Identify known underground, above ground and aerial utilities. Stake and flag locations.

D. Notify utility company to remove or relocate utilities, if required.

E. Protect above and below grade utilities which are to remain.

F. Protect plant life, lawns and other features remaining as a portion of final landscaping.

G. Protect bench marks, existing structures, fences, sidewalks, paving and curbs from excavation equipment and vehicular traffic.

H. Notify the Engineer prior to commencement of excavation.

3.02 - EXCAVATION

A. Underpin adjacent structures that may be damaged by excavation work, including utilities and pipe chases.

B. Excavate for structures, building foundations, slabs-on-grade, paving, drainage or sanitary structures, sidewalks, landscaping to the limits as indicated on the plans and extend a sufficient distance from walls, piers, footings and curbs to provide adequate clearances for construction operations, including sheeting and bracing, if required, and for inspection purposes.

C. Trim approximately the last four (4) inches of excavation subgrade in earth with a smooth edged bucket or by hand just prior to placement of concrete or concrete reinforcement.

D. Machine slope banks to angle of repose or less, until shored.

E. Excavation cut not to interfere with normal 45 degree bearing splay of foundations.

F. Grade top perimeter of excavation to prevent surface water from draining into excavation.

G. Hand trim excavation. Remove loose matter.

H. Remove lumped subsoil, boulders, and rock.

I. Notify Engineer of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.

J. Correct unauthorized excavation at no extra cost to Owner in accordance with Section 312323.13.

K. Stockpile excavated material in area designated on site and remove excess material not being reused from site.

L. While in the course of excavating for new work, and existing underground electrical feeders are encountered that were not shown on the Drawings, then immediately notify the Engineer. The Engineer will promptly investigate. If the Engineer determines that the condition justifies an adjustment in compensation then a change order will be prepared.

3.03 - FIELD QUALITY CONTROL

A. Perform field inspection and testing under provisions of Section 014500.

B. Provide for visual inspection of bearing surfaces.

3.04 - PROTECTION

A. Protect work under provisions of Section 015000.

B. Protect excavations by methods required to prevent cave-in or loose soil from falling into excavation.

C. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.

3.05 - DISPOSAL OF MATERIALS

A. All suitable excavated material shall be utilized for backfill and embankment or for Owner selected stockpiling. Stockpile on-site or transport suitable material off site and bring back when conditions allow the stockpiling or filling operations to begin.

B. All excess suitable excavated material shall become the property of the Contractor and be disposed of by the Contractor in accordance with governing regulations and laws. The cost for hauling and disposal of excess suitable excavated material shall be included in the price as bid.

C. All unsuitable excavated material that cannot be used for backfill shall become the property of the Contractor and be hauled and disposed of off-site in accordance with governing regulations and laws. The cost for hauling and disposal of unsuitable material shall be included in the price as bid.

3.06 - MATERIALS

A. The Contractor shall remove unsuitable materials in excavations, which are incapable of supporting structures, as determined by an independent soil-testing laboratory, to the extent and depth directed by the Engineer. Refill and compact the excavation with Type C - Sand fill as defined in Section 312323.13. If required and directed by the Engineer, import Type C – Sand. The trucking and material costs associated with the import of Type C material will be paid for as “Extra Work” in accordance with the provisions contained in the Contract. The equipment cost used to offload and place imported material shall be included in the price as bid. The cost for filling and compacting the imported material shall also be included in the price as bid.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Building perimeter and site structure backfilling to sub-grade elevations.

B. Site filling and backfilling.

C. Fill under slabs-on-grade and paving.

D. Consolidation and compaction.

E. Fill for over-excavation.

F. Flowable Fill material for abandoned in place pipelines and structural backfill alternative.

1.02 - RELATED SECTIONS

A. Section 314116.13 - Excavation Support and Protection

B. Section 312213 - Rough Grading

C. Section 312316 - Excavation

D. Section 312333 - Trenching

E. Section 329119.13 - Landscape Grading and Topsoil

F. Section 033000 - Concrete

1.03 - REFERENCES

A. ANSI/ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.

B. ANSI/ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb. Rammer and 18-inch Drop.

C. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

1.04 - SUBMITTALS

A. Submit under provisions of Section 013300.

B. Test Reports: Submit sieve analysis for each type fill to be used, compaction reports and flowable fill mix design.

1.05 - QUALITY ASSURANCE

A. Do not backfill over or with wet or frozen materials.

B. Field quality control laboratory tests will be paid for out of the cash allowance for testing services. All Coordination with the testing lab shall be the Contractor's responsibility and be included in the price as bid.

1.06 - COORDINATION

A. Coordinate work under provisions of Section 013100.

B. Coordinate and make all arrangements to have the testing laboratory present so that tests can be made. The Engineer may stop backfilling operations until such time as the testing laboratory is on-site to make tests or take required samples.

PART 2 - PRODUCTS

2.01 - FILL MATERIALS

A. Type A – Coarse Stone: Angular, washed natural stone; free of shale, clay, friable material, sand, debris; graded in accordance with ANSI/ASTM C136, within the following limits:

Sieve Size	Percent Passing
2-inch (50 mm)	100
1-inch (25 mm)	95
3/4-inch (19 mm)	75 - 90
5/8-inch (16 mm)	35 - 60
3/8-inch (9.5 mm)	15-35
No. 4 (4.75 mm)	<5

B. Type B - Pea Gravel: Natural stone; washed, free of clay, shale, organic matter; graded in accordance with ANSI/ASTM C136, to the following:

1. Minimum Size: 1/4-inch (6.4 mm).

2. Maximum Size: 5/8-inch (16 mm).

C. Type C - Sand: Natural river or bank sand; washed, free of silt, clay, loam, friable or soluble materials, or organic matter; graded in accordance with ANSI/ASTM C136, within the following limits:

Sieve Size	Percent Passing
No. 4	100
No. 14	10 - 100

No. 50	5 - 90
No. 100	4 - 30
No. 200	0 - 1

D. Type D - Subsoil: Reused, excavated material, graded, free of lumps, rocks and gravel larger than 3 inches in size, debris and contaminants; no more than 15% passing the No. 200 sieve.

E. Type E - ¾ inch Crushed Blue Stone Surfacing: Angular, washed blue stone; free of shale, clay, friable material, sand, and debris.

F. Flowable Fill:

1. Ready-mix Controlled Low Strength Material used as an alternative to compacted soil, and is also known as controlled density fill, and several other names, some of which are trademark names of material suppliers. Flowable fill (Controlled Low Strength Material) differs from portland cement concrete as it contains a low cementitious content to reduce strength development for possible future removal.

2. Unless specifically approved otherwise, by the Engineer, flowable fill used as structural fill shall be designed as a permanent material, not designed for future removal. Design strength for this permanent type flowable fill shall be a compressive strength of 2.1 MPa (300 psi) minimum at 28 days. Chemical admixtures may also be used in flowable fill to modify performance properties of strength, flow, set and permeability.

3. Excavatable Flowable fill – flowable fill used as pipe filing and alternative trench backfill shall be designed with a compressive strength that will allow excavation as either machine tool excavatable at compressive strength of 1.5 MPa (200 psi) maximum at 1 year, or hand tool excavatable at compressive strength of 0.7 MPa (100 psi) maximum at 1 year.

4. Mix design shall produce a consistency that will result in a flowable product at the time of placement which does not require manual means to move it into place.

5. Flowable fill Mix Design: Provide flowable fill mix design containing cement and water. At the contractor's option, it may also contain fly ash, aggregate, or chemical admixtures in any proportions such that the final product meets the strength and flow consistency, and shrinkage requirements included in this specification.

6. Test and Performance - Submit the following data:

a. Flowable fill shall have a minimum strength as noted above.

b. Flowable fill shall have minimal subsidence and bleed water shrinkage. Evaporation of bleed water shall not result in shrinkage of more than 10.4 mm per m (1/8 inch per ft.) of flowable fill depth (for mixes containing high fly ash content). Measurement of a Final Bleeding shall be as measured in Section 10 of ASTM C 940 “Standard Test Method for Expansion and Bleeding of Freshly Mixed Grouts for Preplaced-Aggregate Concrete in the Laboratory.

PART 3 - EXECUTION

3.01 - EXAMINATION

A. Verify existing conditions and substrate.

B. Verify fill materials to be reused are acceptable.

C. Verify items to be buried during backfilling process have been inspected prior to backfilling.

3.02 - PREPARATION

A. Compact subgrade to 95 percent maximum dry density in accordance with ANSI/ASTM D1557 or ASTM D2922.

B. Cut out soft areas of subgrade not capable of in situ compaction. Backfill with Type C fill and compact to density equal to or greater than requirements for subsequent backfill material.

3.03 - BACKFILLING

A. Backfill areas to contours and elevations with unfrozen materials.

B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy materials.

C. Place and compact materials in continuous layers not exceeding 6 inches compacted density.

D. All backfilled materials shall be compacted to 95 percent maximum dry density in accordance with ANSI/ASTM D1557 or ASTM D2922. Maintain optimum moisture content to attain required density.

E. Employ a placement method that does not disturb or damage structures or other items against which material is backfilled.

F. Backfill against supported structures. Do not backfill against unsupported structures.

G. Backfill simultaneously on each side of structure.

H. Make grade changes gradual. Blend slope into level areas.

I. Remove surplus backfill materials from site.

J. Immediately remove suitable backfill material from the site if stockpiling the material is not possible due to site restraints such as: insufficient area to store the material in a safe and secure manner, stockpiling the material would present interference with the operations of the facility, stockpiling the material hinders the operations of other contractors, stockpiling the material does not comply with the adopted Site Utilization Plan specified to be provided in Section 011400 – Work Restrictions. Truck suitable backfill material back to the site as soon as conditions are amenable to continuing the backfilling operations.

K. Leave fill material stockpile areas completely free of excess fill materials.

L. Remove temporary sheeting, as backfilling progresses, under provisions of Section 314116.13.

3.04 - TOLERANCES

A. Maximum Variation From Top Surface of Backfilling Under Paved Areas: 1/4 inch.

B. Maximum Variation From Top Surface of General Backfilling: 1 inch.

3.05 - FIELD QUALITY CONTROL

A. Perform field inspection and testing under provisions of Section 014500.

B. Perform field tests and analysis of fill material in accordance with ANSI/ASTM D1557 or ASTM D2922.

C. If tests indicate work does not meet specified requirements, remove work, replace and retest at no cost to Owner.

D. Unless additional testing is required by the Engineer, compaction tests shall be taken at the following rates:

1. Concrete Structures: One test per 5 vertical feet (1.5 m) of structure. Compaction tests required for compacted fill below and adjacent to the concrete structures (i.e., tankage and building foundations).

2. Pavement Subgrade: One test per 500 square feet (50-sq. m) of subgrade immediately prior to placing subbase.

3. Concrete Flatwork: One test per 400 square feet (40-sq. m) of flatwork.

4. Curbing: one test per 100 linear feet (30 m).

5. Piping Installations: Compaction testing at horizontal intervals of 100 feet at the spring-line of the pipe and after each two (2) vertical feet of backfilling thereafter.

6. Precast Concrete Structures: One (1) compaction test per 500 square feet of structure.

E. It is the Contractor's responsibility to coordinate the efforts of the testing laboratory and to have a technician present from the laboratory so those tests can be made.

3.06 - PROTECTION

A. Protect finished work under provisions of Section 015000.

B. Re-compact fills subjected to vehicular traffic.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Excavate trenches for piping and utilities.

B. Compacted bedding and backfill around and over piping and utilities to subgrade elevations.

C. Backfilling and compaction.

1.02 - RELATED SECTIONS

A. Section 312213 – Rough Grading: Topsoil removal from site surface.

1.03 - REFERENCES

B. ANSI/ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.

C. ANSI/ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb Rammer and 18-inch Drop.

1.04 - SUBMITTALS

A. Submit under provisions of Section 013300.

B. Test Reports: Submit a sieve analysis for backfill to be used.

1.05 - QUALITY ASSURANCE

A. Do not excavate wet or frozen materials without written approval from the Engineer.

B. Do not backfill over or with wet or frozen materials.

C. When an excavation exceeds a depth of 4 feet (1.2 m), the Contractor shall place temporary sheeting. Comply with the requirements contained in Section 314116.13 and all OSHA standards.

D. The Contractor shall include in the as-bid price the costs for providing a backhoe, equivalent to a Ford 755, with operator and laborer to dig test holes at locations selected by the Engineer. Test holes may be dug to a depth of eight (8) feet or less. Hand digging shall be provided when in the opinion of the Engineer the use of machinery may cause damage to existing lines. The Contractor shall provide seven (7) non-consecutive days (eight hours per day) in the bid. Test holes shall remain open until tie distances are obtained. Tie distances to exposed piping, located via test holes, shall be obtained by the Contractor and recorded on record drawings prepared by the Contractor as work of Section 017839 – Project Record Documents. Do not backfill test holes until directed by the Engineer. Photographs of exposed piping shall be taken by the Contractor and kept on file for the duration of the project. Duplicate prints shall be provided to the Engineer.

Annotate on the back of each print the location of the photograph, the name of the exposed line, and the date it was taken. All photographs shall be taken using a digital camera. The digital file shall be provided to the Engineer. All prints shall be 4 inches by 6 inches. Trenching for new buried pipelines shall not be started until the locations of existing pipes and utilities are verified.

E. The Contractor shall also employ the services of a company regularly engaged in locating underground utilities and also include the costs for it in the bid price. The services shall be provided by a company specializing in locating underground facilities such as pipelines, electrical conduit, water lines, and utilities such as gas and electricity and have at least three years of experience. The Contractor shall include six (6) non-consecutive days (at 8 hours each day) in the bid price. The work shall be conducted during early morning hours if deemed so by the company, which would result in more accurate findings. The company shall be equipped with the latest state-of-the-art equipment. The company shall place ground markers where utilities are mapped, and develop a sketch showing tie distances to all mapped utilities. Use different colored markers for each separate utility run. Immediately take digital photographs to document the mapped utilities and provide same to the Engineer.

F. Each unused day for exploration digging shall be credited to the Owner at $1,500 per day (machine, operator, and laborer). Each unused hour for the utility mapping company shall be credited to the Owner at the amount usually billed by the utility mapping company. The Contractor shall perform as much underground exploration and underground mapping as is necessary to accurately satisfy these specifications. The Owner will not pay for additional days of exploration and / or mapping services. The Owner/Engineer makes no claim that the labor, equipment, material and services specified above is sufficient to properly satisfy the requirements contained herein these specifications. Include separate line items in the Schedule of Values for all items subject to Owner's credit.

G. Field quality control laboratory tests will be paid for out of the cash allowance for testing services. Coordination with the testing lab shall be the Contractor's responsibility and be included in the price as bid.

H. Provide safety barricades around open excavations.

1.06 - FIELD MEASUREMENTS

A. Verify that survey benchmark and intended elevations for the work are as shown on plans.

1.07 - COORDINATION

A. Coordinate work under provisions of Section 013100.

B. Coordinate trenching with installation of pipe or conduit.

C. Coordinate and make all arrangements to have the testing laboratory present so that tests can be made. The Engineer may stop trenching operations until such time as the testing laboratory is on-site to make tests or take required samples.

PART 2 - PRODUCTS

2.01 - MATERIALS

A. Refer to Section 312323.13 for gradation requirements.

PART 3 - EXECUTION

3.01 - EXAMINATION

A. Verify that existing site conditions are suitable for trenching operations to take place in that existing structures, piping, and utilities have been located as not being in conflict with the new work. Refer to paragraph 1.05 herein.

B. Verify fill materials to be reused are acceptable.

C. Verify, with the Engineer, that excavated material is acceptable for fill. If directed by the Engineer, send soil samples to the testing laboratory to determine its ability to support intended loads.

D. Test piping prior to backfilling in accordance with the requirements contained in specification sections 221116 – Plumbing Piping, 017550 – Process Pipe and Tank Testing and 402336 – Air and Water Process Piping.

E. Do not backfill any item until the Engineer has fully inspected the work. Expose the work that was not inspected by the Engineer, when so directed by the Engineer.

3.02 - PREPARATION

A. Identify and confirm the location of all underground piping shown on the Contract Drawings prior to excavating for pipe or structures. Dig test holes and employ the underground utility mapping company to determine the existence and location of underground utilities prior to starting any underground work.

B. Identify required lines, levels, contours, and datum.

C. Maintain and protect existing utilities remaining which pass through the work area.

D. Protect plant life, lawns, rock outcropping, and other features remaining as a portion of final landscaping.

E. Protect benchmarks, existing structures, fences, sidewalks, paving, and curbs from excavation equipment and vehicular traffic. Any item damaged by the Contractor shall be promptly repaired at the Contractor's expense.

F. Protect above and below grade utilities that are to remain.

G. Excavate unsuitable material in accordance with the requirements contained in Section 312316, paragraph 3.05. Import suitable material in accordance with the requirements contained in Section 312323.13, paragraph 3.05.

3.03 - EXCAVATION

A. Excavate subsoil required for piping.

B. Cut trenches to the dimensions shown on the plans.

C. Excavation shall not interfere with normal 45 degree bearing splay of foundations.

D. Hand trim excavation. Hand trim for bell and spigot pipe joints. Remove loose matter.

E. Remove lumped subsoil, boulders, and rock.

F. For trenches made in solid rock, excavate to a depth of 1 foot below the proposed pipe invert.

G. Correct unauthorized excavation at no cost to Owner in accordance with Section 312323.13.

H. Stockpile excavated material in area designated on site and remove excess material not being used from site. Remove excavated material from site.

3.04 - BACKFILLING

A. In accordance with Specification Section 312323.13 – Backfilling.

3.05 - CLEANING

A. Remove surplus backfill materials from site.

B. Leave fill material stockpile areas completely free of excess fill materials.

3.06 - PROTECTION

A. Protect finished work under provisions of Section 015000.

END OF SECTION

PART 1 – GENERAL

1.01 – SECTION INCLUDES

A. Wood and steel sheeting.

B. Sheeting box.

C. Steel H-section soldier piles.

D. Lagging.

1.02 – RELATED SECTIONS

A. Section 312316 – Excavation.

B. Section 312323.13 - Backfilling.

C. Section 312333 - Trenching.

1.03 – REFERENCES

A. Occupational Safety and Health Standards – Excavations; Final Rule (29 CFR Part 1926) – OSHA Standards.

1.04 - SUBMITTALS

A. Submit under provisions of Section 013300.

B. Shop Drawings: Submit drawings and details of sheeting for information purposes only. These drawings will not be reviewed. Include design and supporting calculations prepared by a professional engineer licensed in the state of New York.

1.05 - QUALITY ASSURANCE

A. Perform all work of this section in accordance with OSHA Standards and approved shop drawings.

B. Sheeting shall be installed by persons regularly engaged in sheeting installation and who have a minimum of five years of experience with the type of system being installed.

C. Sheeting shall be installed under the direct supervision of the professional engineer who designed the sheeting system. This does not require the professional engineer to be present during all phases of its installation, but it does require him to inspect the work as it progresses on a part-time basis, sufficient to adequately certify the system. The engineer shall certify, in writing, that the

sheeting was installed in accordance with the supporting calculations and that the installer complied with recognized procedures, methods and techniques.

D. An amount equal to 15% of the scheduled value of the excavation support and protection will be withheld until the certification has been provided for record purposes only.

1.06 - COORDINATION

A. Coordinate work under provisions of Section 013100.

B. Coordinate work with all other sections requiring temporary sheeting and bracing.

PART 2 - PRODUCTS

2.01 – MATERIALS

A. Wood Sheeting: Hardwood species of size and dimensions capable of being driven to the required depths and capable of supporting excavation sides and soil pressures when braced; free from wormholes, wind shakes, loose knots, decayed or unsound portions or defects which would impair its strength or tightness; 3 inches thick minimum.

B. Steel Sheeting: ASTM A328, corrugated "Z" shape cross-section; of size and dimensions capable of being driven to the required depths and capable of supporting excavation sides and soil pressures when braced; structurally sound; special shapes for corner construction and transition points.

C. Sheeting Boxes: Steel, of size and dimensions capable of supporting excavation sides and soil pressures; structurally sound.

D. Structural Steel: ASTM A36.

E. Tiebacks: ASTM A722, ASTM A416

PART 3 - EXECUTION

3.01 - EXAMINATION

A. Verify existing soil substrate site conditions and elevations are as indicated on the plans.

B. Verify proposed locations of excavations are as indicated on the plans.

C. Monitor excavation support and protection systems daily during excavation progress and for as long as excavation remains open. Promptly correct bulges, breakage or other evidence of movement to ensure that systems are stable.

D. Promptly repair damages to adjacent facilities caused by installing excavation support and protection systems.

3.02 - PREPARATION

A. Excavate to a depth no greater than 4 feet from existing grade.

B. Assemble and drive the sheeting in accordance with shop drawings prepared by the contractor's engineer.

3.03 - INSTALLATION - SHEETING

A. Drive sheeting in place to thoroughly support both sides of the excavation using a sheeting hammer. Use a steam or pneumatic hammer for steel sheeting.

B. Water jetting of sheeting will not be permitted. Do not loosen adjacent ground which might result in collapse.

C. Install walls and braces or shores tight and in accordance with shop drawings prepared by the contractor's engineer.

3.04 - INSTALLATION - SHEETING BOX

A. Place box in trench utilizing a means which will not damage structural integrity of the box.

B. Excavate ahead of the sheeting box only enough to advance the sheeting box and only immediately prior to moving the sheeting box.

C. Backfill on both sides of the sheeting box as it is moved.

3.05 - REMOVAL OF SHEETING

A. Remove sheeting only as backfilling progresses.

B. Carefully remove sheeting such that compacted backfill is not displaced. Add additional backfill to the areas vacated by the sheeting.

C. All sheeting is to be removed from the site once its use is no longer required.

D. Removing sheeting in stages to avoid disturbing underlying soils or damaging structures, pavements, facilities and utilities.

E. The contractor may request permission to leave sheeting or bracing in place. The Engineer may grant permission on the condition that the cost of sheeting and bracing be borne by the contractor.

F. Sheeting to be left in place shall be at cut and removed to a minimum depth of 5 feet below finished grade elevation or 1 foot below lowest crossing utility/pipeline, whichever is deeper.

END OF SECTION

PART 1 - GENERAL

1.01 - DESCRIPTION

A. Work covered by this Section includes the restoration of surfaces damaged or disturbed because of the Contractor's operations and installation of the work.

B. Contract G - The Contractor's cost associated with work of this Section shall be included in the lump sum price (Base Bid) as bid.

C. Contract S – Costs associated with work of this section shall be covered by the Unit Prices as bid.

1.02 - RELATED SECTIONS

A. Related Sections shall include all applicable technical specification sections.

1.03 - QUALITY ASSURANCE

A. Provide at least one person who shall be present at all times during this portion of Work and who is thoroughly familiar with the types of materials being installed, the best methods for their installation and who shall direct all work performed under this Section.

B. Grades and surfaces shall be restored so as to be equal to or better than the original conditions which existed at the time they were damaged or disturbed, except as otherwise specified or shown on the Drawings.

C. Restoration of surfaces under the jurisdiction of public authorities or public utilities shall be in accordance with the requirements of such authorities. Ascertain these requirements, procure necessary permits, arrange for required inspections, and pay all fees, deposits, and other charges that may be required by the authorities.

D. Existing pavements, curbs, and walks to be restored shall be replaced with new pavement equivalent to or superior to the existing in quality, thickness, bearing capacity and surface finish, except where otherwise specified.

E. Replaced pavement shall be free from all noticeable sags, settlements, bumps, humps, cracks or other defects. Other than possibly color, the replaced pavement shall be unnoticeable from the existing pavement.

1.04 - SUBMITTALS

A. See Section 013300.

B. Submittals required are identical to those required under other Sections. If submittals have been made and approved under the other Sections, and is applicable to this Section, then a notification to this effect will be sufficient.

C. At the completion of the Work under this Section, submit copies of letters of approval from all authorities having jurisdiction over the areas that were restored.

1.05 - SCHEDULING

A. It is the intent of this Section to restore all surfaces as soon as possible to cause the least amount of inconvenience to the existing plant operation.

B. Replace all pavements as specified elsewhere in these specifications.

C. Replace all items as soon as possible after the installation of the work, with special attention directed at those that control traffic, protect property and lives, create hazards when not in place or are otherwise deemed essential.

D. The phrase “after installation of the work” means after the installation of the work that necessitated the removal of an item or items.

1.06 - MAINTENANCE AND GUARANTEE

A. The maintenance and guarantee requirements of other applicable Sections are required under this Section.

B. Maintain and care for all restoration work.

C. Continually maintain all areas where pavement has been removed to provide a smooth, dust-free surface by adding fill and dust control materials and grading daily, or more frequently when required.

PART 2 - PRODUCTS

2.01 - REUSE OF EXISTING MATERIALS

A. Curbs, walks, roads, fences, walls, signs and other items which have been removed, knocked down, or displaced shall be replaced with existing materials when, in the opinion of Engineer, such materials are in acceptable condition. Where such materials have been damaged, marred, broken, or are otherwise in an unacceptable condition, provide replacements of equal or better quality, appearance, size and type, at the Contractor’s expense.

PART 3 - EXECUTION

3.01 - INSPECTION

A. Carefully inspect the work installed under other Sections and verify that all such work is complete to the point where restoration of surfaces may properly commence and to insure the unnecessary disturbance of restored surfaces at a later date.

B. Verify schedule of work for conformance to allowable planting times.

C. Do not begin restoration work until conditions are satisfactory.

3.02 - GRASS AND LAWNS

A. Comply with the requirements contained in Section 329219 - SEEDING

3.03 - PLANTS AND REPLANTING

A. As soon as possible after construction operations have moved to another portion of the site, replant plants, shrubs, trees and other vegetation that was taken up in their original locations, provided that they survived and show indications of continued life.

B. Replace with the same kind and size, any plantings, trees, shrubs or other vegetation that fail to survive the moving operation.

3.04 – ASPHALTIC CONCRETE PAVEMENT

A. All work and materials shall conform to Section 321216.

B. Cut back undisturbed pavement surfaces and binder course at least 12 inches beyond the walls of the backfilled excavations and trenches, with straight and vertical edges to form an undisturbed ledge of base course under the new pavement.

C. Thoroughly roll finished surfaces and match existing adjacent surfaces as nearly as practicable.

D. Replace all pavement markings, as they originally existed.

3.05 - SIDEWALKS

A. Portland Cement Concrete - Replace walks after backfill has been brought up to proper subgrade elevation and compacted.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Recycled concrete aggregate base course.

1.02 - RELATED SECTIONS

A. Section 312213 – Rough Grading: Preparation of site for base course.

B. Section 312323.13 – Backfilling.

C. Section 312333 – Trenching.

1.03 - REFERENCES

A. ANSI/ASTM C88 - Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.

B. ANSI/ASTM C136 - Sieve Analysis of Fine and Coarse Aggregates.

C. ANSI/ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb Rammer and 18-inch Drop.

D. ASTM D4318 - Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

1.04 - SUBMITTALS

A. Submit under provisions of Section 013300.

B. Test Reports: Submit a sieve analysis for the aggregate base course used.

1.05 - DELIVERY, STORAGE AND HANDLING

A. Deliver, store and handle products to the site under provisions of Section 016500.

B. Do not handle aggregate in any manner which will cause segregation of large or fine particles.

PART 2 - PRODUCTS

2.01 - MATERIALS

A. Aggregate Base Course: Angular, crushed, recycled concrete; free of shale, clay, friable materials and debris; graded in accordance with ANSI/ASTM C136 within the following limits:

Sieve Size	Percent Passing
2 inches	100
1 inch	80-100
1/4 inch	50-85
3/8 inch	55-75
No. 10	30-70
No. 40	15-40
No. 200	6-12

B. Material retained on the 1/2 inch sieve is coarse aggregate.

C. Coarse aggregate shall not have more than 10 percent by weight of flat or elongated pieces. A flat or elongated piece is defined as being three times greater in the largest dimension as compared to its least dimension.

D. The portion of the aggregate base course which passes the No. 40 screen shall have a plasticity index of one as tested in accordance with ASTM D4318.

PART 3 - EXECUTION

3.01 - EXAMINATION

A. Verify existing conditions and substrate.

B. Verify elevations of subgrade are as indicated on the plans.

C. Verify that subgrade is properly compacted and ready to receive work of this section.

D. Beginning work of this section means acceptance of existing conditions.

3.02 - PREPARATION

A. Fine grade and compact subgrade to 95 percent maximum dry density in accordance with ANSI/ASTM D1557.

3.03 - AGGREGATE PLACEMENT

A. Spread course aggregate over prepared subgrade to a total compacted thickness as indicated on the plans.

B. Place aggregate in 3 inch layers and compact by roller.

C. Level and contour surfaces to elevations and gradients indicated.

D. Add small quantities of fine aggregate to coarse aggregate as appropriate to assist compaction.

E. Compact placed aggregate materials to achieve 92% maximum dry density in accordance with ANSI/ASTM D1557. Maintain optimum moisture content to attain required density.

F. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.

G. Use mechanical vibrating tamping in areas inaccessible to compaction equipment.

H. New pavement must be placed on the properly compacted aggregate base course within 24 hours of final compaction. If aggregate base course is left open for more than 24 hours, re-compact and retest in accordance with ANSI/ASTM D1557.

3.04 - TOLERANCES

A. Maximum Variation From Flatness: 1/4 inch measured with 10 foot straight edge.

B. Maximum Variation From Scheduled Compacted Thickness: 1/4 inch.

C. Maximum Variation from True Elevation: 1/4 inch.

3.05 - FIELD QUALITY CONTROL

A. Perform field inspection and testing under provisions of Section 014500.

B. Perform compaction testing in accordance with ANSI/ASTM D1557.

C. If tests indicate work does not meet specified requirements, remove work, replace and retest at no cost to Owner.

D. Frequency of Tests: One test per 500 sq ft. immediately prior to paving.

END OF SECTION

PART 1 - GENERAL

1.01 - SECTION INCLUDES

A. Concrete sidewalks.

B. Formwork.

1.02 - RELATED SECTIONS

A. Section 312213 - Rough Grading: Preparation of subgrade for sidewalk placement.

1.03 - REFERENCES

A. ACI 301 - Structural Concrete for Buildings.

B. ANSI/ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcement.

C. ANSI/ASTM D1751 - Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction.

D. ASTM C33 - Concrete Aggregates.

E. ASTM C94 - Ready Mix Concrete.

F. ASTM C150 - Portland Cement

G. ASTM C260 - Air-Entraining Admixtures for Concrete.

H. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.

I. ASTM C494 - Chemical Admixtures for Concrete.

1.04 - SUBMITTALS

A. Submit under provisions of Section 013300.

B. Product Data: Provide data on joint filler, admixtures and curing compounds.

C. Supplier: Submit name of concrete supplier prior to the placement of any concrete on the project.

D. Design Data: Provide a design mix for each type of concrete to be used on the project.

E. Certificates: Submit receipts of all concrete deliveries, indicating source, date, contractor, amount of concrete, concrete strength, truck number and time load was batched.

F. Testing Firm: Submit name of testing firm to be performing tests on concrete.

1.05 - PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 017839.

B. Accurately record locations of each day's concrete pour.

1.06 - QUALITY ASSURANCE

A. Perform work in accordance with ACI 301.

B. Obtain concrete only from approved suppliers and maintain the same source throughout the project.

1.07 - DELIVERY, STORAGE AND HANDLING

A. Deliver, store and handle products to the site under provisions of Section 016500.

B. Deliver concrete in accordance with ASTM C94, Alternative No. 2.

C. Place all concrete within 90 minutes of time load was batched.

1.08 - ENVIRONMENTAL REQUIREMENTS

A. Do not place concrete when base surface temperature is less than 40 degrees F, or if surface is wet or frozen.

PART 2 - PRODUCTS

2.01 - MATERIALS

A. Cement: ASTM C150, air entraining, Type 1A Portland, gray color.

B. Aggregates: ASTM C33.

C. Water: Potable and not detrimental to concrete.

D. Reinforcement: ANSI/ASTM A185 plain welded steel wire fabric; in flat sheets; uncoated finish.

2.02 - ACCESSORIES

A. Forms: Douglas Fir plywood type; solid, sound, undamaged sheets.

B. Joint Filler: ANSI/ASTM D1751; 1/2 inch thick.

C. Air Entraining Admixture: ASTM C260.

D. Chemical Admixture: ASTM C494, type as required.

E. Curing Compound: ASTM C309, Type 1, Class A.

F. Form Release Agent: Colorless material which will not stain concrete or absorb moisture.

G. Joint Sealant: ASTM C920,,Type M, Grade P; SL-2 by Sonneborn or equal.

2.03 - MIXES

A. Concrete shall be mixed and prepared in accordance with the approved mix design and ASTM C94, Alternative No. 2.

B. The mix shall be such that the concrete shall attain the following characteristics:

1.	Compressive Strength (28 days):	4,000 psi.
2.	Slump:	2½ to 3½ inches.
3.	Air Entrainment:	6% ±1%.

C. Use chemical admixtures only when approved by the Engineer. Use of admixtures will not relax placement requirements.

PART 3 - EXECUTION

3.01 - EXAMINATION

A. Verify existing conditions and substrate.

B. Verify datum and all elevations are as indicated on the plans.

C. Verify compacted granular subbase has been properly prepared and is ready to receive work of this section.

D. Beginning of installation means installer accepts existing conditions.

3.02 - PREPARATION

A. Compact base to minimum 92 percent maximum dry density in accordance with ANSI/ASTM D1557.

B. Moisten base to a minimum depth of 1/2 inch to minimize absorption of water from fresh concrete.

C. Coat surfaces of manhole and catch basin frames with oil to prevent bond with concrete pavement.

D. Place and secure forms to correct location, dimension and profile.

E. Assemble formwork to permit easy stripping and dismantling without damaging concrete. Coat forms with form release agent.

3.03 - INSTALLATION

A. Place joint filler vertical in position in straight lines. Secure to formwork during concrete placement.

B. Place reinforcement as indicated on the plans. Interrupt reinforcement at expansion joints.

C. Place concrete in accordance with ACI 301.

D. Ensure reinforcement and formed joints are not disturbed during concrete placement.

E. Place concrete continuously between predetermined construction joints. Do not break or interrupt successive pours such that joints occur.

F. Vibrate concrete adjacent to forms.

G. Place concrete to pattern indicated.

H. Place expansion joints with joint filler at 20 foot intervals.

I. Place scored contraction joints at 4 foot intervals.

J. Place joint filler between paving components and building or other appurtenances and in expansion joints.

K. Apply a light broom finish perpendicular to traffic.

L. Place curing compound on exposed concrete surfaces immediately after finishing. Apply in accordance with manufacturer's instructions.

3.04 - FIELD QUALITY CONTROL

A. Field inspection and testing shall be performed under provisions of Section 014500.

B. Take six concrete test cylinders for every 50 cu. yds. or fraction thereof of each class of concrete placed each day.

C. Cure test cylinders on site under same conditions as concrete sidewalk.

D. Take one slump test for each set of test cylinders taken.

E. Concrete not meeting slump requirements will be rejected.

F. Concrete represented by cylinders which do not meet required strength will be removed and replaced at no additional cost to the Owner.

3.05 - PROTECTION

A. Protect finished work under provisions of Section 015000.

B. Immediately after placement, protect sidewalk from premature drying, excessive temperatures and mechanical injury.

C. Protect sidewalk from damage until project is accepted by the Owner.

END OF SECTION

PART 1 - GENERAL

1.01 - DESCRIPTION

A. All instruments to be installed as part of a piping system shall be mechanically installed by the Plumbing or General Contractor as noted on the Contract Plans. All instruments to be installed adjacent to the piping system shall be mechanically installed by the Plumbing or General Contractor as noted on the Contract Plans. The Electrical contractor shall supply and electrically wire, terminate, install instruments control components/boxes specified and as shown on the Contract Plans. Specified instruments to be mechanically installed in piping system by the Plumbing or General Contractor include, but are not limited to, flow meters, pressure switches, temperature switches, and pressure transmitters as shown on the Contract Plans.

B. Work covered under this Section includes the furnishing of all labor, materials, equipment and services necessary for the Prime Electrical Contractor to furnish and install or electrically install the following according to the Contract Plans:

1. Five (5) total level probe(s): influent pump station (1); pre-equalization pump station (1); effluent pump station (1); sludge holding tank (2).

2. Three (3) total magnetic type flow meters for: flow rate from influent pump station (1); flow rate from effluent pump station (1); Flow rate from pre-equalization pump station (1).

3. Eleven (11) total floats for high and low level monitoring: high level influent pump station (2); low level float influent pump station (1); high level effluent pump station (1); low level effluent pump station (1); high level pre-equalization tanks (2); high level pre-equalization pump station (1); low level pre-equalization pump station (1); high level sludge holding tank (2).

4. One (1) total digital recorder: combined input from influent pump station flow, influent pump station level, effluent pump station flow, effluent pump station level, pre-equalization pump station flow, pre-equalization pump station level, and sludge holding tank (x2) level.

5. Spare parts as specified herein.

C. Also included as Work of this Section is the design, fabrication, delivery, startup and supply of the following control panel:

1. CP-1: STP PUMP STATIONS CONTROL PANEL

D. Additional instrumentation, devices and control panels are furnished by other contracts (P & G) to be installed and wired by Contract E. Contract E shall coordinate with other contracts as

necessary to arrange for receiving and installing devices and instrumentation by others as noted in the contract documents.

E. Comply with the requirements contained in the following sections as it relates to work of this Section:

1. Section 013100 – Project Management and Coordination
2. Section 013300 – Submittals
3. Section 014500 – Quality Control
4. Section 016100 - Basic Product Requirements
5. Section 016500 – Product Delivery, Storage and Handling
6. Section 017500 – Starting and Adjusting
7. Section 019213 – Operating and Maintenance Data
8. Section 432113 – Centrifugal Liquid Pumps
9. Section 431100 – Aeration Equipment Blowers

F. All control panels listed herein shall be furnished and installed by the Electrical Contractor.

G. The Electrical Contractor shall coordinate the design of the control panel(s) with the vendor-supplied equipment furnished under other Sections such that the system is fully integrated and completely automatic. The Electrical Contractor shall furnish the control panel manufacturer with copies of contract documents, shop drawings and equipment information necessary to design the control panels.

H. The control panel manufacturer shall coordinate the design of all panels furnished under this Section with the manufacturer of the motor control center (MCC), which is also work of Contract E. The panel manufacturer shall meet with the MCC manufacturer at their office for the purposes of coordinating the design and for supplying a unified system. The panel manufacturer shall also be required to contact the MCC designer on an as-needed basis for the purposes of coordinating terminal point connections; control panels interface points, basis of system design, and startup activities. The submission of shop drawings shall be deemed to occur under the assumption that the control panel manufacturer has coordinated the work in compliance with these specifications.

1.02 - QUALITY ASSURANCE

A. The Control Systems Integrator shall review the equipment shop drawings provided by the Contractor before the control panel shop drawings are submitted to the Engineer for review. The review shall specifically address the coordination aspect of the project. The control panel shop drawings shall be stamped as "EQUIPMENT CONTROLLED BY THIS CONTROL PANEL HAS BEEN REVIEWED FOR COORDINATION PURPOSES ONLY" by the Control Systems Integrator. The Engineer reserves the right to return shop drawings to the Contractor, not reviewed, if the manufacturer's stamp is not provided.

B. The Contractor shall coordinate the submittal process with all system vendors, suppliers, and manufacturers. The Contractor is responsible for the procurement of all equipment and control panels specified so that the system installed is functional, complete, and operational.

C. The instrumentation equipment specified herein shall be furnished by one single Control Systems Integrator. This requires the Control Systems Integrator to be responsible for the coordination, design, fabrication, assembly, delivery, testing and proper sustained automatic operation of the entire system, but does not require that all system equipment and accessories be the products of one single manufacturer.

D. Consideration will only be given to Control Systems Integrators who can demonstrate that their system complies with these specifications having had successful and documented experience of the size, quality, performance and reliability to that specified, and who can successfully demonstrate this criteria to the Engineer.

1.03 - WARRANTY

A. The Control Systems Integrator (Control Panel Supplier) shall provide a Warranty Certificate typed on company letterhead and signed by an authorized officer of the Control Systems Integrator. The certificate shall be witnessed by a notary public in the state in which the company headquarters is located.

B. The Control Systems Integrator shall guarantee all control panels specified to be furnished by this Section to be free from defects in design, materials and workmanship for a period of two (2) years commencing on the date the system was placed in permanent and consistent operation.

C. During the guarantee period, if any control panel part or component is defective or fails to perform when operating at design conditions and if the equipment has been installed and is being operated and maintained in accordance with the written instructions provided by the Supplier, the Supplier shall repair or exchange at the discretion of the Owner such defective part(s) free of any and all charges. The cost of labor and all other expenses resulting from the repair or replacement

of the defective part(s) and from installation of part(s) furnished by this Warranty shall be borne solely by the Supplier.

D. The replacement or repair of parts normally consumed in service shall include charts, ink, and light bulbs. These parts only shall be considered as part of routine maintenance and upkeep and shall not be considered eligible for exchange free of charge under the Warranty.

E. The Contractor shall provide standard manufacturer's one (1) year parts and labor warranty for all other instrumentation equipment and devices specified herein unless noted otherwise.

1.04 - DELIVERY, STORAGE AND HANDLING

A. The system supplier and the Contractor shall comply with the requirements contained in Section 016500 - Product Delivery, Storage and Handling.

1.05 - FIELD SERVICES

A. The Supplier shall supply and credit to the Owner field services as specified in Section 014500 - Quality Control.

B. The following field services shall be provided by the control panel manufacturer as a minimum:

1. Two (2) days – one (1) trip, prior to the formal design of the control panels, to meet with the Owner and Engineer to discuss the types of displays that are available through the operator interface and to establish the criteria for the design and programming.

2. Four (4) days – four (4) trips, for each control panel specified herein to check the installation, make all necessary adjustments, program modifications, and otherwise place the system into permanent operation as specified in Section 017500 - Starting and Adjusting. As part of startup activities, the representative shall check the terminal connections and the specific work of all the Contractors. Before substantial completion, provide operation and maintenance instruction to the Owner.

3. Up to Thirty Two (32) hours (4 days) of re-programming time to make changes for each supplied PLC program within the first 6 months once the systems are completely functional and placed into operation.

4. The Supplier shall also provide the services of second party manufacturers as follows:

a. one (1) day for each magnetic flow meter installation for calibration purposes and training

b. one (1) day for the level probe for calibration purposes and training

c. one (1) day for the digital recorder for calibration and training

d. two (2) non-consecutive days for the operator interface manufacturer for training purposes

5. Dates shall be selected by the Electrical Contractor, as approved by the Engineer, and are in addition to other field services specified herein.

1.06 - SUBMITTALS

A. Comply with the requirements contained in Section 013300 - Submittals. The following documents shall be submitted:

1. Technical descriptive data for each equipment item in the system showing model number(s), sizes, capacities, weights, horsepower, motor and voltage information, and other similar information. Catalog cuts are acceptable if they contain the necessary information.

2. Control panel schematic wiring diagrams.

3. Interconnection wiring diagrams between primary elements/transmitters and control panels and between control panels.

4. Legend nameplate details for control panel switches, lights and panel mounted equipment.

5. Catalog cuts or technical data sheets for every electrical device mounted inside and on the face of the control panel such as, but not limited to, breakers, terminal blocks, switches, pilot lights, PLC, operator interface, etc.

6. Loop diagrams and loop descriptions prepared in accordance with ISA standards. Contractor shall also submit and coordinate loop diagrams with the Electrical Contractor prior to and during installation of all equipment.

7. Display diagrams for the operator interface showing displays for each control panel.

8. Provide full color operator interface screen shots for review prior to delivery of each control panel.

9. Written complete functional description of each control panel as submitted.

10. List of spare parts to be provided.

11. Storage, handling and installation instructions for all system equipment.

12. Warranty Certificates.

B. Operations and Maintenance Manual prepared in accordance with the requirements contained in Section 017823 - Operating and Maintenance Data.

1.07 - SERVICE CONDITIONS

A. All components of the system shall be designed for continuous duty.

B. Provisions shall be made for adjustments or replacements of all parts. Corresponding parts of multiple units shall be interchangeable.

1.08 - INSTRUMENTATION LOOPS

A. LOOP 101 – INFLUENT PUMP STATION LEVEL: Water level is measured by pressure transducer probe (LET-101). The levels proportional 4-20 mA signal transmitted to the STP PUMP STATIONS CONTROL PANEL (CP-1), located on the north side of the process tanks. The signal shall be retransmitted to the digital recorder (FIR-101), located in the Control Building.

B. LOOP 201 – INFLUENT PUMP STATION FLOW: Flow in the influent pump station force main is measured by one common magnetic flow meter (FE-201). The flow is locally indicated and a flow proportional 4-20 mA signal transmitted by (FIT-201) and sent to the STP PUMP STATIONS CONTROL PANEL (CP-1), located on the north side of the process tanks. The signal shall be retransmitted to the Digital Recorder (FIR-101), located in the Control Building.

C. LOOP 301 – PRE-EQUALIZATION PUMP STATION LEVEL: Water level is measured by pressure transducer probe (LE-301). The levels proportional 4-20 mA signal is transmitted to the STP PUMP STATIONS CONTROL PANEL (CP-1), located on the north side of the process tanks. The signal shall be retransmitted to the Digital Recorder (FIR-101), located in the Control Building.

D. LOOP 401 – PRE-EQUALIZATION PUMP STATION FLOW: Flow from the effluent pump station is measured by flow meter (FE-401) will be locally indicated and a flow proportional 4-20 mA signal transmitted by (FIT-401) to the STP PUMP STATIONS CONTROL PANEL (CP-1), located on the north side of the process tanks. The signal shall be retransmitted to the Digital Recorder (FIR-101), located in the Control Building.

E. LOOP 501 – EFFLUENT PUMP STATION LEVEL: Water level is measured by pressure transducer probe (LE-501). The levels proportional 4-20 mA signal is transmitted to the STP

PUMP STATIONS CONTROL PANEL (CP-1), located on the north side of the process tanks. The signal shall be retransmitted to the Digital Recorder (FIR-101), located in the Control Building.

F. LOOP 601 – EFFLUENT PUMP STATION FLOW: Flow from the effluent pump station is measured by flow meter (FE-601) will be locally indicated and a flow proportional 4-20 mA signal transmitted by (FIT-601) to the STP PUMP STATIONS CONTROL PANEL (CP-1), located on the north side of the process tanks. The signal shall be retransmitted to the Digital Recorder (FIR-101), located in the Control Building.

G. LOOP 701/702 – SLUDGE HOLDING TANK LEVEL: Water level is measured by two (2) pressure transducer probes (LE-701 & LE-702). The levels proportional 4-20 mA signals are transmitted to the STP PUMP STATIONS CONTROL PANEL (CP-1), located on the north side of the process tanks. The signals shall be retransmitted to the Digital Recorder (FIR-101), located in the Control Building.

1.09 - REFERENCES

A. Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified:

1. NFPA 70 – National Electric Code

2. National Electrical Manufacturers Association

3. Institute of Electrical and Electronic Engineers

4. NEMA ICS 1 - General Standards for Industrial Control and Systems.

5. NEMA ICS 2 - Standards for Industrial Control Devices, Controllers and Assemblies

6. NEMA ICS 3 - Industrial Systems

7. NEMA ICS 6 - Enclosures for Industrial Controls and Systems

1.10 - EXTRA MATERIALS

A. The following shall be furnished in accordance with the requirements contained in Section 016500, paragraph 1.06:

1. One (1) dozen fuses of each size used in the control panels

2. One (1) spare intrinsically safe relay of each type

3. Two (2) spare control relay of each type used

4. One (1) pilot light lens cap of each color

5. One (1) dozen pilot light lamps for panel face lights

6. One (1) three position selector switch

7. One (1) two position selector switch

8. One (1) float switch

9. Three (3) PLC input cards

10. Three (1) PLC output cards

11. One (1) PLC power supply unit

12. One (1) Spare HMI for CP-1

13. One (1) level transducer

PART 2 - PRODUCTS

2.01 - GENERAL CONTROL PANEL REQUIREMENTS

A. All Control panels shall conform to the following requirements unless noted otherwise.

B. The control panels shall be properly wired for connection to 120V/1ϕ power.

C. Each panel shall be rated for NEMA 4X service. The enclosure shall be stainless steel and be free standing with one (1) foot high legs. It shall be designed to accept electrical conduits from the panel bottom. The overall panel height shall not exceed 7 feet – 0 inches excluding the lifting lugs. The width of the panel shall be as required to satisfy the requirements of these specifications.

D. Concealed stainless steel piano type hinges shall be used to hinge the front door(s). The hinges shall be for the entire door height. Lifting lugs shall be provided. All seams shall be continuously welded and ground smooth, with no holes or knockouts. All gasketing shall be oil resistant, securely attached with oil-resistant adhesive, and held in place with stainless steel retaining strips.

E. A two lamp small fluorescent light fixture shall be attached to the panel ceiling plate to provide direct task lighting while the door is open. It need not be interlocked with the panel door to

automatically turn on. A high capacity adequately sized cooling fan with finger guard to keep air circulating within the enclosure and shall be provided located adjacent to the PLC. A heater and thermostat properly sized for winter operation shall also be installed within the panel.

F. Wiring shall be accomplished in a neat workmanlike manner and run in PVC wiring duct where practical. All ducts shall be oversized by 25%. Where not practical it shall be supported and tied into position with nylon cable ties. All wiring and terminals shall be identified with a number code matching the Engineer's approved wiring schematic. The panel shall comply with NEMA Standard Section 2, Part 322 for Class II, Type B control centers. Each device inside the panel shall be properly identified as to function using laminated white on black labeling tape.

G. All control panel wire shall be 14 AWG multi-strand machine tool wire minimum. Insulation shall be MTW. Wiring color continuation shall be:

1. 120 VAC control power: RED
2. Neutral: WHITE
3. Ground: GREEN
4. Power from remote source: YELLOW
5. 24 volt DC (+): BLUE
6. 24 volt DC (-): BLUE with WHITE STRIPES

H. All wires shall have wire numbers attached to each end in accordance with the wiring schematic. Wire terminations shall be tubular compression. All terminals shall be strip mounted and be a voltage rating of 600 volts, amperage rating 25 amps.

I. Each device of the panel that is powered from the panel shall be provided with a properly sized circuit breaker. Gang or group the circuit breakers in one area of the panel and provide a typed directory for the breakers. The directory shall be attached to the panel interior, inside a plastic pocket.

J. Intrinsically Safe Barrier: Intrinsically safe control relays shall be provided for the STP PUMP STATIONS CONTROL PANEL CP-1. Relays shall be provided for all level probes and high level floats.

K. Transformer, if necessary, shall be dry-type and specifically designed to handle high inrush current associated with contactors and relays. All control transformers shall be copper wound, vacuum impregnated with solid polyester varnish and 100% tested in strict compliance with ANSI,

CSA, UL listed, and CSA certified. Transformers rated for 50-250 VA shall have a 55 deg. C rise, 105 deg. C temperature class, 300-35 VA 80 deg. C rise, 130 deg. C temperature class and 500-500 VA 115 deg. C. rise, 180 deg. C temperature class. Primary and secondary protection shall be provided.

L. Control relays, shall be in accordance with the following requirements: Enclosed rated for 15 amps at 277 V AC, 80% PF. Expected life 10 million operations, mechanical; 100,000 operations minimum at rated loads. Temperature range - 45 deg. C to 55 deg. C. Coil voltage 120 V, 60 Hz, unless otherwise specified.

M. Automatic transient protection for protection from the effects of lightning induced currents shall be provided. The suppressor shall have solid-state bi-directional componentry and failure indicator (neon). Advanced Protection Technologies, Inc. Model TE/500 or equal shall be provided.

N. Identification: (Quotation marks used in this specification denotes wording of the nameplate or escutcheon legend plate.)

1. Nameplates shall be engraved laminated phenolic with white background, black 3/16" high letters to identify each door-mounted component, and shall be screw mounted to the panel face.

2. The manufacturer's company name, location and project number shall be shown on the front door and inside the panel on an aluminum nameplate.

O. Pilot Lights, Push buttons, and Switches: Pilot lights, push buttons, and selector switches shall be manufactured by Allen-Bradley and be oil tight NEMA 13, heavy duty type. The Owner's color-coding system shall be used.

1. "TROUBLE", "ALARM", or "FAULT" pilot lights shall be push-to-test, incandescent type with amber color cap.

2. "RUN", "OPEN", "ON", "HAND", or "START" pilot lights shall be push-to-test, incandescent type with red color cap.

3. "OFF", "CLOSE" or "STOP" pilot lights shall be push-to-test, incandescent type with green color cap.

4. Selector switches shall be maintained position type with properly labeled legend plate.

P. All equipment controlled via control panels specified herein this section shall be provided with an adjustable delay start timer function, via the PLC program, that when the unit(s) are called to start,

they shall each delay start in 5-second intervals. This feature shall be provided so as to avoid all units starting at the same time after a power outage has occurred and the emergency generator has started. The delay start function shall be provided either in “AUTO”, “MANUAL” or “RUN” modes; i.e. either operator started or primary element started. The control systems integrator shall submit a schedule for all equipment controlled via the control panels specified herein that shall show the name of the equipment, horsepower, in-rush current and the delay start time.

Q. Provide an alarm horn with a silence pushbutton and a reset pushbutton, which shall sound when any alarm condition is activated. The horn and pushbuttons shall be mounted on the front of the panel. The horn shall be manufactured by Edwards or equal. The sound level of the horn shall be a mechanically adjustable by the operator without having to open the control panel front door.

R. Programmable Logic Controller:

1. Programmable logic controllers shall be model number Compact Logix as manufactured by Allen Bradley or equal.

2. Diagnostic indicators shall be provided to show I/O status, DC power, PC run, Battery low, and Forced I/O. All slots shall be labeled. All terminals shall be labeled.

3. The PLC shall come complete with system processors, disconnecting means, control transformer, auxiliary power supply, rack mounted power supplies, and input output cards as required to satisfy the conditions for this project and for the Owner’s future project.

4. Provide one (1) spare installed input card and one (1) spare installed output card in addition to input and output cards required to satisfy specified programming conditions. Label these slots as “SPARE CARDS” on the panel wiring diagram and directly on the card itself. These installed spare cards are in addition to the on-the-shelf spare cards specified to be furnished as spare parts.

5. The I/O rack shall be provided with adapter module(s) allowing it to function with a remote processor through a single communications cable.

6. The program instruction of the PLC shall have capacitor backup to provide at least one (1) week’s backup of memory. In addition, it shall have battery backup to maintain memory for three years minimum.

7. The PLC shall have EEPROM for permanent memory retention.

8. Program timers in both on-delay and off-delay, counters in both count up and count down. Sequencers and shift registers shall be provided.

9. The PLC's power supply shall accept AC power of 85-132 volts, 170-265 volts at 50/60 hertz. It shall be capable of withstanding a power loss for a minimum of 20 milliseconds while still remaining in operation.

10. The CPU shall be self-contained, provide ladder rung program execution, and support remote or local programming. The unit shall also supply I/O scanning and inter-processor and peripheral communication functions.

11. The program storage medium shall be solid-state RAM type, EEPROM type cartridge. Memory capacity shall be sized to allow for future programming expansion on 30% minimum.

12. During normal operation, a malfunction in any remote input/output channel shall affect the operation of only that channel and not the operation of the CPU or any other channel.

13. Replacement of input or output cards (module) shall be accomplished without disturbing panel wiring. Each input and output module shall contain a visual indicator to display On/Off status of individual input or output points.

14. The PLC shall be provided with a modem dial up kit to allow the manufacturer to access the program from the factory. The unit shall be external type at a maximum speed recommended by the PLC manufacturer. The modem shall be shelf mounted near the CPU.

S. UPS

1. An uninterruptible power supply (UPS), suitably sized as recommended by the control panel manufacturer for the PLC shall be provided for all control panels.

2. The UPS shall be shelf mounted inside the panel.

3. All control panels with UPS units shall provide programming as necessary to detect the UPS as the power source during a power failure and reinitiate/acquire all motor start signals from running motors when emergency power or normal power is activated. Adjustable loss of signal time delays may be utilized to cover the power transfer time only while the UPS is detected as the sole power source.

T. Operator Interface:

1. A color graphics display and operator terminal shall be provided and built into the panel for the purpose of allowing the operator to change time variables, acknowledge alarms,

view a schematic of the process being controlled, and to view the status of the motor driven equipment. The unit shall be a model Panelview Plus 1500 operator terminal by Allen Bradley, with Ethernet communication, catalog number 2711P-B15C4D8, NEMA 4X, for outdoor application.

2. The following functions shall be provided via the operator interface for the STP PUMP STATIONS CONTROL PANEL (CP-1) for the influent and effluent pump stations:

   a. Select Lead and Lag Pumps

   b. Adjust Pumping rate set points – 'Auto' Mode

   c. Alternate Lead Pump Selection

   d. Adjust pump and alarm control water elevations

   e. 48 hour Alarm history log

   f. Graphic display in bar chart type format that illustrates the continuous level and flow in the pump station. The actual level and flow shall also be displayed in digital format.

   g. Provide alarm banners

3. The following functions shall be provided via the operator interface for the STP PUMP STATIONS CONTROL PANEL (CP-1) for the pre-equalization tanks and pump station:

   a. Adjust Pumping rate set points – 'Auto' Mode

   b. Select Lead and Lag Pumps

   c. Alternate Lead Pump Selection

   d. Adjust pump and alarm control water elevations

   e. Adjust Pump Motor Speed set-points

   f. 48 hour Alarm history log

   g. Graphic display in bar chart type format illustrates the continuous level and flow in the pump station. The actual level and flow shall also be displayed in digital format.

h. Adjust Blower Motor Speed

i. Select standby blower, if needed

j. Provide alarm banners

4. The following functions shall be provided via the operator interface for the STP PUMP STATIONS CONTROL PANEL (CP-1) for the sludge holding tank:

a. Adjust Blower Motor Speed

b. Select standby blower, if needed

c. 48 hour Alarm history log

d. Graphic display in bar chart type format that illustrates the continuous level in each of the two sludge holding tanks. The actual levels in each of the tanks shall also be displayed in digital format as a bar graph.

e. Adjust alarm control water elevations

f. Provide alarm banners

U. Protection:

1. All pump motor stators incorporate thermal switches in series to monitor the temperature of each phase winding. At 125 deg. C (260 deg. F) the thermal switches shall open, stop the motor and activate an alarm. Refer to Sections 432110 and 432113.

2. For the submersible pump(s), a leakage sensor is also provided to detect water in the stator chamber. The Float Leakage Sensor (FLS) is a small float switch used to detect the presence of water in the stator chamber. When activated, the FLS send an alarm to the control panel. Use of voltage sensitive, solid-state sensors and trip temperature above 125 deg. C (260 deg. F) shall not be allowed.

3. For the submersible pump(s), the thermal switches and FLS shall be connected to a Mini CAS (Control and Status) monitoring unit by Flygt or equal. The Mini CAS shall be designed into each control panel.

V. SCADA Interconnection

1. Control panel supplier/manufacturer shall coordinate the programming of the PLC with the selected SCADA integrator/programmer to provide access to the all system data residing therein as well as access to adjust any operator adjustable set points via the SCADA system, as the Owner desires.

2. All control panels shall be provided with an Ethernet switch suitable for both copper and fiber optic connection for use by selected SCADA integration supplier. Fiber optic connection shall be SC type.

2.02 - STP PUMP STATIONS CONTROL PANEL (CP-1)

A. This section details the specific requirements for the STP PUMP STATIONS CONTROL PANEL (CP-1).

B. Provide a master nameplate - “STP PUMP STATIONS CONTROL PANEL (CP-1).” This nameplate shall be 2 inches high with 1-inch high letters and be centered at the top of the panel. The background shall be red with black letters, screw attached.

C. CP-1 enclosure shall be equipped with a lever lock door handle to open from the panel face. Screw down edge slips will not be accepted

D. The control panel shall be designed for (2) influent submersible pumps. One pump is required to pump the peak hourly daily flow rate of 0.4 mgd.

E. The control panel shall be designed for (2) pre-equalization submersible pumps. One pump is required to pump the average daily flow rate of 0.1 mgd to each Anoxic/MBR train (0.2 mgd total per pump)

F. The control panel shall be designed for (2) effluent submersible pumps. One pump is required to pump the peak MBR effluent rate of 0.4 mgd.

G. The control panel shall be designed for (3) aeration blowers. One blower shall be duty for the pre-equalization tanks, one shall be duty for the sludge holding tanks, and one shall be a common spare. The control panel shall have the ability to incorporate the common spare as the lag/standy blower to either tank as selected at the operator interface.

H. The following remote equipment shall also be powered from CP-1 and be provided with individual properly sized and labeled circuit breakers:

1. Float Switches

2. Level Transducers

3. Flow Meters

4. Pressure Switches (supplied with blower packages)

5. Temperature Switches (supplied with blower packages)

I. The Control panel shall be designed to control the operation of the pre-equalization and sludge holding tank blowers in a manual or automatic condition based on the following:

1. "BLOWER SPEED - REMOTE-LOCAL" selector switch for the control panel, *common to all blowers*, that when placed in the "LOCAL" position the speed of the blowers shall be adjustable only at CP-1 as specified herein below. When placed in the "REMOTE" position the blower speed shall only be adjustable via the blower MCC sections.

2. When in the "RUN" or "AUTO" mode, a manual blower speed adjustment, in percent of full speed with corresponding hertz indicated, shall be used by the operator to select a blower speed.

a. Operator interface up and down controls shall be used to adjust the speed of each blower and "enter" shall be provided to set the speed at the indicated value.

b. The PLC shall generate a corresponding 4-20 mA signal that will be sent to the VFD controller in the corresponding MCC room. Speed adjustment shall be provided for each blower.

3. Provide the following alarm conditions through the operator interface for each blower:

a. MOTOR OVER TEMPERATURE.

b. HIGH DISCHARGE TEMPERATURE.

c. HIGH DISCHARGE PRESSURE AND LOW DISCHARGE PRESSURE.

d. FAILED TO START.

J. The control panel shall be designed to control the influent pump station flow rate to the pre-equalization tanks as specified herein:

1. "RUN" and "OFF" run pilot lights for each pump.

2. "PUMP SPEED - REMOTE-LOCAL" selector switch for the control panel, *common to all pumps*, that when placed in the "LOCAL" position the speed of the pumps shall be

adjustable only at CP-1 as specified herein below. When placed in the "REMOTE" position the pump speed shall only be adjustable via the pump MCC sections.

3. "RUN-OFF-AUTO" selector switch for each Influent pump; i.e. "INFLUENT PUMP NO. 1". Each pump is to be controlled by its dedicated "RUN-OFF-AUTO" selector switch. In the "RUN" position the pump shall be activated by the operator until the low level shut off level is reached as measured by either on-line pump station level probe or low level float. In the "AUTO" position the pump shall be controlled and be operated as specified hereinafter.

4. Provide a lead pump selector function in the PLC that allows the operator to select the "LEAD" pump via the operator interface.

   a. The operator shall be able to designate any of the installed pumps as the "LEAD" pump by inputting the pump number into the appropriate input fields. Provide a set-up screen via the interface to allow the operator to make these selections.

   b. The operator shall also be able to select lead pump selection as "ALTERNATE" which will automatically alternate the lead pump selection after a "PUMPS OFF" level indication (LEVEL 1).

   c. The "LEAD" pump shall run at the full motor speed (60 hz) when the water level in the wet well reaches an operator set water level: LEVEL 2.

   d. The "LAG" pump shall run at the full motor speed (60 hz) if the wet well level increases to the "LEVEL 3" operator set water level in the wet well.

   e. All settings will reset back to the operator inputs after each "PUMPS OFF" (LEVEL 1) indication.

   f. HIGH WATER ALARM shall be indicated when the wet well water level reaches LEVEL 4.

   g. Initial Wet well level set points:

      1) Level 0 – LOW WATER – 1.58' AFF

      2) Level 1 – PUMPS OFF – 2.08' AFF

      3) Level 2 – LEAD PUMP ON – 3.33' AFF

      4) Level 3 – LAG PUMP ON – 4.33' AFF

      5) Level 4 – HIGH WATER ALARM – 4.83' AFF

6) All level setpoints shall be operator adjustable.

5. Provide control logic such that in the event the “LEAD” pump fails to start, then the “LAG” pump shall run.

6. Provide control logic such that if any pump selector switch is in the OFF position, the program will not include that pump in the automatic lead pump alternation or lag pump activation.

7. Provide separate graphical running history display screen of the wet well levels as monitored by the selected wet well level probe over the past 24 hours, with the time in 1 hour increments.

8. Provide a pump running history screen over the past 48 hours that shows which pump was called to run between each PUMPS OFF call. Each pump running shall be shown in the order and time they were called to run by the program (i.e Lead pump (#1 -11:00 am), Lag Pump (#3 – 12:30 pm)), Pumps Off (1:00 pm) etc.)

K. The control panel shall be designed to control the pre-equalization pump station flow rate to the anoxic basins as specified herein:

1. “RUN” and “OFF” run pilot lights for each pump.

2. “PUMP SPEED - REMOTE-LOCAL” selector switch for the control panel, *common to all pumps*, that when placed in the “LOCAL” position the speed of the pumps shall be adjustable only at CP-1 as specified herein below. When placed in the “REMOTE” position the pump speed shall only be adjustable via the pump MCC sections.

3. “RUN-OFF-AUTO” selector switch for each Influent pump; i.e. “ INFLUENT PUMP NO. 1”. Each pump is to be controlled by its dedicated “RUN-OFF-AUTO” selector switch. In the “RUN” position the pump shall be activated by the operator until the low level shut off level is reached as measured by either on-line pump station level probe or low level float. In the “AUTO” position the pump shall be controlled and be operated as specified hereinafter.

4. When in the “RUN” or “AUTO” mode, a flowrate adjustment, in flowrate in gpm indicated, shall be used by the operator to select a pump rate. Provide “FLOWRATE MODE” selection in RUN and AUTO mode to set pumping rate control option.

a. Operator interface up and down control shall be used to adjust the speed of each pump and “enter” shall be provided to set the desired flowrate at the indicated value.

b. The PLC shall generate a corresponding 4-20 mA signal that will be sent to the VFD controller in the corresponding MCC room. Flowrate adjustment set points shall be available for one and two pump operation.

5. Provide a lead pump selector function in the PLC that allows the operator to select the “LEAD” pump via the operator interface.

a. The operator shall be able to designate any of the installed pumps as the “LEAD” pump by inputting the pump number into the appropriate input fields. Provide a set-up screen via the interface to allow the operator to make these selections.

b. The operator shall also be able to select lead pump selection as “ALTERNATE” which will automatically alternate the lead pump selection after a “PUMPS OFF” level indication (LEVEL 1).

c. The “LEAD” pump shall run at the operator set motor speed level-1 when the water level in the wet well reaches an operator set water level: LEVEL 2.

d. The “LEAD” pump motor speed shall be automatically increased to motor speed level-2 if the wet well level increase to the “LEVEL 3” operator set water level in the wet well. The “LAG” pump shall reset after wet well level decreases below “LEVEL 3”.

e. The “LEAD” pump motor speed shall be automatically increased to full motor speed (60 hz) if the wet well level increase to the “LEVEL 4” operator set water level in the wet well.

f. The “LAG” pump motor speed shall be automatically increased to full (60 hz) speed if the wet well level increase to the “LEVEL 5” operator set water level in the wet well.

g. All settings will reset back to the operator inputs after each “PUMPS OFF” (LEVEL 1) indication.

h. HIGH WATER ALARM shall be indicated when the wet well water level reaches LEVEL 6

i. Initial Wet well level set points:

1) Level 0 – LOW WATER – 2’ AFF

2) Level 1 – PUMPS OFF– 2.5’ AFF

3) Level 2 – LEAD PUMP ON MOTOR SPEED-1 – 3’ AFF

4) Level 3 – LEAD PUMP MOTOR SPEED-2/ LAG PUMP OFF – 4.5 AFF

5) Level 4 – LEAD PUMP MAX. SPEED INCREASE– 7.5’ AFF

6) Level 5 – LAG PUMP ON– 8.5’ AFF

7) Level 6 – HIGH WATER ALARM– 9.25’ AFF

8) All level setpoints shall be operator adjustable.

6. Provide control logic such that in the event the “LEAD” pump fails to start, then the “LAG” pump shall run.

7. Provide control logic such that if any pump selector switch is in the OFF position, the program will not include that pump in the automatic lead pump alternation or lag pump activation.

8. Provide separate graphical running history display screen of the wet well levels as monitored by the selected wet well level probe over the past 24 hours, with the time in 1 hour increments.

9. Provide a separate graphical running history display screen of the pre-equalization flow over the past 24 hours with the time in 1 hour increments.

10. Provide a pump running history screen over the past 48 hours that shows which pump was called to run between each PUMPS OFF call. Each pump running shall be shown in the order and time they were called to run by the program (i.e Lead pump (#1 -11:00 am), Lag Pump (#3 – 12:30 pm)), Pumps Off (1:00 pm) etc.)

L. The control panel shall be designed to control the effluent pump station flow rate to the recharge beds as specified herein:

1. “RUN” and “OFF” run pilot lights for each pump.

2. “PUMP SPEED - REMOTE-LOCAL” selector switch for the control panel, *common to all pumps*, that when placed in the “LOCAL” position the speed of the pumps shall be

adjustable only at CP-1 as specified herein below. When placed in the "REMOTE" position the pump speed shall only be adjustable via the pump MCC sections.

3. "RUN-OFF-AUTO" selector switch for each Influent pump; i.e. "INFLUENT PUMP NO. 1". Each pump is to be controlled by its dedicated "RUN-OFF-AUTO" selector switch. In the "RUN" position the pump shall be activated by the operator until the low level shut off level is reached as measured by either on-line pump station level probe or low level float. In the "AUTO" position the pump shall be controlled and be operated as specified hereinafter.

4. Provide a lead pump selector function in the PLC that allows the operator to select the "LEAD" pump via the operator interface.

   a. The operator shall be able to designate any of the installed pumps as the "LEAD" pump by inputting the pump number into the appropriate input fields. Provide a set-up screen via the interface to allow the operator to make these selections.

   b. The operator shall also be able to select lead pump selection as "ALTERNATE" which will automatically alternate the lead pump selection after a "PUMPS OFF" level indication (LEVEL 1).

   c. The "LEAD" pump shall run at an operator adjustable motor speed when the water level in the wet well reaches an operator set water level: LEVEL 2.

   d. The "LEAD" pump shall run at full motor speed (60 hz) when the water level in the wet well reaches an operator set water level: LEVEL 3.

   e. The "LAG" pump shall run at full motor speed (60 hz) if the wet well level increases to the "LEVEL 4" operator set water level in the wet well.

   f. All settings will reset back to the operator inputs after each "PUMPS OFF" (LEVEL 1) indication.

   g. HIGH WATER ALARM shall be indicated when the wet well water level reaches LEVEL 5

   h. Initial Wet well level set points:

      1) Level 0 – LOW WATER – 2' AFF

      2) Level 1 – PUMPS OFF – 4' AFF

      3) Level 2 – LEAD PUMP ON (OPERATOR ADJUST SPEED) – 6' AFF

4) Level 3 – LEAD PUMP ON (FULL SPEED) – 7’ AFF

5) Level 4 – LAG PUMP ON – 8’ AFF

6) Level 5 – HIGH WATER ALARM – 9.25’ AFF

7) All level setpoints shall be operator adjustable.

5. Provide control logic such that in the event the “LEAD” pump fails to start, then the “LAG” pump shall run.

6. Provide control logic such that if any pump selector switch is in the OFF position, the program will not include that pump in the automatic lead pump alternation or lag pump activation.

7. Provide separate graphical running history display screen of the wet well levels as monitored by the selected wet well level probe over the past 24 hours, with the time in 1 hour increments.

8. Provide a pump running history screen over the past 48 hours that shows which pump was called to run between each PUMPS OFF call. Each pump running shall be shown in the order and time they were called to run by the program (i.e Lead pump (#1 -11:00 am), Lag Pump (#3 – 12:30 pm)), Pumps Off (1:00 pm) etc.)

M. The control panel face shall contain the following controls, indicators, switches, and devices and be arranged in groups, banks, rows or columns to provide a logical separation of function and shall be designed and fabricated to accomplish the functions specified:

1. White pilot light centered at the top of the panel showing that the panel is energized - “120 VOLT POWER”.

2. Provide minimum of five output contacts for future use.

3. Provide a common alarm pilot light while annunciating the following alarms on the operator interface::

a. “SEAL LEAK”

b. “MOTOR OVERTEMPERATURE”

c. “PUMP #1 FAILED TO START”

d. “PUMP #2 FAILED TO START”

e. “BLOWER #1 (PRE-EQUALIZATION) FAILED TO START”

f. “BLOWER #2 (COMMON SPARE) FAILED TO START”

g. “BLOWER #3 (SLUDGE HOLDING) FAILED TO START”

h. “INFLUENT PUMP STATION HIGH WATER LEVEL FLOAT”

i. “INFLUENT PUMP STATION LOW WATER LEVEL FLOAT”

j. “PRE-EQUALIZATION PUMP STATION HIGH WATER LEVEL FLOAT”

k. “PRE-EQUALIZATION PUMP STATION LOW WATER LEVEL FLOAT”

l. “EFFLUENT PUMP STATION HIGH WATER LEVEL FLOAT”

m. “EFFLUENT PUMP STATION LOW WATER LEVEL FLOAT”

n. “SLUDGE HOLDING TANK HIGH WATER LEVEL FLOAT”

o. “INFLUENT PUMP STATION HIGH WATER LEVEL”

p. “INFLUENT PUMP STATION LOW WATER LEVEL”

q. “PRE-EQUALIZATION PUMP STATION HIGH WATER LEVEL”

r. “PRE-EQUALIZATION PUMP STATION LOW WATER LEVEL”

s. “EFFLUENT PUMP STATION HIGH WATER LEVEL”

t. “EFFLUENT PUMP STATION LOW WATER LEVEL”

u. “SLUDGE HOLDING TANK HIGH WATER LEVEL”

v. “SLUDGE HOLDING TANK LOW WATER LEVEL”

2.03 - MAGNETIC TYPE FLOW METERS

A. The magnetic flow meters shall be the magnetic-inductive type that produces a magnetic field by positioning the coils inside the flow tube. The flow meter sizes shall be as specified herein. Flow meters shall be the ABB Instrumentation WaterMaster electromagnetic flow meter, or approved equal.

B. Continuous zero stability shall be an inherent characteristic of the flow meter system. The system shall cancel out interference voltages, thus eliminating the zero-drift by loading the magnetic coils with a pulsed direct (dc) current.

C. Measurement shall not be affected by ac line interference voltages, stratified flow, changes in liquid electrical conductivity (down to 5 micromhos/cm), or non-homogeneity of the fluids electrical conductivity. Zero point shall be stable even with partially fouled electrodes.

D. The flow meters must meet the following requirements:

1. General:

a. Function: Measure, indicate, and transmit the process flow in a full pipe. Meter must be a full bore meter with the magnetic field traversing the entire cross-section of the flow tube. Insertion magmeters or multiple single point probes inserted into a spool piece are not acceptable.

b. Type: Magnetic flowmeter, operating based on Faraday's law, using a pulsed dc type coil excitation with high impedance electrodes.

c. Parts: Flow tube, transmitter, interconnection cables, mounting hardware.

2. Performance:

a. Range: 1000 to 1 for 6" and smaller, 1500 to 1 for 8" and larger.

b. Accuracy: 1/2" to 6" at 0.2% of rate, 8" and larger at 0.15% of rate.

c. Repeatability: ±0.05% or ±0.0008 ft/s, whichever is greater.

d. Calibration: CalMaster Fingerprint with 3-point calibration.

e. Flow range:

1) Influent Pump Station Flow: 0 GPM to 1000 gpm

2) Pre-Equalization Pump Station Flow: 0 GPM to 600 GPM

3) Effluent Pump Station Flow: 0 GPM to 1000 GPM

3. Process Connection:

a. Meter Size and Type:

1) Influent Pump Station: 8-inch

2) Pre-Equalization Pump Station: 6-inch

3) Effluent Pump Station: 8-inch

b. Connection Type: ANSI 150 flanges

c. Flange Material: Carbon steel

d. Pressure Rating: Meter system must be fully rated to the same design pressure as the flanges.

4. Flow Tube:

a. Meter Tube Material: 304 stainless steel

b. Liner Material: Teflon or chlorobutyl rubber, suitable for wastewater sludge containing 1% solids and replaceable without disturbing the field coils.

c. Electrode Type: Conical self-cleaning electrodes.

d. Electrode Material: 316 stainless steel

e. Enclosure Classification: NEMA 4X, Explosion Proof for Class 1, Div. 2, Group D locations.

f. Housing Material: ½" to 6" Epoxy coated cast aluminum
8" to 24" ABS Plastic

g. Grounding: Type 2 corrosion-resistant metallic grounding rings are required.

h. Submergence: Continuous to 30 feet and direct burial 3 to 16 feet IP68/NEMA6P.

5. Transmitter:

a. Power: 120VAC 60Hz

b. Display: Three-line 16 character back-lit display indicating instantaneous flow and total flow in GPM.

c. Integral Keypad: Allows for external configuration without removing covers and compromising the integrity of the electrical and environmental classifications.

d. Bi-direction flow: Forward and reverse flow indication and totalization

e. Totalizers: Three 9 digit totalizers for forward, reverse and net

f. Mounting: Direct mount.

g. Enclosure: NEMA 4X Polypropylene with polycarbonate window

h. Input Impedance: 1015 ohms.

i. Isolation: Galvanic separation to 50V dc between analog, pulse/alarm, earth/ground.

j. Current Output: Two standard 4-20 mA into 0-800 ohms minimum.

k. Pulse Output: One standard 0-800Hz, <35Vdc for forward and one for reverse.

l. Contact Outputs: Two programmable as standard.

m. Empty Pipe Detection: Required.

n. Remote Communications capability: Shall be capable of RS232/485, and HART Protocol, where required.

o. Low flow cut off: Adjustable

p. Power consumption: < 20VA

q. Maximum Cable length: 330 feet with standard cable, longer separation possible.

6. Calibration:

a. Test Mode: Provide the ability to verify the accuracy of the unit and the integrity of the current loop without any external equipment.

b. Self-diagnostics: Internal checks of all outputs and displays.

c. In-Situ Calibration Verification: This system shall be used to verify in a quantifiable manner the meter's current conditions versus the meter's condition when originally manufactured. This calibration verification of the meter shall be performed without need for physical access to the meter flow tube. The calibration verification shall meet or exceed the following requirements:

1) The original FINGERPRINT values shall be stored on a computer disk given to the owner.

2) The verification process shall consist of at least 52 meter conditions pertaining to the primary coils, electrodes, interconnecting cable and signal converter.

3) The coil verification shall include faults of continuity, impedance, resistance to ground, inductance, and magnetic field strength.

4) The electrode verification shall include faults of continuity, impedance and insulation.

5) The cable verification shall include faults of coil, electrode, driven shield, and ground connections, cable cuts, cable damage, and water in the cable.

6) Signal converter verification shall include faults of current supply to coils, zero offset, span forward and reverse, electrode offset, current output, frequency output forward and reverse, driven shield to ground, overall shield to ground and signal ground connection to ground.

7) The calibration verification shall include the following: water ingress into the primary elements, faulty electrodes, dirty electrodes, electrode leakage, corroded electrodes, high process noise, liner failure, conductive coatings on the liner, insulating coatings on the liner, and primary element damage.

8) All tests shall be performed by means of comparison between the absolute values and change in values from the new conditions.

9) Verification standard shall be ±1% of wet calibration for meters produced using the calibration verification service, or ±2% for standard meters.

10) The software shall be Windows based. This software shall be capable of generating a report based upon the result of the forgoing described tests. The software shall be capable of creating and storing an audit trail of the meter's conditions and the meter's history.

11) The calibration verification and metering system shall meet or exceed the standards established by the National Testing Laboratories.

d. Meters to be designed, manufactured, and calibrated in an ISO9001, UKAS/NAMAS, NIST, or NATA certified facility. Flow facility must be certified by volume or weight certified provers. Facility must have the capability to hold the flow rate at the specified calibration points for a minimum of five minutes to allow stabilization for flow and repeatability point checks.

2.04 - DIGITAL RECORDERS

A. Provide one (1) video chart recorders as specified herein. The recorders shall be ABB model RVG200.

B. The RVG200 chart recorder shall meet the following requirements:

1. General:

a. Function: Indicates and records process inputs, alarms, and totalizers.

b. Type: Microprocessor based videographic recorder

c. Enclosure**:** NEMA 4X face. Thin film transistor active matrix (touch screen), color liquid crystal display with built-in backlight. Lockable media door and tamperproof seal. Enclosure equipped with hardware suitable for panel mounting.

d. Voltage Requirements: 100 to 240 VAC, 50/60 Hz.

2. Performance:

a. Display Range: –99999 to +999999

b. Input Accuracy: V, mA, resistance, mV, THC, RTD 0.1% of reading

c. Environmental Limits: 32 to 122 deg F, 5 to 95 RH (non-condensing)

d. EMC and Safety: CE Mark, EN50081-2, EN50082-2, EN61010-1, optional CSA, optional UL

3. Display:

a. Display: Color thin film transistor, active-matrix with built-in LED backlight with brightness adjustment. Analog resistive touchscreen to allow easy changes of the viewable information as well as configuration data.

b. Views: A 5.7 in. diagonal view, selectable chart viewing interval from 18 second to 7 days and able view data as vertical trending, horizontal trending, digital indicator, process or bargraph.

4. Inputs:

a. Analog: 24 total, 6 per board, 4 boards max. 125ms sample rate. Programmable between, -10 to 24 V, -50 to 50mA, and 0 to 10000 ohms,-150 to 150mV, Types B, C, D, E, J, K, L, N, R, S, T THC, and Pt100, Pt1000, Ni120, Ni1000 RTD. Digital volt-free and digital 24 VDC.

5. Outputs:

a. Hybrid: Programmable as 6 analog outputs, 6 digital outputs or 6 transmitter power supplies.

b. Digital: 6 per board, 2 boards max. Closed switch contact or 0V = active signal. Digital 5V output. Module isolation is 500V between other I/O.

c. Relay: 3 or 6 relays per board, 2 boards max. Rated at 250 VAC, 5 amp, or 30 VDC, 5 amp, single-pole changeover relay.

d. Transmitter Power Supply: Standard 24V at 50 mA. (two transmitter load). Optional power supplies 24V at 45 mA. (two transmitter load). 2 power supplies per board. Maximum 2 boards per recorder for a total of 8 additional transmitter loads.

e. Totalizer Counter: 1 totalizer count pulse for each whole number count. Output is active for 100ms. Can be used on digital or relay output.

6. Software:

a. System: A Windows CE operating system with the ability to view data as vertical trending, horizontal trending, digital indicator, process, or bargraph.

b. Internal Memory: 256 MB standard, optional 2 GB.

c. Math: Optional 24 math blocks and optional 24 logic equations. Math functions to allow calculations for standard, trigonometric, logarithmic, and relative humidity calculations. Logic functions to allow OR, AND, NOR, XOR, NAND, NOT operators.

d. Totalizers: Totalizers to count up or down, start and stop and provide selectable preset or predetermined (starting or finishing) points. Starting, stopping and resetting of the totalizer are done through the front face, remote input device or logic equation.

e. Archive: A real time clock and timer options allow the unit to be set up in real time stamps on all data recorded. Totalizer, alarm event and audit logs viewable from display as well as logged to removable media.

f. Removable Media: Removable media can export data to database program.

g. Configuration: Recorder configuration is programmable from front panel tactile membrane keypads. Configuration may be locked out via front door keylock or internal security link. Inputs, input ranges, engineering units, totalizers, alarms, alarm types, retransmission, chart speed, and relay assignments are all end-user programmable. Configuration is stored internally and may be exported via media port.

h. Serial Communication: Data can read/write via standard serial communications (MODBUS RS 485) to be viewed on display or remotely.

7. Acceptable Manufacturers:

a. ABB or Engineer Approved equal

2.05 - LEVEL PROBE

A. Liquid level sensing probes shall be the Waterpilot FMX 167, as manufactured by Endress and Hauser.

1. The complete standard measuring system shall consist of the Water pilot FMX167 and a transmitter power supply unit with supply voltage of 10 to 30 V DC.

2. The unit shall be suitable for hazardous areas using RN221N active barrier.

3. Level indication output: 4-20 mA stepped output signal for programmable level control set points.

4. Power supply, onsite display, two switch outputs and a signal adaptation (turn down) shall be integrated into the transmitter.

5. Extension cable mounting screw shall be supplied. Suspension clamp shall be supplied for each unit. Terminal housing shall also be provided.

6. The unit shall be supplied with guide tube, additional weight, and protection cap.

7. Level probes shall be for 0-10 psi.

B. Provide continuous instrument cable from probe to the transmitter. Length of the cable shall be a minimum of the total depth of the tank plus 10 feet for all applications.

C. All level probes shall be installed in a 6" diameter, schedule 80 PVC stilling wells with stainless steel hardware. Stilling wells to be furnished and installed by General Contractor.

2.06 - FLOAT SWITCHES

A. Each switch shall be 304 stainless steel with float weights, and polypropylene cased Flygt Model ENM-10, Anchor Scientific Eco Float Model G, or approved equal. Each liquid level sensors shall have a micro switch in a smooth, chemical resistant polypropylene casing. Each switch shall be S.P.D.T. level sensors with #19-three conductor electrical cable.

B. The Influent Pump Station float switches shall have the following cable lengths:

1. High Level Float Switch: 20 ft. long cable.

2. Low Level Float Switch: 30 ft. long cable.

C. The Pre-Equalization Pump Station float switches shall have the following cable lengths:

1. High Level Float Switch: 20 ft. long cable.

2. Low Level Float Switch: 30 ft. long cable.

D. The Effluent Pump Station float switches shall have the following cable lengths:

1. High Level Float Switch: 20 ft. long cable.

2. Low Level Float Switch: 30 ft. long cable.

B. The Sludge Holding Tanks float switches shall have the following cable lengths:

1. High Level Float Switch: 20 ft. long cable.

2. Low Level Float Switch: 30 ft. long cable.

PART 3 – EXECUTION

3.01 - GENERAL

A. All components of the system shall be installed in accordance with the written and /or verbal instructions provided by the component manufacturer. All components shall be fully tested and verified for service by the manufacturer. Each manufacturer shall provide a MSR as specified in Section 017500 - Starting and Adjusting. An amount equal to 0.50 % of the scheduled value for the work of this Section shall be retained until all reports has been furnished.

3.02 - INSTALLATION

A. All equipment shall be installed in accordance with the manufacturer's written instructions as shown on the Contract Plans. Perform all other work to make panels ready for final connection to all field wiring.

END OF SECTION

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J.R. Holzmacher P.E., LLC

3555 Veterans Memorial Highway, Suite A, Ronkonkoma, New York 11779-7636
Tel: (631) 234-2220 Fax: (631) 234-2221 e-mail: info@holzmacher.com

September 26, 2017

H2M architects + engineers
Attn: James Vierling
538 Broad Hollow Road, 4th Floor East
Melville, NY 11747

Re: Geotechnical Evaluation
Calverton STP Upgrade
4062 Grumman Blvd.
Calverton, NY 11933
H2M Project No.: CASD 16-02

Dear Mr. Vierling:

J.R. Holzmacher P.E., LLC (JRH) Consulting Engineers has prepared this Geotechnical Evaluation Report (GER) for the above referenced site. The soil borings described in this report were completed by Land, Air, Water Environmental Services, Inc. (LAWES). Field data was used in rendering geotechnical evaluation and judgment regarding subsoil suitability in connection with construction at the above referenced site. No materials testing laboratory analysis was requested or performed on any of the soil samples.

EXPLORATION PROGRAM

Soil borings were completed on August 30, 2017 and August 31, 2017 to determine the nature and condition of the soils below the existing ground surface at the site. The boring program consisted of drilling eight (8) soil borings and installing one 4-inch permanent monitoring well. All eight (8) soil borings were completed to a depth of 17-feet below grade and the monitoring well was installed to a depth of 15-feet below grade. The well was constructed with 4-inch PVC pipe with 5-feet of casing and 10-feet of slotted screening.

The soil borings were completed by LAWES, a NYSDEC licensed driller with JRH oversight. Samples were collected by a Geoprobe 7822DT and Mobile Drill Rig using a split-spoon core barrel sampler. The sampler was driven in six-inch increments by using the equivalent force of a 140-pound hammer from a height of thirty inches. Samples were collected using a standard 2" by 24" long split spoon sampler driven into the soil. The driller who recorded the Standard Penetration Test (SPT) values characterized the samples recorded during the performance of the test. Based on these descriptions and measurements, geologic soil-boring logs were prepared.

The general subsurface conditions encountered during the field exploration program are shown in the soil boring logs (Appendix A). Soil stratification is based on the examination of recovered soil samples and interpretation of the field boring logs. The stratification lines, dimensions, as

well as reported values of this report represent the approximate boundaries between the soil types, while the actual transitions and dimensions may be more gradual. While the borings are representative of the subsurface conditions at their respective location and within respective vertical reaches, variations over the site may be encountered.

METHODOLGY

The scope of the work was to drill through unconsolidated soils to obtain geotechnical information. Samples were logged and collected at various depths. The borings were logged with respect to blow counts and classified according to the unified soils classification system (USCS). The borings and all sampling was performed in accordance to ASTM D1586-84. Restoration consisted of backfilling the boring hole with sand.

Representative samples were routinely obtained during the drilling process at selected intervals by applying a two-inch diameter split spoon-sampling tube. The sampler was driven by the 30-inch fall of a 140-pound hammer. The number of blows required to drive the sample spoon from 6 inches to 18 inches represents the standard penetration resistance (N), and is an indicator of the safe bearing capacity of the soil.

The drilling and testing procedures were performed applying the guidelines and procedures of ASTM designations:

ASTM D1586 Penetration Test and Split Barrel Sampling of Soils.
ASTM D2488 Recommended Practice for Description of Soils.
ASTM D2487 Standard Practice for Classification of Soils (USCS).

Sectional linear samples were also secured in conjunction with the performance of the standard penetration and density test. The soil profiles reported by the boring logs should be reviewed for specific information at the individual boring location and test depths.

SUMMARY

This report was developed from conventional and standard soil testing procedures and engineering analysis. Brown topsoil and/or sand and medium to fine sand was recovered from grade to 2-feet below grade at boring locations B-1, B-2, B-3, and B-5. Grey RCA, coarse to fine sand and gravel was recovered from grade to 2-feet below grade at boring location B-4. Black/dark brown topsoil, medium to fine sand, and trace gravel was recovered from grade to 2-feet below grade at boring locations B-6 and B-7. Black/brown topsoil/silty sand, and medium to fine sand was recovered from grade to 2-feet below grade at boring location B-8. Light brown/grey sand, concrete, coarse to fine sand, and gravel was recovered from 6-feet to 8-feet below grade at boring location B-6. Brown sand and medium to fine sand was recovered at the remaining depths of all boring locations.
Low blow counts (N<15) were encountered from grade to 17-feet below grade at boring locations B-1 through B-3, B-7, and B-8; from 15-feet to 17-feet below grade at boring location

B-4; from grade to 8-feet below grade and 15-feet to 17-feet below grade at boring location B-5; from 2-feet to 6-feet below grade and from 8-feet to 17-feet below grade at boring location B-6.

SUBSURFACE WATER CONDITIONS

Groundwater was encountered from 8'-6" to 14'-0" below grade at boring locations B-1 through B-4 and the location of the monitoring well during the field investigation. Groundwater was not encountered at boring locations B-5 through B-8 during the investigation. A permanent monitoring well (PZ-1) was installed to the east of boring location B-2 as indicated on Figures 2 and 4. The initial depth to water reading was collected on August 30, 2017 after the well was installed at 11:00 am and again on August 31, 2017 at 7:20 AM. The depth to water was 8.3-feet below grade for both readings.

FLOOD ZONE

The Flood Insurance Rate Map (FIRM map) is not available for this location. This site is located in Zone "X" outside the statistical 500-year flood plain.

OBSERVATIONS AND ANALYSIS

Soil bearing capacity is estimated from results of in-situ tests using empirical correlation factors. Soil bearing values (SBVs) in tons per square foot (TSF) to undisturbed, structurally rated soils are inferred from blow counts as tabulated in Appendix B.

Boring No.	TSF @ 3.5-ft	TSF @ 5.5-ft	TSF @ 7.5-ft	TSF @ 9.5-ft
B-1	0.30	0.60	0.50	0.20
B-2	0.55	0.60	0.40	0.40
B-3	0.40	0.35	0.50	0.50
B-4	1.59	1.19	1.04	0.94
B-5	0.30	0.70	0.65	1.04
B-6	0.60	0.25	0.75	0.10
B-7	0.45	0.30	0.30	0.30
B-8	0.40	0.55	0.70	0.50

The SBVs are predicted based on saturated sands. An additional contingency to address the variation in soil strength can be realized by increasing the reinforcing steel within footings or the pile cap to accommodate "soft spots" without cracking. Lower settlement of the granular materials encountered is expected to be small in magnitude and to occur rapidly as the load is applied. Longer-term settlement of silt and organic layers, if any exist, may be significant.

SEISMIC COMPONENT

The 2015 IBC contains a requirement that every structure be designed to resist the effect of earthquake motion and be assigned a seismic Design Category. The 2015 IBC, Earthquake loads Section 1613.3.2, Site Class Definition further dictates, at a minimum, that Site Class E be imposed. The USGS seismic summary report is included in Appendix C.

Subject Site

Site Designation	Class 'E'
Site Coefficient	$F_a = 2.5$
One Second Site Coefficient	$F_v = 3.5$
5% Peak Dampened Acceleration Stress Design	$S_{DS} = 0.274g$
One Second Peak 5% Dampened Acceleration Stress Design	$S_{D1} = 0.133g$

Moreover, the project location would result in a wind design component that would exceed the anticipated effect of seismic action and would therefore govern the structural integrity of the design. The analysis and recommendations are based on the data obtained from the limited test borings performed for this report. The nature and extent of variations may not become evident until open excavation is initiated. Variations should be noted and their impact evaluated with respect to the necessity to modify the recommendations of this report.

LATERAL EARTH PRESSURES COEFFICIENTS

Lateral Earth Pressures as described by theories presented by both Coulomb and Rankine, requires that the foundation size be determined prior to determining the true failure planes and the resultant forces. Since the soils noted in the boring are granular, we recommend that the Active and Passive Lateral Earth Pressure coefficients be based upon cohesionless soils. The angle of internal friction is estimated at 34°, accounting for the variations within the soil column, and can be used in the computation of the loads on the foundation. An internal angle of friction for the soil yields an active earth pressure of Ka = 0.2827 and a passive earth pressure of Kp = 3.5371. Furthermore, the 2015 IBC Table 1806.2 permits an allowable lateral bearing of 150 psf/ft. below natural grade and a 0.25 coefficient of friction lateral sliding resistance for soil types SW, SP, SM, SC, GM, and GC. This would therefore be applicable to the soils found onsite.

RECOMMENDATIONS

The boring exploration was completed to determine the structural design requirements for construction related to the upgrade of the Calverton Sewer District's sewage treatment plant (STP). The proposed STP upgrade includes the construction of one (1) new stand-alone equipment platform, a 2.0 mile long force main and four (4) new 50-ft by 50-ft recharge basins. Based upon the bearing capacities computed from the geotechnical boring data, the use of reinforced spread concrete footings are recommended. A mat foundation should be considered if significant point loads are expected. A helical pile design would allow for zero settlement and should also be considered due to the weak soils encountered throughout boring locations B-1 and B-2 which are located in the area of the proposed equipment platform. Please refer to Appendix B for the calculated bearing capacities and the associated depth of each. We further recommend the foundation extend below the frost line, which is approximately four (4) feet for this area. The soils encountered throughout all boring locations are suitable for the installation of recharge basins.

The footings should be designed to bear upon suitable soils. Should poor materials be encountered we recommend removal of those soils down to virgin structurally rated soil and importing engineered fill designed as per the structural engineer of record. Foundation design plans should indicate a procedure for removal of substandard materials based upon conditions encountered during excavation. This is necessary, as the borings are an examination of only a small area.

Structural backfill should be placed and compacted to grade. Compacted structural backfill should be well-graded granular soil, meeting the gradations shown in Table 1. Common backfill can be used in other areas around the site which are not directly beneath the proposed structures. A grain distribution curve and a Modified Proctor Density should be provided for any imported backfill brought to the site for approval by the Engineer of Record before placement.

Table 1 – Gradations of Granular Backfill

Sieve Size	**Percent Passing by Weight**	
	Structural Backfill	**Common Backfill**
3 inch	100%	100%
¼ inch	100%	30-80%
No. 40	5-50%	10-40%
No. 200	0-10%	0-15%

Backfill should not be placed frozen or onto frozen subgrade. In the event that the subgrade does freeze, the frozen backfill should be removed and the surface should be scarified prior to placing any new backfill. Placement of backfill should follow requirements specified in Table 2.

Table 2 – Backfill Compaction Requirements

Type of Backfill	Maximum Thickness of Backfill placed in Loose Lifts	Minimum Required Modified Proctor Density (ASTM D1557)
Structural	9 inches	95%
Common	12 inches	90%

The adequacy of compaction should be tested in the field by a knowledgeable and experienced inspector at the rate of at least two compaction tests per shift, per lift, or per 10 cubic yards of backfill, whichever is more frequent.

After improving the site soils by the methods described above, the foundations may be installed by excavating to their respective subgrade levels. Upon reaching footing subgrade, the final few inches of excavation should be made by hand or smooth tipped excavator. Soils disturbed or loosened by excavation, trenching for utilities or other construction activity should be removed, and replaced as compacted backfill. All foundation subgrade should be approved by an independent testing agency. Once approved for bearing, foundation soils should be protected from disturbance. In the event disturbance does occur, the disturbed area should be excavated, backfilled, and compacted as described above.

Backfill of excavations, following foundation construction, should be performed using clean, excavated soils or compatible imported select common fill where additional material is required. Soil consolidation is expected to be less than one half (0.5”) inch, based upon a properly designed foundation bearing upon properly compacted soil.

Any and all excavations should follow OSHA guidelines for excavation protection. Any excavations that are adjacent to existing buildings should be reviewed with specific interest in the depths of the existing foundations to determine if underpinning would be required.

LIMITATIONS

The recommendations in this report are based on our experience and training, in conjunction with the limited soils exposed at the site. We believe that this information gives an acceptable degree of reliability for anticipating behavior of the proposed improvement to be constructed; however, our recommendations are professional opinions and cannot assure accuracy beyond the limits of the soil profiles from which data was obtained. This report is based on the evaluation at the described site and on the specific anticipated construction.

MISCELLANEOUS

The attached boring log and calculations are components of this report. If you have any questions regarding this report, or if we can be of further service, please do not hesitate to contact our office. We trust this report provides you with the necessary information to continue with development of the project.

Very truly yours,
J.R. Holzmacher P.E., LLC

Michael C. Simon, P.E.
Principal

MCS:hvs
Encl.

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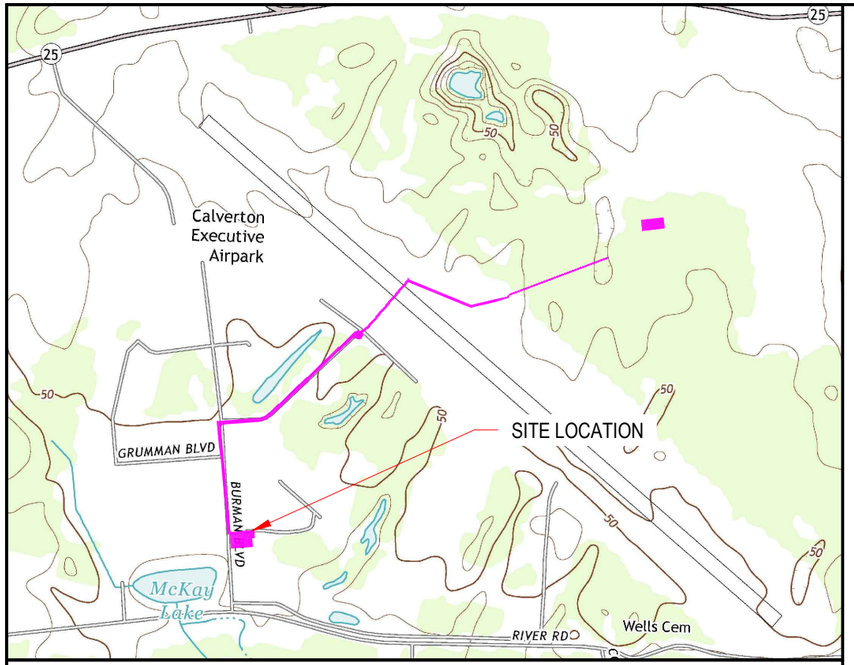
FIGURES

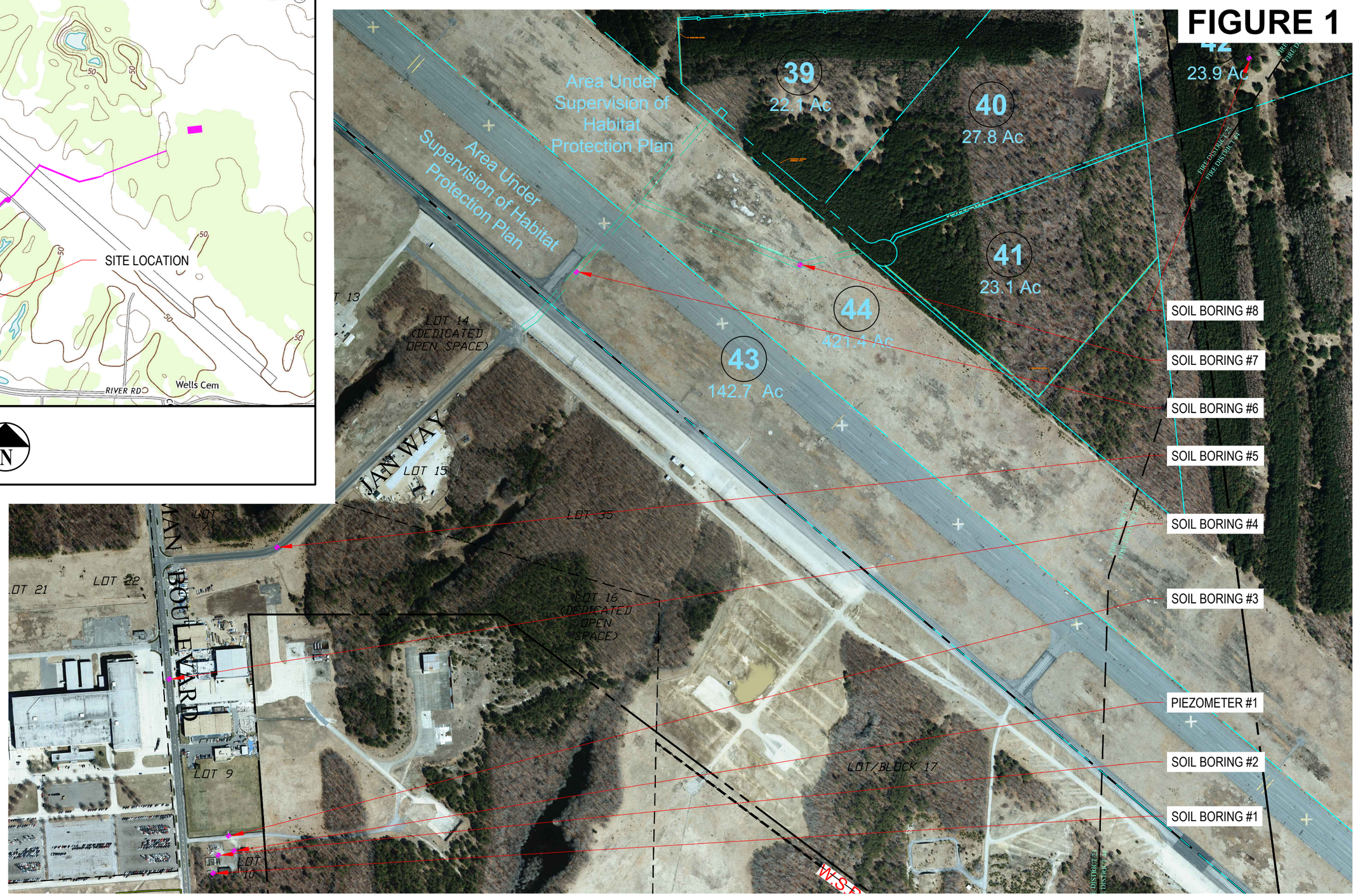
FIGURE 1



Location Map

SCALE: 1"= 2,000'-0"

N



Soil Boring Overview

SCALE: 1"= 500'-0"

N

H2M architects + engineers

Melville, NY · New York, NY · White Plains, NY · Albany, NY · New City, NY · Parsippany, NJ · Howell, NJ

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FIGURE 2

STP Site Overview

SCALE: 1"= 40'-0"

N

NOTES:

1. BORING LOCATION DIMENSIONS SHOWN HEREON ARE APPROXIMATE AND INTENDED TO SHOW THE AREAS OF INTEREST WHERE WE ARE REQUESTING SURVEY WORK TO BE PERFORMED. THESE DIMENSIONS ARE MEASURED FROM EXISTING SITE FEATURES SHOWN IN AERIAL BACKGROUND.

H2M architects + engineers

Melville, NY New York, NY | White Plains, NY Albany, NY New City, NY | Parsippany, NJ Howell, NJ

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FIGURE 3

NOTES:

1. SOIL BORING LOCATIONS SHOWN HEREON ARE APPROXIMATE AND INTENDED TO SHOW THE AREAS OF INTEREST WHERE WE ARE REQUESTING BORING WORK TO BE PERFORMED. THESE DIMENSIONS ARE MEASURED FROM THE SOUTHWEST CORNER OF PARCEL 42 AT THE INTERSECTION WITH THE ACCESS EASEMENT TO THE PARCEL.

Recharge Bed Site Overview

SCALE: 1"= 100'-0"

N

H2M architects + engineers

Melville, NY · New York, NY · White Plains, NY · Albany, NY · New City, NY · Parsippany, NJ · Howell, NJ

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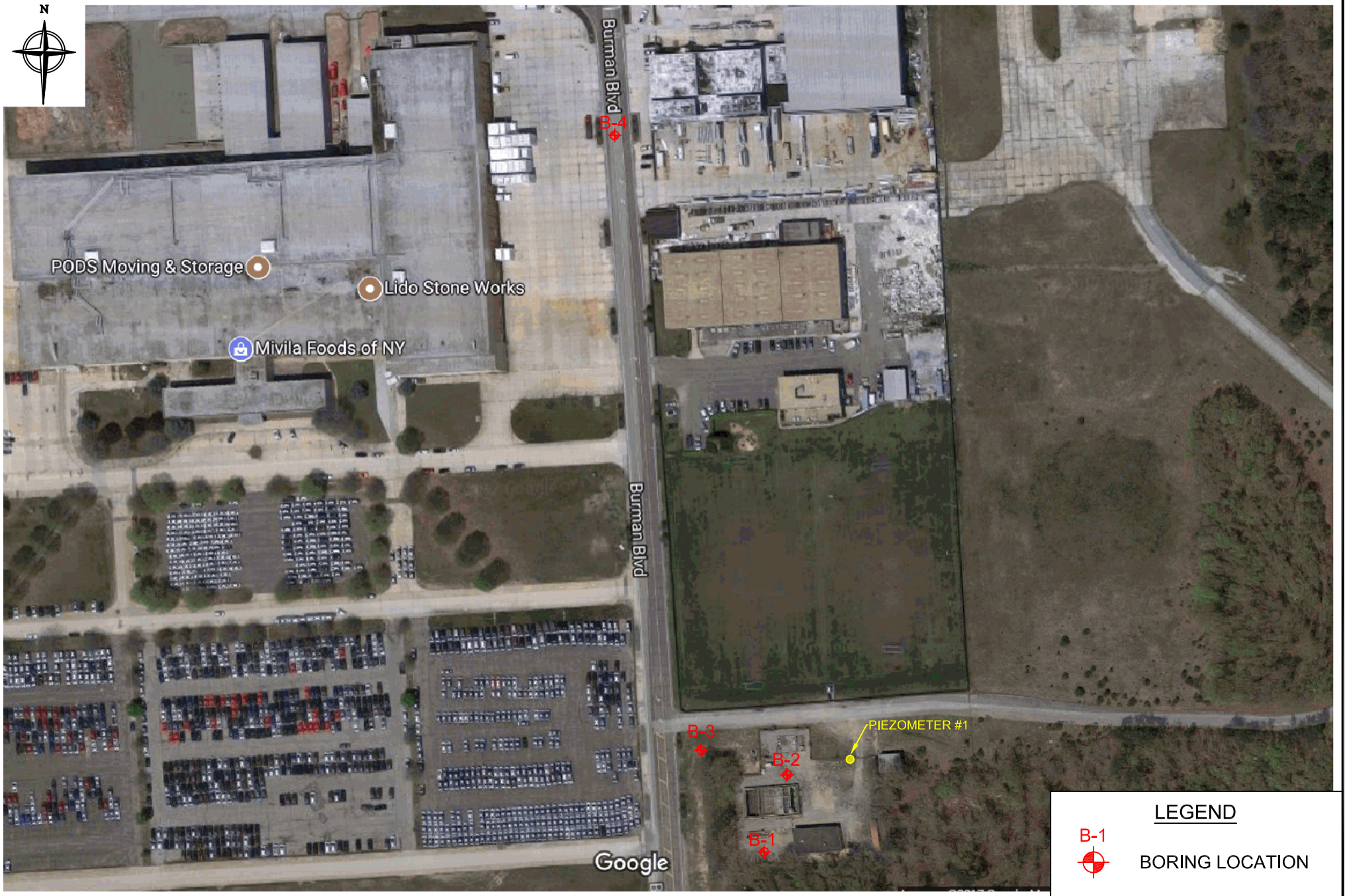


LEGEND

B-1 BORING LOCATION

P:\2017\LAWES\17-11 – Town of Riverhead –Calverton STP Upgrade\Task 1 –Geotechnical Engineering Report\CAD\Soil Boring Location Maps.dwg

PREPARED BY:

J.R. HOLZMACHER P.E., LLC

The Third Generation of Excellence
In Water Supply, Water Resources,
Civil and Environmental Engineering

3555 VETERANS MEMORIAL HIGHWAY,
SUITE A, RONKONKOMA, NY 11779
PHONE # (631) 234-2220 *FAX # (631) 234-2221*
E-MAIL: info@holzmacher.com

TITLE:

BORING LOCATION MAP

4062 GRUMMAN BLVD,
CALVERTON, NY 11933

DWN:	SCALE:	DATE:	PROJECT NO.:
LJF	N.T.S.	09/05/17	LAWES 17-11
CHKD:	APPD:	REV.:	NOTES:
AJS	HVS	-	-

FIGURE NO.: 4

LEGEND

B-5 BORING LOCATION

P:\2017\LAWES\17-11 – Town of Riverhead –Calverton STP Upgrade\Task 1 –Geotechnical Engineering Report\CAD\Soil Boring Location Maps.dwg

PREPARED BY:

J.R. HOLZMACHER P.E., LLC

The Third Generation of Excellence
In Water Supply, Water Resources,
Civil and Environmental Engineering

3555 VETERANS MEMORIAL HIGHWAY,
SUITE A, RONKONKOMA, NY 11779
PHONE # (631) 234-2220 *FAX # (631) 234-2221*
E-MAIL: info@holzmacher.com

TITLE:

BORING LOCATION MAP

4062 GRUMMAN BLVD,
CALVERTON, NY 11933

DWN:	SCALE:	DATE:	PROJECT NO.:
LJF	1:30	09/05/17	LAWES 17-11
CHKD:	APPD:	REV.:	NOTES:
AJS	HVS	-	-

FIGURE NO.: 5

APPENDIX A

SOIL BORING LOGS

Land, Air, Water Environmental Services, Inc.

DRILLER'S LOGS

BORING#: B-1

DATE: August 30, 2017
SITE: Town of Riverhead
Calverton Sewer District STP

CONSULTANT: H2M Group
Melville, NY

DEPTH DRILLED: 17 feet
CORING DEVICE: 2" x 24"
AUTOMATIC SPT DROP HAMMER
DRILL RIG / GEOPROBE TYPE: Geoprobe 78DT

DEPTH TO WATER: 10 feet
TIME WATER WAS TAKEN: 8:38 AM
BORING RESTORATION: Backfill
DRILLING METHOD: 3.5" Geoprobe rods

DRILLER: E. Santiago

HELPER: A. Gonzalez

DEPTH FROM	DEPTH TO	RECOVERY	BLOWS / 6 INCHES	SAMPLE DESCRIPTION
0 ft	2 ft	19 inches	1-2-5-4	Brown topsoil/sand, medium to fine, (SW)
2 ft	4 ft	19 inches	4-3-3-5	Light brown sand, medium to fine, (SW)
4 ft	6 ft	16 inches	5-5-7-8	Light brown sand, medium to fine, (SW)
6 ft	8 ft	22 inches	7-6-4-5	Light brown sand, medium to fine, (SW)
8 ft	10 ft	14 inches	2-2-2-2	Light brown sand, medium to fine, (SW)
10 ft	15 ft	Direct Push		Rod Advancement
15 ft	17 ft	7 inches	4-6-6-8	Light brown sand, medium to fine, (SW), wet

The boring / well has been finished at grade as contracted. It is the responsibility of the client and / or property owner to maintain the boring / well and have it legally abandoned when decommissioning is required.

Land, Air, Water Environmental Services, Inc.

DRILLER'S LOGS

BORING#: B-2

DATE: August 30, 2017
SITE: Town of Riverhead
Calverton Sewer District STP

CONSULTANT: H2M Group
Melville, NY

DEPTH DRILLED: 17 feet
CORING DEVICE: 2" x 24"
AUTOMATIC SPT DROP HAMMER
DRILL RIG / GEOPROBE TYPE: Geoprobe 78DT

DEPTH TO WATER: 8.5 feet
TIME WATER WAS TAKEN: 9:15 AM
BORING RESTORATION: Backfill
DRILLING METHOD: 3.5" Geoprobe rods

DRILLER: E. Santiago

HELPER: A. Gonzalez

DEPTH FROM	DEPTH TO	RECOVERY	BLOWS / 6 INCHES	SAMPLE DESCRIPTION
0 ft	2 ft	13 inches	1-2-3-6	Brown sand/soil, medium to fine, (SW)
2 ft	4 ft	16 inches	5-5-6-6	Brown sand/gravel, medium to fine, 5% gravel, (SW)
4 ft	6 ft	19 inches	6-6-6-7	Light brown sand, medium to fine, (SW)
6 ft	8 ft	21 inches	5-3-5-6	Light brown sand, medium to fine, (SW)
8 ft	10 ft	15 inches	5-4-4-5	Light brown sand, medium to fine, (SW), wet
10 ft	15 ft	Direct Push		Rod Advancement
15 ft	17 ft	8 inches	1-2-1-3	Light brown sand, medium to fine, (SW), wet

The boring / well has been finished at grade as contracted. It is the responsibility of the client and / or property owner to maintain the boring / well and have it legally abandoned when decommissioning is required.

Land, Air, Water Environmental Services, Inc.

DRILLER'S LOGS

BORING#: B-3

DATE: August 30, 2017
SITE: Town of Riverhead
Calverton Sewer District STP

CONSULTANT: H2M Group
Melville, NY

DEPTH DRILLED: 17 feet
CORING DEVICE: 2" x 24"
AUTOMATIC SPT DROP HAMMER
DRILL RIG / GEOPROBE TYPE: Geoprobe 78DT

DEPTH TO WATER: 8.5 feet
TIME WATER WAS TAKEN: 11:42 AM
BORING RESTORATION: Backfill
DRILLING METHOD: 3.5" Geoprobe rods

DRILLER: E. Santiago

HELPER: A. Gonzalez

DEPTH FROM	DEPTH TO	RECOVERY	BLOWS / 6 INCHES	SAMPLE DESCRIPTION
0 ft	2 ft	20 inches	2-4-4-4	Brown sand/topsoil, medium to fine, (SW)
2 ft	4 ft	18 inches	4-4-4-4	Brown sand/gravel, medium to fine, 5% gravel, (SW)
4 ft	6 ft	23 inches	3-3-4-5	Light brown sand, medium to fine, (SW)
6 ft	8 ft	18 inches	5-4-6-6	Light brown sand, medium to fine, (SW)
8 ft	10 ft	18 inches	5-5-5-6	Light brown sand, medium to fine, (SW), wet
10 ft	15 ft	Direct Push		Rod Advancement
15 ft	17 ft	17 inches	4-4-5-6	Light brown sand, medium to fine, (SW), wet

The boring / well has been finished at grade as contracted. It is the responsibility of the client and / or property owner to maintain the boring / well and have it legally abandoned when decommissioning is required.

Land, Air, Water Environmental Services, Inc.

DRILLER'S LOGS

BORING#: B-4

DATE: August 30, 2017
SITE: Town of Riverhead
Calverton Sewer District STP

CONSULTANT: H2M Group
Melville, NY

DEPTH DRILLED: 17 feet
CORING DEVICE: 2" x 24"
AUTOMATIC SPT DROP HAMMER
DRILL RIG / GEOPROBE TYPE: Geoprobe 78DT

DEPTH TO WATER: 14 feet
TIME WATER WAS TAKEN: 2:13 PM
BORING RESTORATION: Backfill
DRILLING METHOD: 3.5" Geoprobe rods

DRILLER: E. Santiago

HELPER: A. Gonzalez

DEPTH FROM	DEPTH TO	RECOVERY	BLOWS / 6 INCHES	SAMPLE DESCRIPTION
0 ft	2 ft	4 inches	50/5"	Grey RCA, coarse to fine, 80% gravel, (fill)
2 ft	4 ft	23 inches	18-15-17-19	Brown sand, medium to fine, (SW)
4 ft	6 ft	19 inches	18-12-12-15	Light brown sand, medium to fine, (SW)
6 ft	8 ft	21 inches	11-11-10-12	Light brown sand, medium to fine, (SW)
8 ft	10 ft	20 inches	10-10-9-10	Light brown sand, medium to fine, (SW)
10 ft	15 ft	Direct Push		Rod Advancement
15 ft	17 ft	23 inches	2-2-4-6	Light brown sand, medium to fine, (SW), wet

The boring / well has been finished at grade as contracted. It is the responsibility of the client and / or property owner to maintain the boring / well and have it legally abandoned when decommissioning is required.

Land, Air, Water Environmental Services, Inc.

DRILLER'S LOGS

BORING#: B-5

DATE: August 31, 2017
SITE: Town of Riverhead
Calverton Sewer District STP

CONSULTANT: H2M Group
Melville, NY

DEPTH DRILLED: 17 feet
CORING DEVICE: 2" x 24"
AUTOMATIC SPT DROP HAMMER
DRILL RIG / GEOPROBE TYPE: Geoprobe 78DT

DEPTH TO WATER: Did Not Encounter
BORING RESTORATION: Backfill
DRILLING METHOD: 3.5" Geoprobe rods

DRILLER: E. Santiago

HELPER: A. Gonzalez

DEPTH FROM	DEPTH TO	RECOVERY	BLOWS / 6 INCHES	SAMPLE DESCRIPTION
0 ft	2 ft	2 inches	2-5-7-7	Brown topsoil/ sand, medium to fine, (SW)
2 ft	4 ft	22 inches	3-3-3-4	Brown silty sand, medium to fine, (SW)
4 ft	6 ft	16 inches	4-7-7-8	Light brown sand, medium to fine, (SW)
6 ft	8 ft	20 inches	6-6-7-11	Light brown sand/gravel, medium to fine, 5% gravel, (SW)
8 ft	10 ft	19 inches	13-10-11-13	Light brown sand, medium to fine, (SW)
10 ft	15 ft	Direct Push		Rod Advancement
15 ft	17 ft	18 inches	9-6-8-8	Light brown sand, medium to fine, (SW)

The boring / well has been finished at grade as contracted. It is the responsibility of the client and / or property owner to maintain the boring / well and have it legally abandoned when decommissioning is required.

Land, Air, Water Environmental Services, Inc.

DRILLER'S LOGS

BORING#: B-6

DATE: August 31, 2017
SITE: Town of Riverhead
Calverton Sewer District STP

CONSULTANT: H2M Group
Melville, NY

DEPTH DRILLED: 17 feet
CORING DEVICE: 2" x 24"
AUTOMATIC SPT DROP HAMMER
DRILL RIG / GEOPROBE TYPE: Geoprobe 78DT

DEPTH TO WATER: Did Not Encounter
BORING RESTORATION: Backfill
DRILLING METHOD: 3.5" Geoprobe rods

DRILLER: E. Santiago

HELPER: A. Gonzalez

DEPTH FROM	DEPTH TO	RECOVERY	BLOWS / 6 INCHES	SAMPLE DESCRIPTION
0 ft	2 ft	6 inches	4-7-8-10	Black topsoil, medium to fine, trace of gravel, (topsoil)
2 ft	4 ft	16 inches	6-6-6-5	Light brown sand, medium to fine, (SW)
4 ft	6 ft	16 inches	3-2-3-3	Light brown/brown sand, medium to fine, trace of gravel, (SW)
6 ft	8 ft	12 inches	10-11-4-3	Light brown/grey sand 6"/concrete 4"/sand 2", coarse to fine, 30% gravel, (SW)/(fill)
8 ft	10 ft	18 inches	2-1-1-3	Light brown sand, medium to fine, trace of gravel, (SW)
10 ft	15 ft	Direct Push		Rod Advancement
15 ft	17 ft	20 inches	3-3-3-3	Light brown sand, medium to fine, trace of gravel, (SW)

The boring / well has been finished at grade as contracted. It is the responsibility of the client and / or property owner to maintain the boring / well and have it legally abandoned when decommissioning is required.

Land, Air, Water Environmental Services, Inc.

DRILLER'S LOGS

BORING#: B-7

DATE: August 31, 2017
SITE: Town of Riverhead
Calverton Sewer District STP

CONSULTANT: H2M Group
Melville, NY

DEPTH DRILLED: 17 feet
CORING DEVICE: 2" x 24"
AUTOMATIC SPT DROP HAMMER
DRILL RIG / GEOPROBE TYPE: Geoprobe 78DT

DEPTH TO WATER: Did Not Encounter
BORING RESTORATION: Backfill
DRILLING METHOD: 3.5" Geoprobe rods

DRILLER: E. Santiago

HELPER: A. Gonzalez

DEPTH FROM	DEPTH TO	RECOVERY	BLOWS / 6 INCHES	SAMPLE DESCRIPTION
0 ft	2 ft	12 inches	W.O.H.3-2	Dark brown/light brown topsoil 2"/sand 10", medium to fine, trace of gravel, (topsoil)/(SW)
2 ft	4 ft	20 inches	3-4-5-4	Light brown sand, medium to fine, trace of gravel, (SW)
4 ft	6 ft	18 inches	1-3-3-4	Light brown sand, medium to fine, (SW)
6 ft	8 ft	14 inches	2-3-3-4	Light brown sand, medium to fine, (SW)
8 ft	10 ft	20 inches	5-3-3-4	Light brown sand, medium to fine, (SW)
10 ft	15 ft	Direct Push		Rod Advancement
15 ft	17 ft	18 inches	4-3-2-3	Light brown sand, medium to fine, (SW)

The boring / well has been finished at grade as contracted. It is the responsibility of the client and / or property owner to maintain the boring / well and have it legally abandoned when decommissioning is required.

Land, Air, Water Environmental Services, Inc.

DRILLER'S LOGS

BORING#: B-8

DATE: August 31, 2017
SITE: Town of Riverhead
Calverton Sewer District STP

CONSULTANT: H2M Group
Melville, NY

DEPTH DRILLED: 17 feet
CORING DEVICE: 2" x 24"
AUTOMATIC SPT DROP HAMMER
DRILL RIG / GEOPROBE TYPE: Geoprobe 78DT

DEPTH TO WATER: Did Not Encounter
BORING RESTORATION: Backfill
DRILLING METHOD: 3.5" Geoprobe rods

DRILLER: E. Santiago

HELPER: A. Gonzalez

DEPTH FROM	DEPTH TO	RECOVERY	BLOWS / 6 INCHES	SAMPLE DESCRIPTION
0 ft	2 ft	16 inches	2-8-4-12	Black/brown topsoil/silty sand, medium to fine, (SW)
2 ft	4 ft	14 inches	8-4-4-5	Light brown sand/gravel, medium to fine, 5% gravel, (SW)
4 ft	6 ft	20 inches	3-6-5-7	Light brown sand/gravel, medium to fine, 5% gravel, (SW)
6 ft	8 ft	18 inches	7-7-7-11	Light brown sand/gravel, medium to fine, 5% gravel, (SW)
8 ft	10 ft	15 inches	5-5-5-4	Light brown sand, medium to fine, (SW)
10 ft	15 ft	Direct Push		Rod Advancement
15 ft	17 ft	20 inches	5-6-5-6	Light brown sand, medium to fine, (SW)

The boring / well has been finished at grade as contracted. It is the responsibility of the client and / or property owner to maintain the boring / well and have it legally abandoned when decommissioning is required.

Land, Air, Water Environmental Services, Inc.

DRILLER'S LOGS

WELL #: PZ-1

DATE: August 30, 2017
SITE: Town of Riverhead
Calverton Sewer District STP

CONSULTANT: H2M Group
Melville, NY

DEPTH DRILLED: 16 feet
CASING INSTALLED: 5 feet
SCREEN INSTALLED: 10 feet
DRILLING METHOD: Hollow Stem Auger 6 5/8"
DEPTH TO BOTTOM TAPED: 15 feet
DRILL RIG / GEOPROBE TYPE: Geoprobe 78DT

DEPTH TO WATER: 8.3 feet
TIME WATER WAS TAKEN: 11:00 AM
CASING DIAMETER: 4 inches
SLOT SIZE: 0.020 inches
WELL RESTORATION: Backfill

DRILLER: E. Santiago
HELPER: A. Gonzalez

DEPTH FROM	DEPTH TO	RECOVERY	SAMPLE DESCRIPTION
0 ft	16 ft	Auger Cuttings	Brown/light brown sand, medium to fine, trace of gravel

The boring / well has been finished at grade as contracted. It is the responsibility of the client and / or property owner to maintain the boring / well and have it legally abandoned when decommissioning is required.

APPENDIX B

SOIL BEARING STRENGTH

APPENDIX B
Land, Air, Water, Environmental Services (LAWES)
Calverton Sewer District STP
4062 Grumman Blvd.
Calverton, NY 11933

Boring Performed August 30, 2017

B-1

Sample Depth (ft bg)		Blows	N	Bearing	
From	To	(per 6")		Strength (TSF)	
0	2	1			
		2			
		5	7	0.35	
		4			
2	4	4			
		3			
		3	6	0.30	
		5			
4	6	5			
		5			
		7	12	0.60	
		8			
6	8	7			
		6			
		4	10	0.50	
		5			
8	10	2			
		2			
		2	4	0.20	DTW
		2			10'-0"
15	17	4			
		6			
		6	12	0.60	
		8			

DTW - DEPTH TO WATER

APPENDIX B
Land, Air, Water, Environmental Services (LAWES)
Calverton Sewer District STP
4062 Grumman Blvd.
Calverton, NY 11933

Boring Performed August 30, 2017

B-2

Sample Depth (ft bg)		Blows	N	Bearing	
From	To	(per 6")		Strength (TSF)	
0	2	1			
		2			
		3	5	0.25	
		6			
2	4	5			
		5			
		6	11	0.55	
		6			
4	6	6			
		6			
		6	12	0.60	
		7			
6	8	5			
		3			
		5	8	0.40	
		6			DTW
8	10	5			8'-6"
		4			
		4	8	0.40	
		5			
15	17	1			
		2			
		1	3	0.15	
		3			

DTW - DEPTH TO WATER

APPENDIX B

Land, Air, Water, Environmental Services (LAWES)

Calverton Sewer District STP
4062 Grumman Blvd.
Calverton, NY 11933

Boring Performed August 30, 2017

B-3

Sample Depth (ft bg)		Blows	N	Bearing	
From	To	(per 6")		Strength (TSF)	
0	2	2			
		4			
		4	8	0.40	
		4			
2	4	4			
		4			
		4	8	0.40	
		4			
4	6	3			
		3			
		4	7	0.35	
		5			
6	8	5			
		4			
		6	10	0.50	
		6			DTW
8	10	5			8'-6"
		5			
		5	10	0.50	
		6			
15	17	4			
		4			
		5	9	0.45	
		6			

DTW - DEPTH TO WATER

APPENDIX B
Land, Air, Water, Environmental Services (LAWES)
Calverton Sewer District STP
4062 Grumman Blvd.
Calverton, NY 11933

Boring Performed August 30, 2017

B-4

Sample Depth (ft bg)		Blows	N	Bearing	
From	To	(per 6")		Strength (TSF)	
0	2	50			
		Refusal	50	2.49	
2	4	18			
		15			
		17	32	1.59	
		19			
4	6	18			
		12			
		12	24	1.19	
		15			
6	8	11			
		11			
		10	21	1.04	
		12			
8	10	10			
		10			
		9	19	0.94	
		10			DTW
15	17	2			14'-0"
		2			
		4	6	0.30	
		6			

DTW - DEPTH TO WATER

APPENDIX B

Land, Air, Water, Environmental Services (LAWES)

Calverton Sewer District STP
4062 Grumman Blvd.
Calverton, NY 11933

Boring Performed August 31, 2017

B-5

Sample Depth (ft bg)		Blows	N	Bearing
From	To	(per 6")		Strength (TSF)
0	2	2		
		5		
		7	12	0.60
		7		
2	4	3		
		3		
		3	6	0.30
		4		
4	6	4		
		7		
		7	14	0.70
		8		
6	8	6		
		6		
		7	13	0.65
		11		
8	10	13		
		10		
		11	21	1.04
		13		
15	17	9		
		6		
		8	14	0.70
		8		

APPENDIX B

Land, Air, Water, Environmental Services (LAWES)

Calverton Sewer District STP
4062 Grumman Blvd.
Calverton, NY 11933

Boring Performed August 31, 2017

B-6

Sample Depth (ft bg)		Blows	N	Bearing
From	To	(per 6")		Strength (TSF)
0	2	4		
		7		
		8	15	0.75
		10		
2	4	6		
		6		
		6	12	0.60
		5		
4	6	3		
		2		
		3	5	0.25
		3		
6	8	10		
		11		
		4	15	0.75
		3		
8	10	2		
		1		
		1	2	0.10
		3		
15	17	3		
		3		
		3	6	0.30
		3		

APPENDIX B
Land, Air, Water, Environmental Services (LAWES)
Calverton Sewer District STP
4062 Grumman Blvd.
Calverton, NY 11933

Boring Performed August 31, 2017

B-7

Sample Depth (ft bg)		Blows	N	Bearing
From	To	(per 6")		Strength (TSF)
0	2	W.O.H.		
		3		
		4	7	0.35
2	4	3		
		4		
		5	9	0.45
		4		
4	6	1		
		3		
		3	6	0.30
		4		
6	8	2		
		3		
		3	6	0.30
		4		
8	10	5		
		3		
		3	6	0.30
		4		
15	17	4		
		3		
		2	5	0.25
		3		

W.O.H. - WEIGHT OF HAMMER

APPENDIX B

Land, Air, Water, Environmental Services (LAWES)

Calverton Sewer District STP
4062 Grumman Blvd.
Calverton, NY 11933

Boring Performed August 31, 2017

B-8

Sample Depth (ft bg)		Blows	N	Bearing
From	To	(per 6")		Strength (TSF)
0	2	2		
		8		
		4	12	0.60
		12		
2	4	8		
		4		
		4	8	0.40
		5		
4	6	3		
		6		
		5	11	0.55
		7		
6	8	7		
		7		
		7	14	0.70
		11		
8	10	5		
		5		
		5	10	0.50
		4		
15	17	5		
		6		
		5	11	0.55
		6		

W.O.H. - WEIGHT OF HAMMER

APPENDIX C

USGS SEISMIC SUMMARY REPORT

USGS Design Maps Summary Report

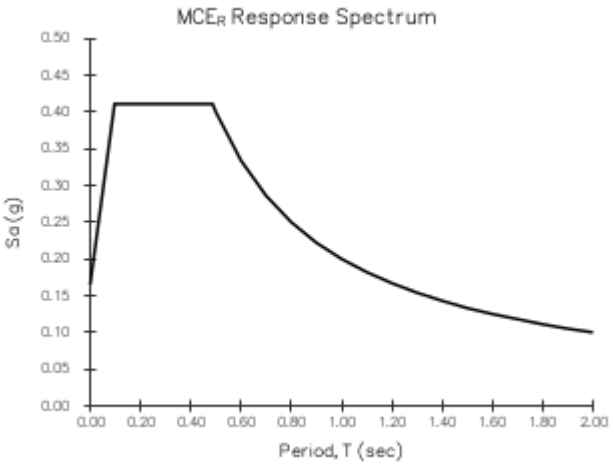
User–Specified Input

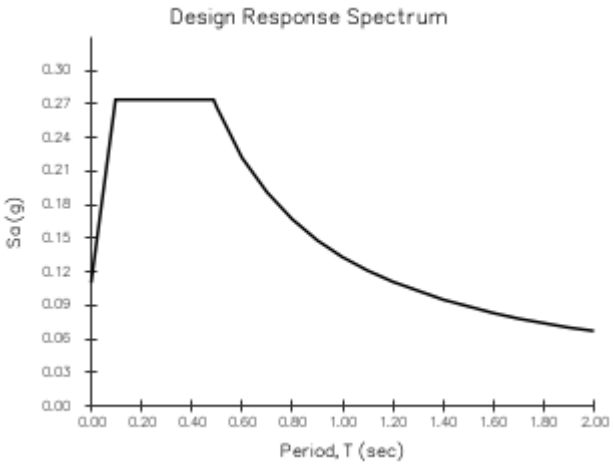
Building Code Reference Document	2012/2015 International Building Code (which utilizes USGS hazard data available in 2008)
Site Coordinates	40.90466°N, 72.81046°W
Site Soil Classification	Site Class E – "Soft Clay Soil"
Risk Category	IV (e.g. essential facilities)

USGS–Provided Output

S_S =	0.165 g	S_{MS} =	0.411 g	S_{DS} =	0.274 g
S_1 =	0.057 g	S_{M1} =	0.200 g	S_{D1} =	0.133 g

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.





Although this information is a product of the U.S. Geological Survey, we provide no warranty, expressed or implied, as to the accuracy of the data contained therein. This tool is not a substitute for technical subject-matter knowledge.

Sound Environmental Associates, LLC 67 Heights Road, Stony Point, New York 10980
Tel. 631-414-7198, Fax 631-514-3697

Project:
Lead Paint & Asbestos Survey

Location:
Control Building & Pump Station/Drywell Vault
Calverton Sewage Treatment Plant
4062 Grumman Boulevard
Calverton, NY

Prepared For:
H2M Architects and Engineers
2 Executive Blvd #401
Suffern NY

Prepared by:
Sound Environmental Associates
67 Heights Road
Stony Point, NY 10980

Dates of Inspection:
September 26 and 27, 2017

Date of Report:
October 23rd, 2017

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Appendix A - Asbestos Sample Results
Appendix B – Lead Sample Results
Appendix C - Licensure and Certifications

I. PURPOSE

An asbestos survey and XRF lead based paint inspection were conducted at the Control Building and the Pump Station/Drywell Vault for the Calverton Sewage Treatment Plant located at 4062 Grumman Boulevard, Calverton, NY on September 26 and 27, 2017. The purpose of the inspection was to identify locations where regulated and/or hazardous materials were present that require special handling, remediation, or other safeguards to minimize exposure hazards to workers during the renovation project. Specifically the survey was conducted in order to:

- Determine if lead paint was present on pumps, electrical equipment, walls and floors, and other surfaces likely to be disturbed during scheduled renovations and equipment upgrades.
- Determine if asbestos containing material were present in building materials and electrical equipment that will be impacted as part of the facility upgrade.

Representing Sound Environmental Associates was Edward F. von Briesen, a New York State Asbestos Investigator and EPA lead risk assessor.

II. SITE CONDITIONS AND DESCRIPTION

Control Building:

The following renovations are scheduled to be performed at the Control Building:

1. The flat roof roofing material is to be removed and replaced.
2. The pumps and piping located in the pump room (Room #1 on the attached floor plan sketch of the Control Building) are scheduled to be updated. The interior partition wall between the pump room (Room #1) and the utility room (Room #2) is to be removed. The rear exterior entry door (located on wall C) to the Pump Room will be removed and replaced and the rear exterior entry door to the Utility Room (Toom #2) is to be removed. The tan linoleum tile flooring in the Hall, Office, and Sitting Room is to be removed and replaced. In addition, it was requested that the windows in the Pump Room be surveyed for possible asbestos containing materials.

The Control Building is constructed with painted concrete block and contains painted steel doors installed in one piece steel buck frames, unpainted aluminum windows with no painted wood trim installed, painted interior concrete block walls, and painted concrete ceilings. The pumps and piping are painted steel or cast iron. The floors in the Pump Room and Utility Room are painted concrete.

Pump Station/Drywell Vault:

The following renovations are scheduled to be performed in the Pump Station/Drywell Vault:

1. The pumps and piping are to be removed and replaced.
2. The interior walls are to be re-painted.

Please note that this vault contains two rooms. These rooms consist of the Pump Room (Room #1 as noted on the attached floor plan sketch) and the Drywell Room. No work is scheduled to be performed in the Drywell Room so this location was not included as part of this survey.

The Pump Station is constructed with painted concrete walls, ceiling, and floor. The entry hatches and stairwell consist of unpainted galvanized steel. The pumps and piping that are to be updated or replaced are painted steel and cast iron. The only accessible potential asbestos containing material noted in this room were gaskets on some pipe flanges. These materials were sampled. No potential asbestos containing materials were noted on the ground level roof slab.

III. Asbestos and Lead Survey

Asbestos

The asbestos survey consisted of a visual inspection and bulk sampling to identify ACM within the designated spaces. Samples were identified with a unique ID number, with sampling locations labeled and documented both by photographs and on the attached floor plan sketches. All asbestos samples taken are identified in Red on the attached floor plan drawings. Suspect materials were sampled and submitted for analysis to determine asbestos content.

Analysis was performed via EPA Method 600M4 (laboratory manual approval Items 198.1, 198.4 and 198.6, utilizing Polarized Light Microscopy (PLM) and using Transmission Electron Microscopy (TEM). All bulk samples collected were submitted to EMSL's Carl Place laboratory located at 528 Mineola Avenue, Carl Place New York, NY for analysis. EMSL is approved by the NYS Department of Health (NYS ELAP certification # 11469) for the analysis of bulk samples to determine asbestos content.

Procedures for locating and identifying ACM were based on guidelines published by the United States Environmental Protection Agency (EPA).[1] The EPA defines asbestos as any material that contains more than 1% asbestos.

Lead

Mr. Edward F. von Briesen (Ct. Inspector Certificate No. IR001381, E.P.A. Certificate No. NY-R-5760-6) utilized an RMD Model LPA-1 X-ray Fluorescence (XRF) instrument (serial # 01379). One XRF reading was performed for each testing combination except for walls. The following components that were adjacent to each other were grouped together into one single testing combination:

- Window casings and aprons
- Window stops and jambs
- Interior window mullions and window sash
- Exterior window mullions and sash
- Door jambs, stops, transoms, casings, and other door frame parts
- Door styles, rails, panels, mullions, and other door parts
- Baseboards and associated trim
- Painted electrical sockets, switches, or plates were grouped with walls
- Pumps painted the same color
- Pipe and conduit painted the same color

[1] Environmental Protection Agency, Guidelines for Controlling Asbestos-Containing Materials in Buildings, Office of Pesticides and Toxic Substances, EPA Report Number 560/5-85-024.

In the Control Building Roof, and the Pump Station/Drywell building, Wall A faces Burman Boulevard. The remaining walls are labeled B, C and D in a clockwise fashion. Calibration XRF readings were conducted at the beginning and the end of the inspection using the manufacturer's calibration block.

Please note that in several instances, similar components such as walls, piping, steel conduit, pump bodies and motors of the same color and substrate were only tested in one location. If the component checked tested positive for lead, it should be assumed that all similar components are also positive for lead. Components that tested negative for lead and that are similar can also be considered negative (less than 1.0 mg/sq cm).

IV. Discussion/Summary

Asbestos

A total of thirty eight bulk samples from the Control Building and four bulk samples from the pump vault were collected and submitted for laboratory analysis to determine if these materials contained asbestos.

All samples were collected from miscellaneous materials and submitted as a representative sampling group with a positive stop protocol. The materials tested included mortar cement, window and door caulking, pipe flange gasket material, tan linoleum floor tile and black floor tile mastic, vinyl baseboard trim mastic, roofing material and roof flashing mastics.

All materials in the pump vault tested negative for asbestos. The results indicate that the following materials in the Control Building tested positive for asbestos:

- Flat roofing material; Wall C on roof
- Black mastic front and rear fan vent flashing; Roof
- Black mastic front and rear chimney flashing; Roof
- Black mastic front and rear center vent flashing; Roof Wall B
- Tan floor linoleum tile; Room #1 Pump Room Hall

Lead

"Lead based paint" is defined by the U.S. Department of Housing and Urban Development (HUD) as a dried paint film containing equal to or greater than 1.0 milligrams of lead per square centimeter (mg/sq cm).

Negative XRF readings or readings of 0.0 and 0.1 mg/sq cm are statistically insignificant and are considered zero for lead. Readings of 1.0 mg/sq cm or greater are considered positive for lead. The "Action Level" for this inspection is 1.0 mg/sq cm.

All painted surfaces tested in both buildings were found to be below the Federal H.U.D. action level for lead based paint of 1.0 mg/sq cm except for the following locations:

Control Building - Interior Room #1 - interior areas of the Pump Room:

1. Green steel riser pipes located on wall B
2. Smaller horizontal pipe running along the ceiling at wall B

Pump Station/Drywell – Interior Room #1 – Pump Room:

1. All steel pump bodies
2. All steel and cast iron piping.
3. Gray steel float chamber located on wall B, right.

All positive lead readings are listed in the "Summary Report" section of the attached XRF results pages.

V. Conclusions:

Lead was found in the paint on piping running along the ceiling as well as the two riser pipes located in the Control Building Pump Room. Lead paint was also found on the pump bodies and the piping in the Pump Station/Drywell Vault Pump Room. It should be assumed that all of the pumps and piping in the Pump Station/Drywell Pump Room are positive for lead.

It is recommended that when the renovations are being performed, lead safe work practices as defined by OSHA and the EPA be followed wherever lead paint was found.

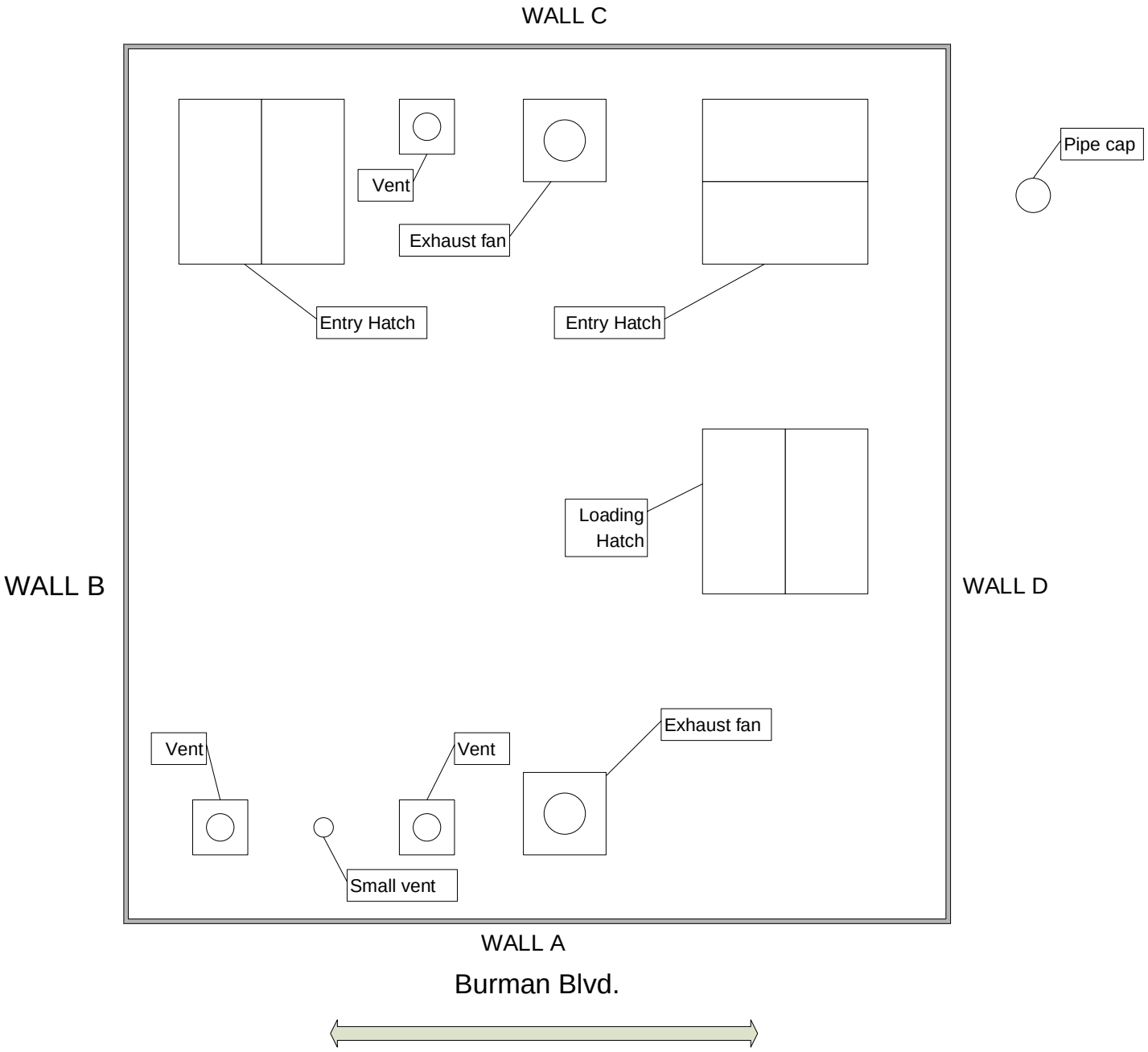
Surfaces that test negative for lead may in fact contain small amounts of lead that can be liberated as dust during renovation activities. Sound Environmental suggests that efforts be made to suppress and contain dust wherever painted surfaces are disturbed, regardless of whether those surfaces tested positive with XRF testing. Unprotected workers should be kept away from the premises when construction and demolition is under way.

The results of this survey determined the following materials were positive for asbestos:

- flat roofing material
- black mastic on front and rear vent on the roof
- Chimney roof flashing
- Black mastic on roof flashing.
- Tan floor linoleum floor tile in the pump room hall

These materials must be abated by a licensed asbestos contractor prior to demolition.

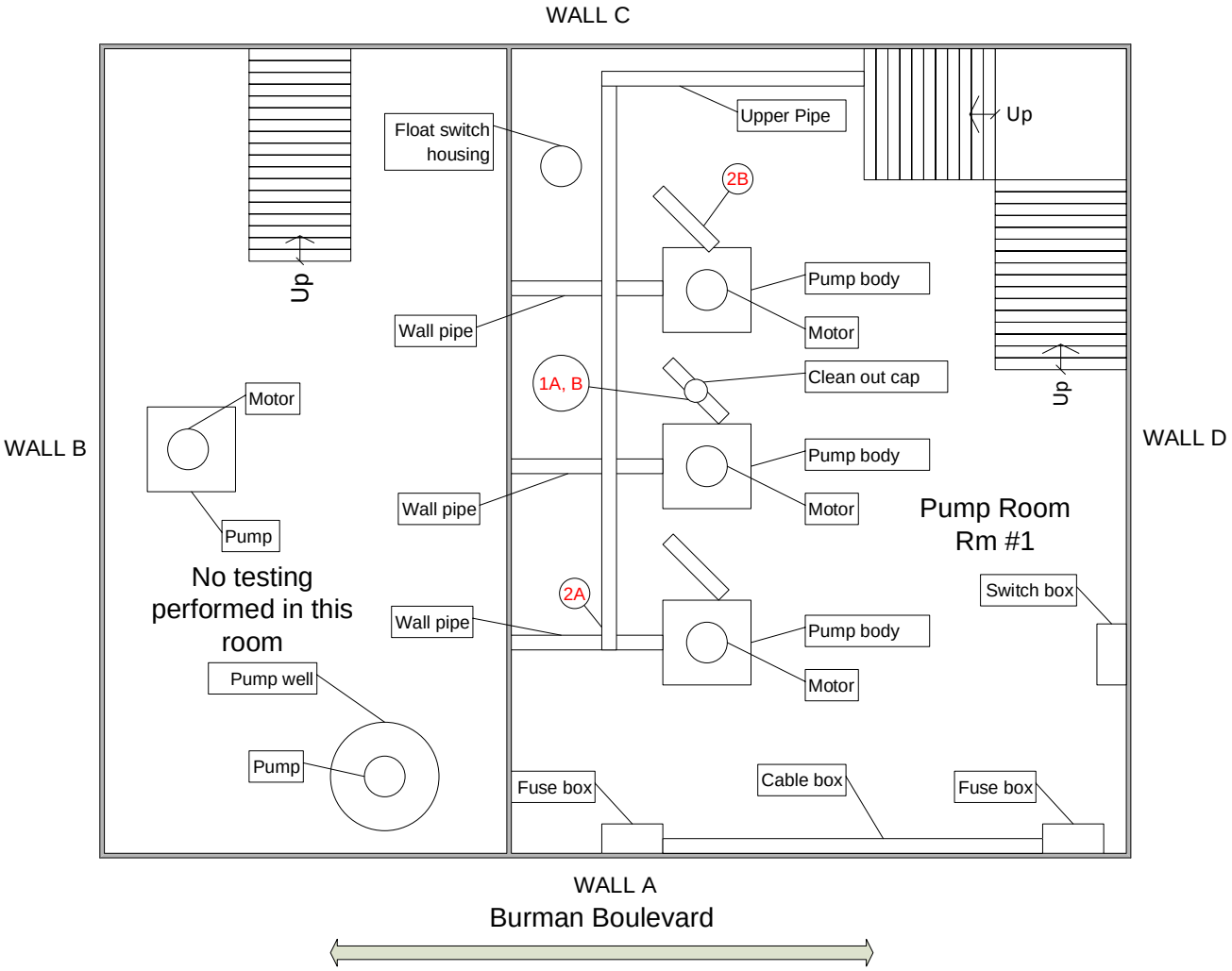
Roof Plan
Calverton Sewage Treatment Plant
Pump Vault
4062 Grumman Boulevard
Calverton, NY.



Floor Plan
Pump Vault
Calverton Sewage Treatment Plant
4062 Grumman Blvd.
Calverton, NY.

Drawing not to scale

Asbestos sample locations are indicated in red



Appendix A-Asbestos Sample Results

OrderID: 061716779

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Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*: 061716779

PHONE:
FAX:

Company Name : Sound Environmental		**EMSL Customer ID:**	
Street: 23 Lighthouse Court		**City:** Tompkins Cove	**State/Province:** N.Y.
Zip/Postal Code: 10986	**Country:** USA	**Telephone #:** 631-356-5426	**Fax #:**
Report To (Name): Erin Marsalisi		**Please Provide Results:** ☐ Fax ☑ Email	
Email Address: erin@soundny.com		**Purchase Order:**	
Project Name/Number: Calverton, NY. Sewage Pump Station - Control Bldg		**EMSL Project ID** *(Internal Use Only)*:	
U.S. State Samples Taken: 4		**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt	

EMSL-Bill to: ☑ Same ☐ Different - If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☒ 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

PCM - Air ☐ Check if samples are from NY
☐ NIOSH 7400
☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
☐ PLM EPA 600/R-93/116 (<1%)
☐ PLM EPA NOB (<1%)
Point Count
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
☑ NYS 198.1 (friable in NY)
☑ NYS 198.6 NOB (non-friable-NY)
☑ NYS 198.8 SOF-V
☐ NIOSH 9002 (<1%)

TEM – Air ☐ 4-4.5hr TAT (AHERA only)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Bulk
☐ TEM EPA NOB
☑ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP
☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
Fibers >10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
☐ Microvac - ASTM D 5755
☐ Wipe - ASTM D6480
☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
☐ PLM EPA 600/R-93/116 with milling prep (<1%)
☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
☐ TEM Qualitative via Filtration Prep
☐ TEM Qualitative via Drop Mount Prep
☐ Cincinnati Method EPA 600/R-04/004 – PLM/TEM (BC only)

Other:
☐

☑ **Check For Positive Stop – Clearly Identify Homogenous Group** | **Filter Pore Size (Air Samples):** ☑ 0.8µm ☐ 0.45µm

Samplers Name: Edward F. von Briesen | **Samplers Signature:**

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	ROOF AREA:		
1A	Wall A, left - core sample - flat roofing material	>1950 sq ft	9/26/17 PM
1B	Wall C, right - core sample - flat roofing material	>1950 sq ft	9/26/17 PM
2A	Front fan vent flashing - front - black mastic	approx 6 ft	9/26/17 PM
2B	Front fan vent flashing - rear - black mastic	approx 6 ft	9/26/17

Client Sample # (s): - **Total # of Samples:** 38

Relinquished (Client): Edward F. von Briesen **Date:** 9/28/17 **Time:**

Received (Lab): **Date:** 9/28/17 **Time:** 1107PM

Comments/Special Instructions:
Test PLM. If inconclusive, test TEM

Jonas Montalvo 10/10/17

TEM - 10/11/17

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Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only):*

061716779

PHONE:
FAX:

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
3A	Chimney flashing - front - black mastic	approx 8 ft	9/26/17 PM
3B	Chimney flashing - rear- black mastic	approx 8 ft	9/26/17 PM
4A	Wall B, ctr - vent flashing - rear - black mastic	approx 6 ft	9/26/17 PM
4B	Wall B, ctr - vent flashing - front- black mastic	approx 6 ft	9/26/17 PM
	BUILDING - INTERIOR - ROOM #1 - Pump room		
5A	Hall - tan floor linoleum tile	ap 300 sq ft	9/26/17 PM
5B	Hall - tan floor linoleum tile	ap 300 sq ft	9/26/17 PM
6A	Hall - black floor tile adhesive mastic	ap 300 sq ft	9/26/17 PM
6B	Hall - black floor tile adhesive mastic	ap 300 sq ft	9/26/17 PM
7A	Hall baseboard - brown mastic	aprox 150 ft	9/26/17 PM
7B	Hall baseboard - brown mastic	aprox 150 ft	9/26/17 PM
8A	Rear entry door - interior side jamb - white caulk	approx 20 ft	9/26/17 PM
8B	Rear entry door - interior side jamb - white caulk	approx 20 ft	9/26/17 PM
9A	Interior wall window - white perimeter caulk	approx 9 ft	9/26/17 PM
9B	Interior wall window - white perimeter caulk	approx 9 ft	9/26/17 PM
10A	Wall A - interior window - gray perimeter caulk	approx 14 ft	9/26/17 PM
10B	Wall A - interior window - gray perimeter caulk	approx 14 ft	9/26/17 PM
11A	Wall B, left-interior window-white perimeter caulk	approx 14 ft	9/26/17 PM
11B	Wall B,right-interior window-white perimeter caulk	approx 14 ft	9/26/17 PM
12A	Utility room partition wall - mortar cement	>1000 ft	9/26/17 PM
	BUILDING INTERIOR - ROOM #2 - Utility room		9/26/17 PM
12B	Wall A, left-window opening wall - mortar cement	>1000 ft	9/26/17 PM
13A	Wall A, left side - gray window caulk	approx 9 ft	9/26/17 PM

***Comments/Special Instructions:**

RECEIVED EMSL ANALYTICAL, INC. CINNAMINSON PLACE, NY OCT 28 PM 1:07

Tonia Montella Ocn 10/10/17

TEM- DL 10/11/17

10/5/17 6 3pm

Controlled Document – Asbestos COC – R10 – 05/09/2016

EMSL ANALYTICAL, INC.
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Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*: 061716779

PHONE:
FAX:

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	BUILDING INTERIOR ROOM #2 - Continued		
13B	Wall A, window - right side - gray window caulk	approx 9 ft	9/26/17 PM
14A	Wall C, door-interior side-gray buck frame caulk	approx 20 ft	9/26/17 PM
14B	Wall C, door-interior side-gray buck frame caulk	approx 20 ft	9/26/17 PM
	BUILDING EXTERIOR - ROOMS #1 and #2		
15A	Utility Rm. entry door - buck frame white caulk	approx 20 ft	9/26/17 PM
15B	Utility Rm. entry door - buck frame white caulk	approx 20 ft	9/26/17 PM
16A	Wall A, window frame - white perimeter caulk	approx 16 ft	9/26/17 PM
16B	Wall A, window frame - white perimeter caulk	approx 16 ft	9/26/17 PM
17A	Wall B, right-window frame-white perimeter caulk	approx 16 ft	9/26/17 PM
17B	Wall B,centr-window frame-white perimeter caulk	approx 16 ft	9/26/17 PM
	PUMP ROOM - INTERIOR ROOM #1		
18A	Riser pipe, wall B center - flange gasket	approx 1 ft	9/27/17 AM
18B	Smaller ceiling pipe, wall B, right - flange gasket	approx 1 ft	9/27/17 AM
19A	Wall B, right - pump flange gasket	approx 1 ft	9/27/17 AM
19B	Wall B, right - pump flange gasket	approx 1 ft	9/27/17 AM

RECEIVED BY EMSL ANALYTICAL, INC. PLACE, NY 10:0 SEP 28 PM 1

***Comments/Special Instructions:**

Tomás Montalvo Oca 10/10/17

TEM- DL 10/11/17

10/9/17 63A

Controlled Document – Asbestos COC – R10 – 05/09/2016

EMSL Analytical, Inc.
528 Mineola Avenue, Carle Place, NY 11514
Phone/Fax: (516) 997-7251 / (516) 997-7528
http://www.EMSL.com carleplacelab@emsl.com

EMSL Order: 061716779
CustomerID: SOUN63
CustomerPO:
ProjectID:

Attn: **Erin Bubka**
Sound Environmental Association
67 Heights Road
Stony Point, NY 10980

Phone: (631) 414-7198
Fax: (631) 514-3697
Received: 09/28/17 1:07 PM
Analysis Date: 10/10/2017
Collected: 9/26/2017

Project: **Calverton, NY, Sewage Pump Station, Control Bldg.**

Test Report:Asbestos Analysis of Bulk Material

Test	Analyzed Date	Color	Non Asbestos Fibrous	Non Asbestos Non-Fibrous	Asbestos
Sample ID 1A *061716779-0001*		**Description** Roof Area, Wall A, Left, Core Sample - Flat Roofing Material **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/10/2017	Black	<1% Fibrous (other) <1% Glass		**Inconclusive: None Detected**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 1B *061716779-0002*		**Description** Roof Area, Wall C, Right-Core Sample - Flat Roofing Material **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/10/2017	Black	<1% Glass		**5.8% Chrysotile** **5.8% Total**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 2A *061716779-0003*		**Description** Roof Area, Front Fan Vent Flashing, Front - Black Mastic **Homogeneity** Homogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Black			**13.0% Chrysotile** **13.0% Total**
TEM NYS 198.4 NOB	10/9/2017				**Not Analyzed**
Sample ID 2B *061716779-0004*		**Description** Roof Area, Front Fan Vent Flashing, Rear - Black Mastic **Homogeneity**			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017				**Positive Stop (Not Analyzed)**
TEM NYS 198.4 NOB	10/9/2017				**Not Analyzed**
Sample ID 3A *061716779-0005*		**Description** Roof Area, Chimney Flashing, Front - Black Mastic **Homogeneity** Homogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Black			**8.2% Chrysotile** **8.2% Total**
TEM NYS 198.4 NOB	10/9/2017				**Not Analyzed**

Initial Report From 10/11/2017 20:12:50

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http://www.EMSL.com carleplacelab@emsl.com

EMSL Order: 061716779
CustomerID: SOUN63
CustomerPO:
ProjectID:

Test Report:Asbestos Analysis of Bulk Material

Test		Color	Non Asbestos Fibrous	Non Asbestos Non-Fibrous	Asbestos
Sample ID 3B *061716779-0006*		**Description** Roof Area, Chimney Flashing, Rear - Black Mastic **Homogeneity**			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017				**Positive Stop (Not Analyzed)**
TEM NYS 198.4 NOB	10/9/2017				**Not Analyzed**
Sample ID 4A *061716779-0007*		**Description** Roof Area, Wall B, Center, Vent Flashing, Rear - Black Mastic **Homogeneity** Homogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Black			**5.4% Chrysotile** **5.4% Total**
TEM NYS 198.4 NOB	10/9/2017				**Not Analyzed**
Sample ID 4B *061716779-0008*		**Description** Roof Area, Wall B, Center, Vent Flashing, Front - Black Mastic **Homogeneity**			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017				**Positive Stop (Not Analyzed)**
TEM NYS 198.4 NOB	10/9/2017				**Not Analyzed**
Sample ID 5A *061716779-0009*		**Description** Building, Interior, Room #1, Pump Room, Hall - Tan Floor Linoleum Tile **Homogeneity** Homogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Brown			**5.7% Chrysotile** **5.7% Total**
TEM NYS 198.4 NOB	10/9/2017				**Not Analyzed**
Sample ID 5B *061716779-0010*		**Description** Building, Interior, Room #1, Pump Room, Hall - Tan Floor Linoleum Tile **Homogeneity**			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017				**Positive Stop (Not Analyzed)**
TEM NYS 198.4 NOB	10/9/2017				**Not Analyzed**
Sample ID 6A *061716779-0011*		**Description** Building, Interior, Room #1, Pump Room, Hall - Black Floor Tile Adhesive Mastic **Homogeneity** Homogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Brown			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Brown			**None Detected**

Initial Report From 10/11/2017 20:12:50

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528 Mineola Avenue, Carle Place, NY 11514
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http://www.EMSL.com carleplacelab@emsl.com

EMSL Order: 061716779
CustomerID: SOUN63
CustomerPO:
ProjectID:

Test Report:Asbestos Analysis of Bulk Material

Test		Color	Non Asbestos Fibrous	Non-Fibrous	Asbestos
Sample ID 6B *061716779-0012*		**Description** **Homogeneity**	Building, Interior, Room #1, Pump Room, Hall - Black Floor Tile Adhesive Mastic Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Brown			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Brown			**<1% Chrysotile** **<1% Total**
Sample ID 7A *061716779-0013*		**Description** **Homogeneity**	Building, Interior, Room #1, Pump Room, Hall Baseboard - Brown Mastic Homogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Brown			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Brown			**None Detected**
Sample ID 7B *061716779-0014*		**Description** **Homogeneity**	Building, Interior, Room #1, Pump Room, Hall Baseboard - Brown Mastic Homogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Brown			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Brown			**<1% Chrysotile** **<1% Total**
Sample ID 8A *061716779-0015*		**Description** **Homogeneity**	Building, Interior, Room #1, Pump Room, Rear Entry Door, Interior Side Jamb - White Caulk Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Brown/Gray			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Brown/Gray			**None Detected**
Sample ID 8B *061716779-0016*		**Description** **Homogeneity**	Building, Interior, Room #1, Pump Room, Rear Entry Door, Interior Side Jamb - White Caulk Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Brown/Gray			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Brown/Gray			**None Detected**
Sample ID 9A *061716779-0017*		**Description** **Homogeneity**	Building, Interior, Room #1, Pump Room, Interior Wall Window - White Perimeter Caulk Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray			**None Detected**

Initial Report From 10/11/2017 20:12:50

EMSL Analytical, Inc.
528 Mineola Avenue, Carle Place, NY 11514
Phone/Fax: (516) 997-7251 / (516) 997-7528
http://www.EMSL.com carleplacelab@emsl.com

EMSL Order: 061716779
CustomerID: SOUN63
CustomerPO:
ProjectID:

Test Report:Asbestos Analysis of Bulk Material

Test		Color	Non Asbestos Fibrous	Non-Fibrous	Asbestos
Sample ID 9B *061716779-0018*		**Description** Building, Interior, Room #1, Pump Room, Interior Wall Window - White Perimeter Caulk **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray			**None Detected**
Sample ID 10A *061716779-0019*		**Description** Building, Interior, Room #1, Pump Room, Wall A, Interior Window - Gray Perimeter Caulk **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray			**None Detected**
Sample ID 10B *061716779-0020*		**Description** Building, Interior, Room #1, Pump Room, Wall A, Interior Window - Gray Perimeter Caulk **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray			**None Detected**
Sample ID 11A *061716779-0021*		**Description** Building, Interior, Room #1, Pump Room, Wall B, Left, Interior Window - White Perimeter Caulk **Homogeneity** Homogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray			**None Detected**
Sample ID 11B *061716779-0022*		**Description** Building, Interior, Room #1, Pump Room, Wall B, Left, Interior Window - White Perimeter Caulk **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray			**None Detected**
Sample ID 12A *061716779-0023*		**Description** Building, Interior, Room #1, Pump Room, Utility Room Partition Wall - Mortar Cement **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable	10/9/2017	Tan/White	55.00% Quartz 30.00% Ca Carbonate 15.00% Non-fibrous (other)		**None Detected**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**

Initial Report From 10/11/2017 20:12:50

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EMSL Order: 061716779
CustomerID: SOUN63
CustomerPO:
ProjectID:

Test Report:Asbestos Analysis of Bulk Material

Test		Color	Non Asbestos Fibrous	Non-Fibrous	Asbestos
Sample ID 12B *061716779-0024*		**Description** Building, Interior, Room #2, Utility Room, Wall A, Left, Window Opening Wall - Mortar Cement **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable	10/9/2017	Tan/White		60.00% Quartz 20.00% Ca Carbonate 20.00% Non-fibrous (other)	**None Detected**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB					**Not Analyzed**
TEM NYS 198.4 NOB					**Not Analyzed**
Sample ID 13A *061716779-0025*		**Description** Building, Interior, Room #2, Utility Room, Wall A, Left Side - Gray Window Caulk **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray			**None Detected**
Sample ID 13B *061716779-0026*		**Description** Building, Interior, Room #2, Utility Room, Wall A, Window, Right Side - Gray Window Caulk **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray			**None Detected**
Sample ID 14A *061716779-0027*		**Description** Building, Interior, Room #2, Utility Room, Wall C, Door, Interior Side - Gray Buck Frame Caulk **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray/White			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray/White			**None Detected**
Sample ID 14B *061716779-0028*		**Description** Building, Interior, Room #2, Utility Room, Wall C, Door, Interior Side - Gray Buck Frame Caulk **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray/White			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray/White			**None Detected**
Sample ID 15A *061716779-0029*		**Description** Building Exterior, Rooms #1 & #2, Utility Room Entry Door - White Buck Frame Caulk **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Brown/Gray			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Brown/Gray			**None Detected**

Initial Report From 10/11/2017 20:12:50

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http://www.EMSL.com carleplacelab@emsl.com

EMSL Order: 061716779
CustomerID: SOUN63
CustomerPO:
ProjectID:

Test Report:Asbestos Analysis of Bulk Material

Test		Color	Non Asbestos Fibrous	Non-Fibrous	Asbestos
Sample ID 15B *061716779-0030*		**Description** Building Exterior, Rooms #1 & #2, Utility Room Entry Door - White Buck Frame Caulk **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Brown/Gray			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Brown/Gray			**None Detected**
Sample ID 16A *061716779-0031*		**Description** Building Exterior, Rooms #1 & #2, Wall A, Window Frame - White Perimeter Caulk **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray/Pink			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray/Pink			**None Detected**
Sample ID 16B *061716779-0032*		**Description** Building Exterior, Rooms #1 & #2, Wall A, Window Frame - White Perimeter Caulk **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray/Pink			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray/Pink			**None Detected**
Sample ID 17A *061716779-0033*		**Description** Building Exterior, Rooms #1 & #2, Wall B, Right, Window Frame - White Perimeter Caulk **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray/Pink			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray/Pink			**None Detected**
Sample ID 17B *061716779-0034*		**Description** Building Exterior, Rooms #1 & #2, Wall B, Center, Window Frame - White Perimeter Caulk **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray/Pink			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray/Pink			**None Detected**
Sample ID 18A *061716779-0035*		**Description** Building Exterior, Rooms #1 & #2, Riser Pipe, Wall B, Center - Flange Gasket **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray/Green			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray/Green			**None Detected**

Initial Report From 10/11/2017 20:12:50

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http://www.EMSL.com carleplacelab@emsl.com

EMSL Order:	061716779
CustomerID:	SOUN63
CustomerPO:	
ProjectID:	

Test Report:Asbestos Analysis of Bulk Material

Test		Color	Non Asbestos Fibrous	Non-Fibrous	Asbestos
Sample ID	18B	**Description**	Building Exterior, Rooms #1 & #2, Smaller Ceiling Pipe, Wall B, Right - Flange Gasket		
	061716779-0036	**Homogeneity**	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Brown/Green			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Brown/Green			**None Detected**
Sample ID	19A	**Description**	Building Exterior, Rooms #1 & #2, Wall B, Right - Pump Flange Gasket		
	061716779-0037	**Homogeneity**	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray/Red			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray/Red			**None Detected**
Sample ID	19B	**Description**	Building Exterior, Rooms #1 & #2, Wall B, Right - Pump Flange Gasket		
	061716779-0038	**Homogeneity**	Heterogeneous		
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray/Red			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/11/2017	Gray/Red			**None Detected**

Analyst(s)

Jackson Li

Steve Jusczuk

Tomas Montes De Oca

Michelle McGowan, Laboratory Manager
or other approved signatory

NOB = Non Friable Organically Bound N/A = Not Applicable VCM = Vermiculite Containing Material

-In New York State, TEM is currently the only method that can be used to determine if NOB materials can be considered or treated as non-asbestos containing.
All samples examined for the presence of vermiculite when analyzed via NYS 198.1.
-NYS Guidelines for Vermiculite containing samples are available at http://www.wadsworth.org/labcert/elapcert/forms/VermiculiteInterimGuidance_Rev070913.pdf
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This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. This report may contain data that is not covered by the NVLAP accreditation.

Samples analyzed by EMSL Analytical, Inc. Carle Place, NY NYS ELAP 11469

Initial Report From 10/11/2017 20:12:50

OrderID: 061716837

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number (Lab Use Only): 061716837

PHONE:
FAX:

Company Name: Sound Environmental		**EMSL Customer ID:**	
Street: 23 Lighthouse Court		**City:** Tompkins Cove	**State/Province:** N.Y.
Zip/Postal Code: 10986	**Country:** USA	**Telephone #:** 631-356-5426	**Fax #:**
Report To (Name): Erin Marsalisi		**Please Provide Results:** ☐ Fax ☑ Email	
Email Address: erin@soundny.com		**Purchase Order:**	
Project Name/Number: Calverton, NY. Sewage Pump Station - Pump Pit		**EMSL Project ID** (*Internal Use Only*):	
U.S. State Samples Taken: 4		**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt	

EMSL-Bill to: ☑ Same ☐ Different - If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour | ☐ 6 Hour | ☐ 24 Hour | ☐ 48 Hour | ☐ 72 Hour | ☐ 96 Hour | ☐ 1 Week | ☒ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PCM - Air ☐ Check if samples are from NY
☐ NIOSH 7400
☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
☐ PLM EPA 600/R-93/116 (<1%)
☐ PLM EPA NOB (<1%)
Point Count
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
☑ NYS 198.1 (friable in NY)
☑ NYS 198.6 NOB (non-friable-NY)
☑ NYS 198.8 SOF-V
☐ NIOSH 9002 (<1%)

TEM – Air ☐ 4-4.5hr TAT (AHERA only)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Bulk
☐ TEM EPA NOB
☑ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP
☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
Fibers >10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
☐ Microvac - ASTM D 5755
☐ Wipe - ASTM D6480
☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
☐ PLM EPA 600/R-93/116 with milling prep (<1%)
☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
☐ TEM Qualitative via Filtration Prep
☐ TEM Qualitative via Drop Mount Prep
☐ Cincinnati Method EPA 600/R-04/004 – PLM/TEM (BC only)

Other:
☐

☑ **Check For Positive Stop – Clearly Identify Homogenous Group**

Filter Pore Size (Air Samples): ☑ 0.8µm ☐ 0.45µm

Samplers Name: Edward F. von Briesen

Samplers Signature:

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
1A	Wall B, center - Horizontal pipe clean out gasket	approx 3 ft.	9/27/17 AM
1B	Wall B, center - Horizontal pipe clean out gasket	approx 3 ft.	9/27/17 AM
2A	Wall B, left - Top pipe flange gasket	aprox 20 ft	9/27/17 AM
2B	Wall B, right - Top pipe flange gasket	aprox 20 ft	9/27/17 AM

Client Sample # (s): 1A - 2B **Total # of Samples:** 4

Relinquished (Client): Edward F. von Briesen **Date:** 9/28/17 **Time:**

Received (Lab): **Date:** 9/28/17 **Time:** 10:00 AM

Comments/Special Instructions:
Test PLM. If inconclusive, test TEM

Controlled Document – Asbestos COC – R10 – 05/09/2016

9/28/17 9:42A

10/12/17

EMSL Analytical, Inc.
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http://www.EMSL.com carleplacelab@emsl.com

EMSL Order: 061716837
CustomerID: SOUN63
CustomerPO:
ProjectID:

Attn: **Sheila Bubka**
Sound Environmental Association
67 Heights Rd
Stony Point, NY 10980

Phone: (631) 414-7198
Fax: (631) 514-3697
Received: 09/28/17 1:07 PM
Analysis Date: 10/12/2017
Collected: 9/27/2017

Project: **Calverton, NY, Sewage Pump Station, Pump Pit**

Test Report:Asbestos Analysis of Bulk Material

Test	Analyzed Date	Color	Non Asbestos Fibrous	Non Asbestos Non-Fibrous	Asbestos
Sample ID 1A *061716837-0001*		**Description** Wall B, Center - Horizontal Pipe Clean Out Gasket **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Tan			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/12/2017	Tan			**None Detected**
Sample ID 1B *061716837-0002*		**Description** Wall B, Center - Horizontal Pipe Clean Out Gasket **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Tan			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/12/2017	Tan			**None Detected**
Sample ID 2A *061716837-0003*		**Description** Wall B, Left - Top Pipe Flange Gasket **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray/Red			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/12/2017	Gray/Red			**None Detected**
Sample ID 2B *061716837-0004*		**Description** Wall B, Right - Top Pipe Flange Gasket **Homogeneity** Heterogeneous			
PLM NYS 198.1 Friable					**Not Analyzed**
PLM NYS 198.6 VCM					**Not Analyzed**
PLM NYS 198.6 NOB	10/9/2017	Gray/Red			**Inconclusive: None Detected**
TEM NYS 198.4 NOB	10/12/2017	Gray/Red			**None Detected**

Initial Report From 10/12/2017 11:47:14

EMSL Analytical, Inc.
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http://www.EMSL.com carleplacelab@emsl.com

EMSL Order:	061716837
CustomerID:	SOUN63
CustomerPO:	
ProjectID:	

Test Report:Asbestos Analysis of Bulk Material

Test	Color	Non Asbestos Fibrous	Non-Fibrous	Asbestos

Analyst(s)

Danny Sandhu

Steve Jusczuk

Michelle McGowan, Laboratory Manager
or other approved signatory

NOB = Non Friable Organically Bound N/A = Not Applicable VCM = Vermiculite Containing Material

-In New York State, TEM is currently the only method that can be used to determine if NOB materials can be considered or treated as non-asbestos containing.
All samples examined for the presence of vermiculite when analyzed via NYS 198.1.
-NYS Guidelines for Vermiculite containing samples are available at http://www.wadsworth.org/labcert/elapcert/forms/VermiculiteInterimGuidance_Rev070913.pdf
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Samples analyzed by EMSL Analytical, Inc. Carle Place, NY NYS ELAP 11469

Initial Report From 10/12/2017 11:47:14

Appendix B-Lead Sample Results

LEAD PAINT INSPECTION REPORT

REPORT NUMBER: S#01379 - 09/26/17 10:15

INSPECTION FOR: Sound Environmental
67 Heights Road
Stony Point, N.Y. 10980

PERFORMED AT: Calverton Sewage Treatment Plant
Control Building
Burman Road (4062 Grumman Blvd)
Calverton, N.Y.

INSPECTION DATE: 09/26/17

INSTRUMENT TYPE: R M D
MODEL LPA-1
XRF TYPE ANALYZER
Serial Number: 01379

ACTION LEVEL: 1.0 mg/cm**2

OPERATOR LICENSE: Ct. Lic. #001381
E.P.A. Certificate #NY-R-5760-6

STATEMENT: This limited XRF lead based paint survey was conducted per all Federal H.U.D. test protocols for lead based paint in effect as of the date of this report. Only the pump room and utility room were tested per the instructions of the Client.

Edward F. von Briesen

SIGNED _____ DATE 09/26/17

Long Island Lead Assessment &
Control
P.O. Box 236
Mill Neck, N.Y. 11765
Phone: 516 - 922 - 0700

SEQUENTIAL REPORT OF LEAD PAINT INSPECTION FOR: Sound Environmental

Inspection Date: 09/26/17
Report Date: 9/26/2017
Abatement Level: 1.0
Report No. S#01379 - 09/26/17 10:15
Total Readings: 50
Job Started: 09/26/17 10:15
Job Finished: 09/26/17 11:35

Calverton Sewage Treatment Plant
Control Building
Burman Road (4062 Grumman Blvd)
Calverton, N.Y.

Read No.	Rm	Room Name	Wall	Structure	Location	Member	Paint Cond	Substrate	Paint Color	Lead (mg/cm²)	Mode
1		CALIBRATION								0.9	TC
2		CALIBRATION								1.0	TC
3		CALIBRATION								1.0	TC
4		CALIBRATION								0.0	TC
5		CALIBRATION								0.0	TC
6		CALIBRATION								0.0	TC
7	001	Pump Room	A	Wall	U Lft		I	Concrete	Beige	0.0	QM
8	001	Pump Room	A	Wall	U Rgt		I	Concrete	Beige	-0.1	QM
9	001	Pump Room	B	Wall	U Ctr		I	Concrete	Beige	0.0	QM
10	001	Pump Room	C	Wall	U Ctr		I	Concrete	Beige	-0.1	QM
11	001	Pump Room	D	Wall	U Lft		I	Concrete	Beige	-0.3	QM
12	001	Pump Room	D	Wall	U Rgt		I	Concrete	Beige	0.0	QM
13	001	Pump Room	A	Ceiling			P	Concrete	Gray	-0.1	QM
14	001	Pump Room	B	Floor			I	Concrete	Gray	-0.1	QM
15	001	Pump Room	B	Riser pipe	Ctr		I	Steel	Green	1.0	QM
16	001	Pump Room	B	Door	Rgt	U Rgt	I	Steel	Brown	0.3	QM
17	001	Pump Room	B	Door	Rgt	Rgt casing	I	Steel	Brown	0.0	QM
18	001	Pump Room	B	Door	Rgt	Lft jamb	I	Steel	Brown	0.1	QM
19	001	Pump Room	B	Ceiling pipe	Ctr		I	Steel	Green	1.0	QM
20	001	Pump Room	B	Pump Body	Ctr		I	Cast Iron	Gray	0.1	QM
21	001	Pump Room	B	Pump Motor	Ctr		I	Cast Iron	Gray	0.3	QM
22	001	Pump Room	B	Pump Base	Ctr		I	Steel	Gray	0.4	QM
23	001	Pump Room	B	Pump Body	Rgt		I	Cast Iron	Gray	0.1	QM
24	001	Pump Room	B	Pump Motor	Rgt		I	Cast Iron	Gray	0.3	QM
25	001	Pump Room	B	Pump Base	Rgt		I	Steel	Gray	0.0	QM
26	001	Pump Room	C	Door	Ctr	U Rgt	I	Steel	Brown	0.0	QM
27	001	Pump Room	C	Door	Ctr	Lft casing	I	Steel	Brown	0.2	QM
28	001	Pump Room	C	Door	Ctr	Rgt jamb	I	Steel	Brown	0.1	QM
29	001	Pump Room	C	Ceiling pipe	Ctr		I	Steel	Green	0.0	QM
30	001	Pump Room	C	Oil tank	Rgt		I	Steel	Gray	0.3	QM
31	001	Pump Room	D	Door	Ctr	U Rgt	I	Steel	Brown	0.0	QM
32	001	Pump Room	D	Door	Ctr	Lft casing	I	Steel	Brown	0.0	QM
33	001	Pump Room	D	Door	Ctr	Rgt jamb	I	Steel	Brown	0.1	QM
34	002	Utility Rm	A	Wall	U Ctr		I	Concrete	Beige	0.0	QM
35	002	Utility Rm	B	Wall	U Ctr		I	Concrete	Beige	0.0	QM
36	002	Utility Rm	C	Wall	U Ctr		I	Concrete	Beige	-0.1	QM
37	002	Utility Rm	D	Wall	U Rgt		I	Concrete	Beige	0.0	QM
38	002	Utility Rm	A	Ceiling			I	Concrete	White	-0.1	QM
39	002	Utility Rm	C	Floor			P	Concrete	Gray	0.0	QM
40	002	Utility Rm	D	Door	Ctr	U Rgt	I	Steel	Brown	0.0	QM
41	002	Utility Rm	D	Door	Ctr	Lft casing	I	Steel	Brown	0.0	QM
42	002	Utility Rm	D	Door	Ctr	Rgt jamb	I	Steel	Brown	0.0	QM
43	002	Utility Rm	D	Floor Hatch	Rgt		P	Steel	Gray	0.3	QM
44	001	Building #1	D	Fascia			I	Aluminum	White	0.0	QM
45		CALIBRATION								1.0	TC
46		CALIBRATION								1.0	TC
47		CALIBRATION								1.0	TC
48		CALIBRATION								0.0	TC
49		CALIBRATION								0.0	TC

50	CALIBRATION	0.0	TC

---- End of Readings ----

SUMMARY REPORT OF LEAD PAINT INSPECTION FOR: Sound Environmental

Inspection Date: 09/26/17
Report Date: 9/26/2017
Abatement Level: 1.0
Report No. S#01379 - 09/26/17 10:15
Total Readings: 50 Actionable: 2
Job Started: 09/26/17 10:15
Job Finished: 09/26/17 11:35

Calverton Sewage Treatment Plant
Control Building
Burman Road (4062 Grumman Blvd)
Calverton, N.Y.

Read No.	Wall	Structure	Location	Member	Paint Cond	Substrate	Paint Color	Lead (mg/cm²)	Mode
Interior Room 001 Pump Room									
015	B	Riser pipe	Ctr		I	Steel	Green	1.0	QM
019	B	Ceiling pipe	Ctr		I	Steel	Green	1.0	QM
Comment: Windows are unpainted aluminum with no painted trim. Vent louvers are unpainted steel.									
Calibration Readings									

---- End of Readings ----

DETAILED REPORT OF LEAD PAINT INSPECTION FOR: Sound Environmental

Inspection Date: 09/26/17
Report Date: 9/26/2017
Abatement Level: 1.0
Report No. S#01379 - 09/26/17 10:15
Total Readings: 50
Job Started: 09/26/17 10:15
Job Finished: 09/26/17 11:35

Calverton Sewage Treatment Plant
Control Building
Burman Road (4062 Grumman Blvd)
Calverton, N.Y.

Read No.	Wall	Structure	Location	Member	Paint Cond	Substrate	Paint Color	Lead (mg/cm²)	Mode
Exterior Room 001 Building #1									
044	D	Fascia			I	Aluminum	White	0.0	QM
Interior Room 001 Pump Room									
007	A	Wall	U Lft		I	Concrete	Beige	0.0	QM
008	A	Wall	U Rgt		I	Concrete	Beige	-0.1	QM
013	A	Ceiling			P	Concrete	Gray	-0.1	QM
009	B	Wall	U Ctr		I	Concrete	Beige	0.0	QM
014	B	Floor			I	Concrete	Gray	-0.1	QM
017	B	Door	Rgt	Rgt casing	I	Steel	Brown	0.0	QM
018	B	Door	Rgt	Lft jamb	I	Steel	Brown	0.1	QM
016	B	Door	Rgt	U Rgt	I	Steel	Brown	0.3	QM
015	B	Riser pipe	Ctr		I	Steel	Green	1.0	QM
019	B	Ceiling pipe	Ctr		I	Steel	Green	1.0	QM
020	B	Pump Body	Ctr		I	Cast Iron	Gray	0.1	QM
021	B	Pump Motor	Ctr		I	Cast Iron	Gray	0.3	QM
022	B	Pump Base	Ctr		I	Steel	Gray	0.4	QM
023	B	Pump Body	Rgt		I	Cast Iron	Gray	0.1	QM
024	B	Pump Motor	Rgt		I	Cast Iron	Gray	0.3	QM
025	B	Pump Base	Rgt		I	Steel	Gray	0.0	QM
010	C	Wall	U Ctr		I	Concrete	Beige	-0.1	QM
028	C	Door	Ctr	Rgt jamb	I	Steel	Brown	0.1	QM
027	C	Door	Ctr	Lft casing	I	Steel	Brown	0.2	QM
026	C	Door	Ctr	U Rgt	I	Steel	Brown	0.0	QM
029	C	Ceiling pipe	Ctr		I	Steel	Green	0.0	QM
030	C	Oil tank	Rgt		I	Steel	Gray	0.3	QM
011	D	Wall	U Lft		I	Concrete	Beige	-0.3	QM
012	D	Wall	U Rgt		I	Concrete	Beige	0.0	QM
033	D	Door	Ctr	Rgt jamb	I	Steel	Brown	0.1	QM
032	D	Door	Ctr	Lft casing	I	Steel	Brown	0.0	QM
031	D	Door	Ctr	U Rgt	I	Steel	Brown	0.0	QM
Comment: Windows are unpainted aluminum with no painted trim. Vent louvers are unpainted steel.									
Interior Room 002 Utility Room									
034	A	Wall	U Ctr		I	Concrete	Beige	0.0	QM
038	A	Ceiling			I	Concrete	White	-0.1	QM
035	B	Wall	U Ctr		I	Concrete	Beige	0.0	QM
036	C	Wall	U Ctr		I	Concrete	Beige	-0.1	QM
039	C	Floor			P	Concrete	Gray	0.0	QM
037	D	Wall	U Rgt		I	Concrete	Beige	0.0	QM
042	D	Door	Ctr	Rgt jamb	I	Steel	Brown	0.0	QM
041	D	Door	Ctr	Lft casing	I	Steel	Brown	0.0	QM
040	D	Door	Ctr	U Rgt	I	Steel	Brown	0.0	QM
043	D	Floor Hatch	Rgt		P	Steel	Gray	0.3	QM
Comment: Window is unpainted aluminum. Fan vent louver on wall A is unpainted steel.									
Calibration Readings									

001	0.9	TC
002	1.0	TC
003	1.0	TC
004	0.0	TC
005	0.0	TC
006	0.0	TC
045	1.0	TC
046	1.0	TC
047	1.0	TC
048	0.0	TC
049	0.0	TC
050	0.0	TC

---- End of Readings ----

LEAD PAINT INSPECTION REPORT

REPORT NUMBER: S#01379 - 09/27/17 10:10

INSPECTION FOR: Sound Environmental
67 Heights Road
Stony Point, N.Y. 10980

PERFORMED AT: Pump Station - Dry Well
Calverton Sewage Treatment Plant
4062 Grumman Boulevard (Burman Blvd.), Calverton, N.Y.

INSPECTION DATE: 09/27/17

INSTRUMENT TYPE: R M D
MODEL LPA-1
XRF TYPE ANALYZER
Serial Number: 01379

ACTION LEVEL: 1.0 mg/cm**2

OPERATOR LICENSE: Ct. Lic. #001381
E.P.A. Certificate #NY-R-5760-6

STATEMENT: This limited XRF lead based paint survey was conducted per all Federal H.U.D. test protocols for lead based paint in effect as of the date of this report. Only areas designated by the Client were tested.

SIGNED Edward F. von Briesen DATE 09/27/17

Long Island Lead Assessment & Control
P.O. Box 236
Mill Neck, N.Y. 11765
Phone: 516 - 922 - 0700

SEQUENTIAL REPORT OF LEAD PAINT INSPECTION FOR: Sound Environmental

Inspection Date: 09/27/17
Report Date: 9/27/2017
Abatement Level: 1.0
Report No. S#01379 - 09/27/17 10:10
Total Readings: 39
Job Started: 09/27/17 10:10
Job Finished: 09/27/17 11:27

Pump Station - Dry Well
Calverton Sewage Treatment Plant
4062 Grumman Boulevard (Burman Blvd.), Calverton, N.Y.

Read No.	Rm	Room Name	Wall	Structure	Location	Member	Paint Cond	Substrate	Paint Color	Lead (mg/cm²)	Mode
1		CALIBRATION								1.0	TC
2		CALIBRATION								1.1	TC
3		CALIBRATION								1.0	TC
4		CALIBRATION								0.0	TC
5		CALIBRATION								0.0	TC
6		CALIBRATION								0.0	TC
7	001	Pump Room	A	Wall	U	Lft	P	Concrete	Cream	0.0	QM
8	001	Pump Room	B	Wall	U	Ctr	P	Concrete	Cream	0.1	QM
9	001	Pump Room	C	Wall	U	Ctr	P	Concrete	Cream	-0.1	QM
10	001	Pump Room	D	Wall	U	Ctr	P	Concrete	Cream	0.0	QM
11	001	Pump Room	C	Ceiling			P	Concrete	Cream	0.0	QM
12	001	Pump Room	D	Floor			P	Concrete	Gray	0.0	QM
13	001	Pump Room	A	Fuse box		Lft	I	Steel	Red	0.0	QM
14	001	Pump Room	A	Splice Box		Ctr	I	Steel	Gray	0.0	QM
15	001	Pump Room	A	Transformer box		Rgt	I	Steel	Gray	0.0	QM
16	001	Pump Room	B	Wall Pipe		Lft	P	Steel	Gray	1.8	QM
17	001	Pump Room	B	Pump Body		Lft	P	Steel	Gray	2.3	QM
18	001	Pump Room	B	Pump Motor		Lft	I	Steel	Gray	0.1	QM
19	001	Pump Room	B	Wall Pipe		Ctr	P	Steel	Gray	1.7	QM
20	001	Pump Room	B	Pump Body		Ctr	P	Steel	Gray	3.1	QM
21	001	Pump Room	B	Pump Motor		Ctr	I	Steel	Gray	0.3	QM
22	001	Pump Room	B	Wall Pipe		Rgt	P	Steel	Gray	3.5	QM
23	001	Pump Room	B	Pump Body		Rgt	P	Steel	Gray	1.0	QM
24	001	Pump Room	B	Pump Motor		Rgt	I	Steel	Gray	0.0	QM
25	001	Pump Room	B	Riser pipe		Lft	P	Steel	Gray	4.1	QM
26	001	Pump Room	B	Riser pipe		Ctr	P	Steel	Gray	3.8	QM
27	001	Pump Room	B	Riser pipe		Rgt	P	Steel	Gray	2.5	QM
28	001	Pump Room	C	Ceiling pipe		Ctr	I	Steel	Gray	1.7	QM
29	001	Pump Room	B	Float cylinder		Rgt	I	Steel	Gray	3.2	QM
30	001	Pump Room	D	Switch Box		Rgt	I	Steel	Gray	0.0	QM
31	001	Roof Slab	A	Small vent base		Lft	P	Steel	Gray	0.2	QM
32	001	Roof Slab	D	Pipe Cap		Lft	P	Steel	Gray	0.0	QM
33		CALIBRATION								1.0	TC
34		CALIBRATION								0.9	TC
35		CALIBRATION								0.9	TC
36		CALIBRATION								0.0	TC
37		CALIBRATION								0.0	TC
38		CALIBRATION								0.0	TC
39		CALIBRATION								0.0	TC

---- End of Readings ----

SUMMARY REPORT OF LEAD PAINT INSPECTION FOR: Sound Environmental

Inspection Date: 09/27/17
Report Date: 9/27/2017
Abatement Level: 1.0
Report No. S#01379 - 09/27/17 10:10
Total Readings: 39 Actionable: 11
Job Started: 09/27/17 10:10
Job Finished: 09/27/17 11:27

Pump Station - Dry Well
Calverton Sewage Treatment Plant
4062 Grumman Boulevard (Burman Blvd.), Calverton, N.Y.

Read No.	Wall	Structure	Location	Member	Paint Cond	Substrate	Paint Color	Lead (mg/cm²)	Mode
Interior Room 001 Pump Room									
016	B	Wall Pipe	Lft		P	Steel	Gray	1.8	QM
017	B	Pump Body	Lft		P	Steel	Gray	2.3	QM
025	B	Riser pipe	Lft		P	Steel	Gray	4.1	QM
019	B	Wall Pipe	Ctr		P	Steel	Gray	1.7	QM
020	B	Pump Body	Ctr		P	Steel	Gray	3.1	QM
026	B	Riser pipe	Ctr		P	Steel	Gray	3.8	QM
022	B	Wall Pipe	Rgt		P	Steel	Gray	3.5	QM
023	B	Pump Body	Rgt		P	Steel	Gray	1.0	QM
027	B	Riser pipe	Rgt		P	Steel	Gray	2.5	QM
029	B	Float cylinder	Rgt		I	Steel	Gray	3.2	QM
028	C	Ceiling pipe	Ctr		I	Steel	Gray	1.7	QM

Comment: Stairways on walls C and D are unpainted galvanized steel. All roof hatches are unpainted galvanized steel. Roof vents and fans are unpainted metal.

Calibration Readings

---- End of Readings ----

DETAILED REPORT OF LEAD PAINT INSPECTION FOR: Sound Environmental

Inspection Date: 09/27/17
Report Date: 9/27/2017
Abatement Level: 1.0
Report No. S#01379 - 09/27/17 10:10
Total Readings: 39
Job Started: 09/27/17 10:10
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Pump Station - Dry Well
Calverton Sewage Treatment Plant
4062 Grumman Boulevard (Burman Blvd.), Calverton, N.Y.

Read No.	Wall	Structure	Location	Member	Paint Cond	Substrate	Paint Color	Lead (mg/cm²)	Mode
Exterior Room 001 Roof Slab									
031	A	Small vent base	Lft		P	Steel	Gray	0.2	QM
032	D	Pipe Cap	Lft		P	Steel	Gray	0.0	QM
Comment: Roof vents and fans are unpainted metal. Roof hatches are unpainted galvanized steel.									
Interior Room 001 Pump Room									
007	A	Wall	U Lft		P	Concrete	Cream	0.0	QM
013	A	Fuse box	Lft		I	Steel	Red	0.0	QM
014	A	Splice Box	Ctr		I	Steel	Gray	0.0	QM
015	A	Transformer box	Rgt		I	Steel	Gray	0.0	QM
008	B	Wall	U Ctr		P	Concrete	Cream	0.1	QM
016	B	Wall Pipe	Lft		P	Steel	Gray	1.8	QM
017	B	Pump Body	Lft		P	Steel	Gray	2.3	QM
018	B	Pump Motor	Lft		I	Steel	Gray	0.1	QM
025	B	Riser pipe	Lft		P	Steel	Gray	4.1	QM
019	B	Wall Pipe	Ctr		P	Steel	Gray	1.7	QM
020	B	Pump Body	Ctr		P	Steel	Gray	3.1	QM
021	B	Pump Motor	Ctr		I	Steel	Gray	0.3	QM
026	B	Riser pipe	Ctr		P	Steel	Gray	3.8	QM
022	B	Wall Pipe	Rgt		P	Steel	Gray	3.5	QM
023	B	Pump Body	Rgt		P	Steel	Gray	1.0	QM
024	B	Pump Motor	Rgt		I	Steel	Gray	0.0	QM
027	B	Riser pipe	Rgt		P	Steel	Gray	2.5	QM
029	B	Float cylinder	Rgt		I	Steel	Gray	3.2	QM
009	C	Wall	U Ctr		P	Concrete	Cream	-0.1	QM
011	C	Ceiling			P	Concrete	Cream	0.0	QM
028	C	Ceiling pipe	Ctr		I	Steel	Gray	1.7	QM
010	D	Wall	U Ctr		P	Concrete	Cream	0.0	QM
012	D	Floor			P	Concrete	Gray	0.0	QM
030	D	Switch Box	Rgt		I	Steel	Gray	0.0	QM
Comment: Stairways on walls C and D are unpainted galvanized steel. All roof hatches are unpainted galvanized steel.									
Calibration Readings									
001								1.0	TC
002								1.1	TC
003								1.0	TC
004								0.0	TC
005								0.0	TC
006								0.0	TC
033								1.0	TC
034								0.9	TC
035								0.9	TC
036								0.0	TC
037								0.0	TC
038								0.0	TC
039								0.0	TC

---- End of Readings ----

Appendix C-Certifications

NYC DEP ASBESTOS CONTROL PROGRAM

ASBESTOS CERTIFICATE

VONBRIESEN,
EDWARD F
INVESTIGATOR
114341

EXPIRES: 9/21/2019
DOB:9/21/1948 M 6' 01"

MUST BE CARRIED ON ALL ASBESTOS PROJECTS

01213 0040541 84 90

DMV ID: 962425349

This certificate must be shown to a NYCDEP representative upon request. Report loss immediately to NYCDEP Asbestos Control Program, 8th floor 59-17 Junction Blvd., Flushing, NY 11373

United States Environmental Protection Agency

This is to certify that

Edward Fuller von Briesen

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as:

Risk Assessor

In the Jurisdiction of:

New York

This certification is valid from the date of issuance and expires September 14, 2018

NY-R-5760-6

Certification #

August 31, 2015

Issued On

John Gorman, Chief

Pesticides & Toxic Substances Branch

H2M architects + engineers
538 Broad Hollow Rd, 4th Floor East, Melville, NY 11747
tel 631.756.8000 fax 631.694.4122
www.h2m.com

Town of Riverhead
Calverton Sewer District

Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

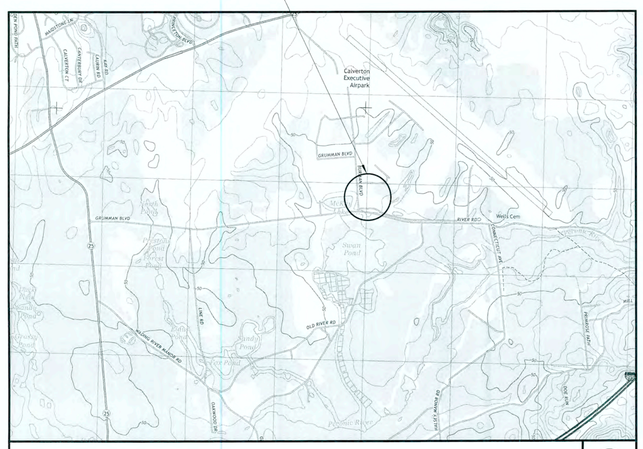
Suffolk County, NY

H2M Project No. CASD 1602

November 2018

CONTRACT G - GENERAL AND MECHANICAL CONSTRUCTION
CONTRACT P - PLUMBING CONSTRUCTION
CONTRACT E - ELECTRICAL CONSTRUCTION
CONTRACT S - FORCE MAIN/RECHARGE BED CONSTRUCTION

PROJECT LOCATION



PROJECT LOCATION MAP

TOWN SUPERVISOR
HON. LAURA JENS-SMITH

TOWN COUNCIL
CATHERINE KENT
JODI GIGLIO
TIMOTHY HUBBARD
JAMES WOOTEN

ATTORNEY
ROBERT KOZAKIEWICZ, ESQ.

SEWER DISTRICT SUPERINTENDENT
MICHAEL P. REICHEL

ALL CONTRACTS SHEET LIST

SHEET COUNT	SHEET NUMBER	SHEET NAME
1	G0.0	COVER SHEET
2	G1.0	PROJECT SHEET LIST AND GENERAL NOTES
3	G2.0	NEW YORK STATE CODE ANALYSIS, LINTEL SCHEDULE AND PARTITION TYPES
4	PD0.0	PROCESS AND INSTRUMENTATION DIAGRAM LEGEND
5	PD1.0	PROCESS AND INSTRUMENTATION DIAGRAM
6	HP1.0	HYDRAULIC PROFILE AND MASS BALANCE DIAGRAM
7	D1.0	WET WELL DEMOLITION VIEWS
8	D2.0	AERATION TANKS DEMOLITION VIEWS AND DETAILS
9	D2.1	SETTLING AND SLUDGE HOLDING TANK DEMOLITION VIEWS
10	D2.2	SETTLING AND SLUDGE HOLDING TANK DEMOLITION DETAILS
11	D3.0	CONTROL BUILDING DEMOLITION VIEWS
12	C1.0	EXISTING SITE CONDITIONS
13	C1.1	SITE REMOVALS PLAN
14	C2.0	SITE IMPROVEMENTS PLAN
15	C2.1	STAGING, INTERIM OPERATIONS, AND PHASING SITE PLAN
16	C2.2	YARD PIPING PLAN

CONTRACT E SHEET LIST

SHEET COUNT	SHEET NUMBER	SHEET NAME
17	E0.0	ELECTRICAL LEGENDS
18	E1.0	ELECTRICAL DEMOLITION PLAN
19	E2.0	ELECTRICAL SITE PLAN
20	E3.0	INFLUENT PUMP STATION ELECTRICAL POWER PLAN
21	E3.1	INFLUENT PUMP STATION SCREENING ASSEMBLY POWER AND CONTROL PLAN
22	E4.0	PROCESS TANK ELECTRICAL POWER PLAN
23	E4.1	PROCESS TANK ELECTRICAL CONTROL PLAN
24	E5.0	CONTROL BUILDING ELECTRICAL POWER PLAN
25	E5.1	CONTROL BUILDING ELECTRICAL CONTROL PLAN
26	E5.2	CONTROL BUILDING ELECTRICAL LIGHTING PLAN
27	E5.3	CONTROL BUILDING ELECTRICAL ELECTRICAL HVAC PLAN
28	E6.0	ELECTRICAL SINGLE LINE DIAGRAM
29	E7.0	MCC ELEVATION
30	E7.1	OUTDOOR SWITCHBOARD ELEVATIONS
31	E8.0	GENERATOR PLAN AND ELEVATIONS
32	E8.1	GENERATOR DETAILS
33	E9.0	ELECTRICAL DETAILS 1
34	E9.1	ELECTRICAL DETAILS 2
35	E10.0	ELECTRICAL SCHEDULES

H2M architects + engineers
538 Broad Hollow Road, 4th Floor East
Melville, NY 11747
631.756.8000 • www.h2m.com

STATE OF NEW YORK
JEFFREY L. CZAJKA
No. 073522-1
LICENSED PROFESSIONAL ENGINEER

DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
TMN	TMN		JLC
PROJECT No:	DATE:	SCALE:	
CASD 1602	November 2018	AS SHOWN	

CLIENT
Town of Riverhead Calverton Sewer District
Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)
Suffolk County, NY

STATUS
FINAL BID DOCUMENT

DRAWING No.
G0.0

SHEET No.
1 OF 35

C:\Users\acicavas\Documents\CASD1602_Central17_MEP_acicavas.rvt
11/14/2018 10:41:55 AM

ALL CONTRACTS SHEET LIST

SHEET COUNT	SHEET NUMBER	SHEET NAME
1	G0.0	COVER SHEET
2	G1.0	PROJECT SHEET LIST AND GENERAL NOTES
3	G2.0	NEW YORK STATE CODE ANALYSIS, LINTEL SCHEDULE AND PARTITION TYPES
4	PD0.0	PROCESS AND INSTRUMENTATION DIAGRAM LEGEND
5	PD1.0	PROCESS AND INSTRUMENTATION DIAGRAM
6	HP1.0	HYDRAULIC PROFILE AND MASS BALANCE DIAGRAM
7	D1.0	WET WELL DEMOLITION VIEWS
8	D2.0	AERATION TANKS DEMOLITION VIEWS AND DETAILS
9	D2.1	SETTLING AND SLUDGE HOLDING TANK DEMOLITION VIEWS
10	D2.2	SETTLING AND SLUDGE HOLDING TANK DEMOLITION DETAILS
11	D3.0	CONTROL BUILDING DEMOLITION VIEWS
12	C1.0	EXISTING SITE CONDITIONS
13	C1.1	SITE REMOVALS PLAN
14	C2.0	SITE IMPROVEMENTS PLAN
15	C2.1	STAGING, INTERIM OPERATIONS, AND PHASING SITE PLAN
16	C2.2	YARD PIPING PLAN

CONTRACT G SHEET LIST

SHEET COUNT	SHEET NUMBER	SHEET NAME
17	C3.0	SITE DETAILS
18	C3.1	SITE PIPING DETAILS
19	S1.0	VALVE VAULT, EFFLUENT FLOW METER AND INFLUENT PUMP STATION PLANS
20	S2.0	PROCESS TANK OVERVIEW-TOP SLAB
21	S2.1	CANOPY AND STAIR PLAN
22	S2.2	PRE-EQUALIZATION AND EFFLUENT PUMP STATION PLAN
23	S2.3	MBR ANOXIC AND SLUDGE HOLDING TANK PLAN
24	S2.4	AUTOMATIC FINE SCREEN CHANNEL PLAN AND SECTION
25	S3.0	STRUCTURAL DETAILS
26	S3.1	STRUCTURAL DETAILS-2
27	A1.0	PROCESS TANKS AND INFLUENT PUMP STATION FLOOR PLANS
28	A2.0	CONTROL BUILDING PARTIAL FIRST FLOOR PLAN
29	A3.0	CONTROL BUILDING ROOF PLAN, DEMOLITION, ABATEMENT AND GENERAL NOTES
30	A3.1	TYPICAL ROOF DETAILS
31	A4.0	CONTROL BUILDING DOOR SCHEDULE, ELEVATIONS AND DETAILS, AND INTERIOR FINISH SCHEDULE
32	A4.1	PROCESS TANKS GUARDRAIL DETAILS
33	M0.0	GENERAL MECHANICAL INFORMATION
34	M1.0	AUTOMATIC FINE SCREEN PLAN AND SECTION
35	M2.0	INFLUENT PUMP STATION MECHANICAL PLAN VIEWS
36	M2.1	INFLUENT PUMP STATION SECTION VIEWS
37	M3.0	PROCESS TANKAGE MECHANICAL PLAN - ABOVE TOP SLAB
38	M3.1	PROCESS TANKAGE MECHANICAL PLAN - BELOW TOP SLAB
39	M3.2	PROCESS TANKAGE MECHANICAL SECTION VIEWS AND DETAILS
40	M3.3	PROCESS TANKAGE MECHANICAL SECTION VIEWS
41	M3.4	PROCESS TANKAGE MECHANICAL SECTION VIEWS
42	M4.0	CONTROL BUILDING MECHANICAL EQUIPMENT PLAN
43	M5.0	MECHANICAL DETAILS
44	M5.1	MECHANICAL DETAILS
45	H0.0	HVAC LEGENDS, SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES
46	H1.0	INFLUENT PUMP STATION AND PIPING VAULTS HVAC PLANS
47	H2.0	CONTROL BUILDING HVAC PLAN
48	H3.0	HVAC SCHEDULES
49	H4.0	HVAC DETAILS

SYMBOLS LEGEND

℄	CENTERLINE
1 / G1.0	DETAIL
	DEMOLITION HATCH (TO BE REMOVED)
1 SCALE Drawing Title	DRAWING
Level Name	ELEVATION
N	NORTH
TO PROCESS	PIPE
1	REVISION KEY
1 / G1.0	SECTION CUT

GENERAL CONSTRUCTION AND PROJECT NOTES:

1. INSPECT THE CONSTRUCTION SITE PRIOR TO SUBMISSION OF BIDS AND SHALL MAKE NO ADDITIONAL CLAIMS REGARDING SITE CONDITIONS THEREAFTER.
2. NOTIFY THE OWNER AT LEAST 24 HOURS PRIOR TO THE COMMENCEMENT OF THE WORK. THE SAME NOTICE SHALL BE REQUIRED WHEN RESUMING WORK AFTER ANY STOPPAGE OR DELAY.
3. LOCATION OF ALL UNDERGROUND UTILITIES, ELECTRIC AND TELEPHONE CONDUITS, STORM DRAINS AND UNDERGROUND PIPING WERE OBTAINED FROM EITHER OLD MAPS, SURVEYS, DRAWINGS AND RECORDS SUPPLIED BY OTHERS. THE OWNER AND ENGINEER DO NOT GUARANTEE OR ACCEPT RESPONSIBILITY FOR ANY DAMAGE TO SUCH FACILITIES DUE TO DISCREPANCIES IN LOCATION AND SIZE SHOWN ON THE PLANS, NOR WILL ANY COMPENSATION BE MADE TO THE CONTRACTOR FOR ANY INCONVENIENCES CAUSED TO HIM BY ENCOUNTERING THE AFOREMENTIONED UTILITIES WHICH ARE NOT SHOWN, OR ARE INCORRECTLY SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATIONS OF ANY UNDERGROUND UTILITIES, GAS MAINS, ELECTRIC AND TELEPHONE CONDUITS.
4. PERFORM DAILY CLEAN-UP OPERATIONS WHICH INCLUDE REMOVAL OF DEBRIS AND EXCESS CONSTRUCTION MATERIAL TO THE SATISFACTION OF THE OWNER AND THE ENGINEER.
5. DURING ALL NON-WORKING HOURS, STORE ALL EQUIPMENT AND MATERIALS WITHIN THE DESIGNATED AREAS AT THE PROJECT SITE.
6. ALL DIMENSIONS SHOWN ARE APPROXIMATE AND SUBJECT TO THE APPROVAL OF THE OWNER AND THE ENGINEER.
7. CONFORM TO ALL APPLICABLE STATE AND LOCAL CODE REQUIREMENTS, THE CONTRACT, AND SUBJECT TO THE APPROVAL OF THE OWNER AND THE ENGINEER.
8. SECURE CONSTRUCTION SITE IN ACCORDANCE WITH ALL APPLICABLE SAFETY STANDARDS AND SUBJECT TO THE APPROVAL OF THE OWNER AND THE ENGINEER.
9. COORDINATE ACTIVITIES WITH THE OWNER SO AS TO MINIMIZE INTERRUPTION TO THE TREATMENT FACILITY.
10. ALL ELEVATIONS ARE BASED ON USGS, UNLESS OTHERWISE INDICATED.
11. PROTECT AND MAINTAIN ALL BENCHMARKS AND MONUMENTS. RESTORE ALL BENCHMARKS OR MONUMENTS DISTURBED BY THE CONTRACTOR'S WORK.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LAYOUT, SURVEY, ETC. AS REQUIRED TO COMPLETE THE WORK.
13. THE DRAWING AND SPECIFICATIONS ARE COMPLEMENTARY. THE PROJECT SPECIFICATIONS, SEPARATELY BOUND, CONTAIN THE CONDITIONS OF THE CONTRACT, PROCEDURES AND TECHNICAL SPECIFICATIONS.
14. ALL CONTRACTORS ARE TO VISIT THE SITE AND BECOME FAMILIAR WITH THE CONDITIONS OF THE SITE AND DIFFICULTIES ATTENDING THE WORK.
15. DO NOT SCALE MEASURE ANY DRAWING. VERIFY THE FIGURES, DIMENSIONS AND DESIGN INTENTION SHOWN ON THE DRAWINGS BEFORE BEGINNING LAYOUT OF THE WORK.
16. REPORT ANY ERRORS, INACCURACIES, MISSING DIMENSIONAL REQUIREMENTS OR CONFLICTS TO THE ARCHITECT/ENGINEER IN WRITING BEFORE BEGINNING ANY WORK.
17. VERIFY EXACT LAYOUT CAPABILITY WITH ALL EXISTING CONDITIONS AND COORDINATE ALL WORK TO BE UNDERTAKEN PRIOR TO BEGINNING ANY WORK. NOTIFY THE ARCHITECT/ENGINEER IN WRITING BEFORE BEGINNING WORK IF ANY DISCREPANCIES ARE FOUND WITH CONDITIONS ENCOUNTERED, AS WELL AS ITEMS COVERED IN 8 AND 9. CONTRACTOR WILL BE RESPONSIBLE FOR ALL TEMPORARY MEASURES, TIME LOST, CHANGES TO THE WORK SCOPE WITHOUT ANY ADDITIONAL COMPENSATION IF CONTRACTOR FAILS TO PROVIDE AFOREMENTIONED VERIFICATIONS AND COORDINATION PRIOR TO COMMENCING WORK.
18. DISTURB ONLY THOSE AREAS OF THE SITE AFFECTED BY NEW CONSTRUCTION, UNLESS NOTED OTHERWISE. PROTECT ALL OTHER AREAS. COMPLETELY RESTORE ALL AREAS DISTURBED DURING CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO GRASS AREA, LANDSCAPING, PAVEMENTS, SIDEWALKS, CURBING AND IN-GROUND SPRINKLER SYSTEMS.
19. PROTECT ADJOINING PROPERTIES WHEN CONDUCTING WORK.
20. ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES, LAWS, AGENCIES HAVING JURISDICTION, AND STATUS AS REQUIRED.
21. STRICTLY ADHERE TO MANUFACTURER'S PRINTED INSTRUCTION.
22. VERIFY ALL CHANGES TO WORK IN WRITING WITH THE ARCHITECT/ENGINEER AND OWNER BEFORE BEGINNING RELATED WORK.
23. PROVIDE POSITIVE DRAINAGE AWAY FORM THE BUILDING PERIMETER, PITCH 1/4" PER FOOT. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES WITH THIS REQUIREMENT BEFORE PROCEEDING.
24. IF APPLICABLE, ALL CONTRACTS MUST REVIEW ALL DRAWINGS CONTAINED IN THE SET (INCLUDING ALL IN G, C, S, A, M, H, P, AND E DRAWINGS) SO AS TO BECOME FAMILIAR WITH THE WORK REQUIRED UNDER THEIR SCOPE AND THE WORK OF ALL OTHER CONTRACTORS. ADDITIONALLY, ALL CONTRACTORS ARE RESPONSIBLE FOR THE COORDINATION OF THEIR WORK WITH ALL OTHER TRADES AND CONTRACTORS.
25. DIMENSIONS NOTED AS "EQUAL" OR "EQ" WITHIN A ROOM REFER TO A DISTANCE RELATIONSHIP CONTAINED ONLY IN THAT ROOM AT AN OPPOSING OR PARALLEL WALL UNLESS NOTED OTHERWISE.
26. VERIFY AND ADJUST APPROXIMATE DIMENSIONS (+/-) IN THE FIELD. VERIFY WITH ARCHITECT/ENGINEER PRIOR TO CONSTRUCTION.
27. LOCATE ALL PENETRATIONS REQUIRED TO ACCOMMODATE ALL WORK DETAILED OR SPECIFIED FOR THEIR SCOPE, AND COORDINATE THIS WORK WITH OTHERS.
28. MAINTAIN WATER-TIGHT WEATHER PROTECTION THROUGHOUT ALL WORK AREA AND EXISTING AREAS IMMEDIATELY ADJACENT TO THOSE WORK AREAS, FOR THE DURATION OF THE ENTIRE PROJECT..
29. PROTECT ALL ADJACENT EXISTING CONSTRUCTION, ITEMS, FINISHES, ETC. AND SHALL PATCH, REPAIR AND/OR REPLACE, AND REFINISH AS REQUIRED TO RESTORE ANY AND ALL AREAS DAMAGED DURING CONSTRUCTION.
30. PROVIDE, AND COORDINATE THE INSTALLATION OF, ALL ACCESS PANELS THAT ARE NEEDED TO ACCESS OR SERVICE FOR ALL ITEMS INSTALLED AS PART OF THEIR SCOPE OF WORK.
31. PROVIDE TEMPORARY FENCING TO PROTECT ALL WORK AREAS.
32. MINIMIZE REMOVAL OF EXISTING TREES. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE LAYOUT, TAGGING AND REMOVAL OF TREES REQUIRED TO COMPLETE ALL WORK. OWNER SHALL APPROVE TREES TO BE REMOVED PRIOR TO ACTUAL REMOVALS. REMOVALS SHALL INCLUDE REMOVAL OF COMPLETE STUMP AND ROOT SYSTEM. CONTRACTOR SHALL NOT BE PERMITTED TO GRIND STUMPS.
33. CONCRETE SIDEWALKS SHALL BE SAWCUT BACK TO EXPANSION/CONTROL JOINTS.

H2M architects + engineers
538 Broad Hollow Road, 4th Floor
East
Melville, NY 11747

CONSULTANTS:

MARK	DATE	DESCRIPTION

STATE OF NEW YORK — CHRISTOPHER T. REESE — LICENSED PROFESSIONAL ENGINEER — No. 072204

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CLIENT

Town of Riverhead Calverton Sewer District

Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

TOWN OF RIVERHEAD — PAX ET PROSPERITAS PER PROGRESSUM — 1792

CONTRACT

ALL CONTRACTS

STATUS

FINAL BID DOCUMENT

SHEET TITLE

PROJECT SHEET LIST AND GENERAL NOTES

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SHEET # 2 OF 35

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BUILDING CODE OF NEW YORK STATE

(NYS CODE CHAPTER 5)

	ALLOWED	EXISTING
BUILDING OCCUPANCY	U AND B	U AND B
CONSTRUCTION CLASSIFICATION	TYPE II B	TYPE II B
HEIGHT (STORIES)	2 STORIES	1 STORY
HEIGHT (FEET)	55'-0"	12'-8"
FIRE AREA	16,000 S.F.	1,667 S.F.

NOTES

1. AS PER NYS BUILDING CODE SECTION 508 AS PER NYS 2015 INTERNATIONAL BUILDING CODE. THIS PROJECT SHALL CONSIST OF NON-SEPARATED USES (508.3.1) AND THE MOST RESTRICTIVE, U (UTILITY) OCCUPANCY SHALL APPLY WHEN CALCULATING PERMITTED FIRE AREAS AND BUILDING HEIGHTS
2. AS PER NYS 2015 INTERNATION EXISTING BUILDING CODE. THIS PROJECT SHALL CONSIST OF A LEVEL 3 ALTERATION WERE 1,034 S.F. OF 1,666 S.F. WILL BE RENOVATED OR ALTERED.

FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS

(NYS CODE TABLE 601)

BUILDING OCCUPANCY CLASSIFICATION: UTILITY GROUP U AND BUSINESS GROUP B
CONSTRUCTION CLASSIFICATION: TYPE II B

BUILDING ELEMENT	HOURS
STRUCTURAL FRAME	0
EXTERIOR BEARING WALLS	0
EXTERIOR NON-BEARING WALLS	0
INTERIOR BEARING WALLS	0
NON-BEARING WALLS	0
FLOOR CONSTRUCTION	0
ROOF CONSTRUCTION	0

1. AS PER NYS BUILDING CODE, TABLE 601, AND AS INDICATED ON PLANS.
2. SEE DWG. A0.0 FOR CONSTRUCTION/PARTITION TYPES.

MINIMUM NUMBER OF EXITS PER OCCUPIED LOAD

(NYS CODE TABLE (1006.2.1)

FLOOR AREA	OCCUPANT LOAD	MINIMUM REQ'D # OF EXITS	# OF EXITS PROVIDED
FIRST FLOOR	16	1	4

PER NYS CODE TABLE 1006.2.1
1. MAXIMUM OCCUPANCY ALLOWED FOR SPACES WITH ONE EXIT OR EXIT ACCESS = 49 PEOPLE
2. TRAVEL DISTANCE FOR A NON-SPRINKLERED AND LESS THAN 30 OCCUPANT BUILDING = 100'-0"
3. EXIT ACCESS SIZING REQUIREMENTS 16PP X 0.2"/PP = 3.2" OR 32" MIN.

ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE

EXTERIOR DESIGN CONDITIONS PER TABLE C301.1

COUNTY: SUFFOLK COUNTY, TOWN OF RIVERHEAD

HEATING DEGREE DAYS: CDD50°F < 4500 AND HDD65°F > 5400

ZONE: CLIMATE ZONE 4A - MIXED-HUMID

BUILDING ENVELOPE REQUIREMENTS PER TABLE 802.2(2), ECCCNYS

	REQUIRED	PROPOSED
SLAB OR BELOW BELOW GRADE WALL	N/A	N/A
WINDOWS AND GLASS DOORS	N/A	N/A
ROOF ASSEBLY	R-30 CI	R-30 CI
ABOVE GRADE WALL (CMU 8" THICK) EXISTING	N/A	N/A

CI = CONTINUOUS INSULATION

GENERAL NOTES

1. ALL INTERIOR WALL AND CEILING FINISHES MUST MEET OR EXCEED THE REQUIREMENTS STATED IN TABLE 803.11
2. ALL GLAZING IN DOORS, FIXED SIDE PANELS ADJOINING DOORS, INTERIOR PARTITIONS WHERE GLAZING EXTENDS TO WITHIN 1'-6" OF FINISHED FLOOR AND GLASS PANELS GREATER THAN 50 SQ. FT. TO BE FULLY TEMPERED SAFETY GLASS PER NYS CODE CHAPTER 24.
3. THE MINIMUM CORRIDOR WIDTH SHALL NOT BE LESS THAN 44", PER 1016.2.
4. MAXIMUM ALLOWABLE TRAVEL DISTANCE SHALL NOT EXCEED 100'-0" FOR OCCUPANCY TYPE "U", 100'-0" FOR OCCUPANCY TYPE "B", IN ACCORDANCE WITH NYS BUILDING CODE SECTION 1006, TABLE 1006.2.1 (NON-SPRINKLERED). (NON-SEPARATED MIXED USE BUILDING, THEREFORE 100'-0" GOVERNS, AS MOST RESTRICTIVE.)

LEGEND

OCCUPANCY — STORAGE — 1 PERSON — # OF PERSONS
AREA (SF) — 150 SF — 200 SF / PERSON — SQUARE FOOT/PERSON

101	EXIT DOOR
101	EXIT ACCESS DOOR
	1 HOUR FIRE RATED WALL WITH 3/4 HOUR RATED DOORS

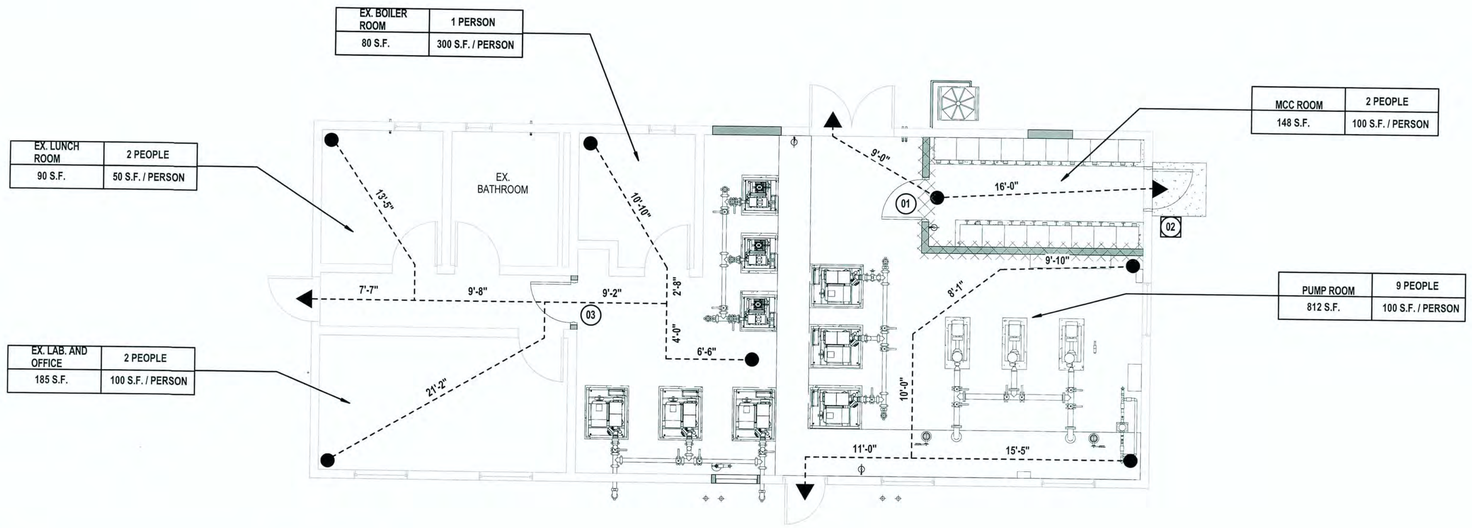
EX. BOILER ROOM	1 PERSON
80 S.F.	300 S.F. / PERSON

EX. LUNCH ROOM	2 PEOPLE
90 S.F.	50 S.F. / PERSON

EX. LAB. AND OFFICE	2 PEOPLE
185 S.F.	100 S.F. / PERSON

MCC ROOM	2 PEOPLE
148 S.F.	100 S.F. / PERSON

PUMP ROOM	9 PEOPLE
812 S.F.	100 S.F. / PERSON



1 Control Building Egress Plan
SCALE: 3/16" = 1'-0"

LINTEL SCHEDULE

MARK	SIZE	DETAILS	COMMENTS
LL-1	(2) L4 x 3-1/2x 5/16" (LLV)		NOTES 1-5
ML-1	MASONRY LINTEL	6" NOM. · 1" CLR. TYP. · (2) CON. # 5 BARS · M.O. SEE A**	

NOTES:

1. LINTEL LENGTH SHALL BE M.O. + 1'-4" TO PROVIDE MIN. BEARING OF 8" ONTO SOLID MASONRY ON EACH SIDE.
2. ALL EXTERIOR LINTELS TO BE SHOP APPLIED HOT DIPPED GALVANIZED.
3. WELD VERTICAL REINFORCEMENT INTERRUPTED BY MASONRY OPENINGS TO TOP OF THE STEEL LINTELS, TYPICAL.
4. REFER TO ARCHITECTURAL FLOOR PLANS FOR LINTEL LOCATIONS.
5. VERTICAL LEGS OF DOUBLE ANGLES SHALL BE WELDED TOGETHER.

PARTITION TYPES

SYMBOL	CONSTRUCTION DESCRIPTION
	CONCRETE MASONRY UNIT, PAINT TO MATCH EXISTING WALLS - EACH SIDE; 5 3/4" / 6" NOM.; HORIZONTAL LADDER REINFORCEMENT EVERY TWO (2) COURSES; PAINT SURFACE TO MATCH EXISTING WALLS 1 — 6" CONCRETE MASONRY WALL NOTE: CONTRACTOR IS RESPONSIBLE TO SHIM AS REQUIRED FOR A LEVEL AND PLUMB INSTALLATION
	CONCRETE MASONRY UNIT, PAINT TO MATCH EXISTING WALLS - EACH SIDE; 7 3/4" / 8" NOM.; HORIZONTAL LADDER REINFORCEMENT EVERY TWO (2) COURSES; PAINT SURFACE TO MATCH EXISTING WALLS 2 — 8" CONCRETE MASONRY WALL NOTE: CONTRACTOR IS RESPONSIBLE TO SHIM AS REQUIRED FOR A LEVEL AND PLUMB INSTALLATION

H2M architects + engineers
538 Broad Hollow Road, 4th Floor East
Melville, NY 11747
631.756.8000 www.h2m.com

CONSULTANTS:

MARK	DATE	DESCRIPTION

REGISTERED ARCHITECT — ERIC W. MAISCH — 033031 — STATE OF NEW YORK

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Town of Riverhead Calverton Sewer District

Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

CONTRACT
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NEW YORK STATE CODE ANALYSIS, LINTEL SCHEDULE AND PARTITION TYPES

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SHEET # 3 OF 35

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VALVES AND PIPE ACCESSORIES

- AR — AIR RELIEF VALVE
- A — ANTI-SIPHON VALVE
- A — AUTOMATIC AIR VENT
- BV-1 — BALL VALVE
- BV-1 NC — BALL VALVE (NORMALLY CLOSED)
- BPV — BACK PRESSURE VALVE
- BF-1 — BUTTERFLY VALVE
- BF-1 NC — BUTTERFLY VALVE (NORMALLY CLOSED)
- CHECK VALVE
- LS — CHECK VALVE W/ LIMIT SWITCH
- DIAPHRAGM VALVE
- DIAPHRAGM VALVE W/ LIMIT SWITCH
- LS — DOUBLE CHECK VALVE
- FLEXIBLE PIPE CONNECTION
- GV-1 — GATE VALVE
- GV-1 NC — GATE VALVE (NORMALLY CLOSED)
- MBV-1 — MOTORIZED BALL VALVE
- MBV-1 NC — MOTORIZED BALL VALVE (NORMALLY CLOSED)
- MBF-1 — MOTORIZED BUTTERFLY VALVE
- MBF-1 NC — MOTORIZED BUTTERFLY VALVE (NORMALLY CLOSED)
- MPV-1 — MOTORIZED PLUG VALVE
- MPV-1 NC — MOTORIZED PLUG VALVE (NORMALLY CLOSED)
- PV-1 — PLUG VALVE
- PV-1 — PLUG VALVE (NORMALLY CLOSED)
- PRESSURE REDUCING VALVE
- PRESSURE RELIEF VALVE
- LS — PRESSURE RELIEF VALVE W/ LIMIT SWITCH
- RPZ DEVICE
- SG-1 — SLIDE GATE
- SG-1 NC — SLIDE GATE (NORMALLY CLOSED)
- SV-1 N — SOLENOID VALVE (NORMALLY OPEN)
- SV-1 NC — SOLENOID VALVE (NORMALLY CLOSED)
- WYE STRAINER
- CHEMICAL INJECTION POINT
- D — DIELECTRIC UNION
- PG — PRESSURE GAUGE AND COCK
- SP-1 — SAMPLE POINT
- SIGHT GLASS
- STATIC MIXER
- AR — PRESSURE GAUGE AND COCK

PROCESS CONTROL SYMBOLS

- CL — CHLORINE ANALYZER
- S/m — CONDUCTIVITY ANALYZER
- DPG — DIFFERENTIAL PRESSURE GAUGE
- DPS — DIFFERENTIAL PRESSURE SWITCH
- DPT — DIFFERENTIAL PRESSURE TRANSMITTER
- DO — DISSOLVED OXYGEN SENSOR
- FL — FLOAT SWITCH
- FS — FLOW SWITCH
- FT — FLOW TRANSMITTER
- FL — FLUORIDE ANALYZER
- H2O — HYDROGEN PEROXIDE ANALYZER
- HFL — HIGH LEVEL FLOAT SWITCH
- HTT — HUMIDITY AND TEMPERATURE TRANSMITTER
- LE — LEVEL SWITCH
- LT — LEVEL TRANSMITTER
- LFL — LOW LEVEL FLOAT SWITCH
- LS — LIMIT SWITCH
- NO3 — NITRATE ANALYZER
- pH — pH ANALYZER
- PO4 — PHOSPHATE ANALYZER
- PS — PRESSURE SWITCH
- PT — PRESSURE TRANSDUCER
- TS — TEMPERATURE SWITCH
- TSS — TOTAL SUSPENDED SOLIDS ANALYZER
- NTU — TURBIDITY ANALYZER
- VOC — VOC ANALYZER

FLOW CONTROL

- MA — ELECTROMAGNETIC FLOW METER
- ORIFICE PLATE
- TURBINE FLOW METER
- VENTURI FLOW METER

LARGE PIPING FITTINGS

- BLIND FLANGE
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- EXISTING/NEW PIPE CONNECTION
- FLANGED CONNECTING PIPE JOINT
- FLEXIBLE CONNECTION
- PIPE PLUG
- PIPE CAP
- QUICK CONNECTION COUPLING
- VENT

MECHANICAL EQUIPMENT

- 55 GALLON DRUM
- C-1 — AIR COMPRESSOR
- AIR DIFFUSER(S)
- AIR FILTER
- RDS-1 — ROTATING DRUM SCREN
- B-1 — BLOWER, FIXED SPEED
- B-1 V — BLOWER, VARIABLE SPEED
- P-1 — CENTRIFUGAL PUMP, FIXED SPEED
- P-1 V — CENTRIFUGAL PUMP, VARIABLE SPEED
- P-1 CL2 — CHEMICAL METERING PUMP
- COMBINATION SHOWER/EYEWASH
- P-1 — DECANT PUMP
- HORIZONTAL CHEMICAL BULK STORAGE TANK
- MEMBRANE FILTER
- P-1 — PROGRESSIVE CAVITY PUMP, FIXED
- P-1 V — PROGRESSIVE CAVITY PUMP, VARIABLE
- BAFFLE WALL
- STRUCTURE
- STRUCTURE NAME
- A-1 — SUBMERSIBLE AERATOR
- MX-1 — SUBMERSIBLE MIXER
- P-1 — DRY PIT SUBMERSIBLE PUMP, FIXED SPEED
- P-1 V — DRY PIT SUBMERSIBLE PUMP, VARIABLE SPEED
- VERTICAL CHEMICAL BULK STORAGE TANK
- WATER HEATER (ELECTRIC)

PROCESS AREA ABBREVIATIONS

AR	ANOXIC REACTOR
FS	FINE SCREENING
GS	GRAVITY SEWER
MBR	MEMBRANE BIOLOGICAL REACTOR
PREQ	PRE-EQUALIZATION
PS	PUMP STATION
PL	PLANT
SB	SPLITTER BOX
SHT	SLUDGE HOLDING TANK
PW	POTABLE WATER

SERVICE ABBREVIATIONS

A	AIR
DA	DIFFUSER AIR
EFF	EFFLUENT
HE	HYDRAULIC EQUALIZATION
INF	INFLUENT
RT	RETURN
SA	SCOUR AIR
SUPA	SUPPLY AIR

PROCESS DIAGRAM ANNOTATION SYMBOLS

- SERVICE / PROCESS / NOMINAL PIPE — 6"Ø-PS-INF — FLOW DIRECTION (PIPE)
- SERVICE / PROCESS / CHANNEL / CHANNEL / CHANNEL — 36"x36"x36"-PRE-INF — FLOW DIRECTION (CHANNEL)
- SERVICE / PROCESS / NOMINAL PIPE — 6"Ø-PREQ-A — FLOW DIRECTION (AIR PIPING)
- SERVICE / PROCESS / NOMINAL PIPE — 6"Ø-SHT-INF — FLOW DIRECTION (SLUDGE)
- SERVICE / PROCESS — CS-EFF — FLOW DIRECTION (CONVEYOR)
- MATCH LINE
- (A) PD0.0 — TIE-IN (CONTINUED ELSEWHERE ON OTHER SHEET)
- A — TIE-IN (CONTINUED ELSEWHERE ON SAME SHEET)
- UNCONNECTED PROCESS LINE

H2M architects + engineers
538 Broad Hollow Road, 4th Floor
East
Melville, NY 11747

CONSULTANTS:

MARK	DATE	DESCRIPTION

STATE OF NEW YORK — CHRISTOPHER T. REISERT — No. 072204 — LICENSED PROFESSIONAL ENGINEER

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Town of Riverhead Calverton Sewer District

Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

CONTRACT

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PROCESS AND INSTRUMENTATION DIAGRAM LEGEND

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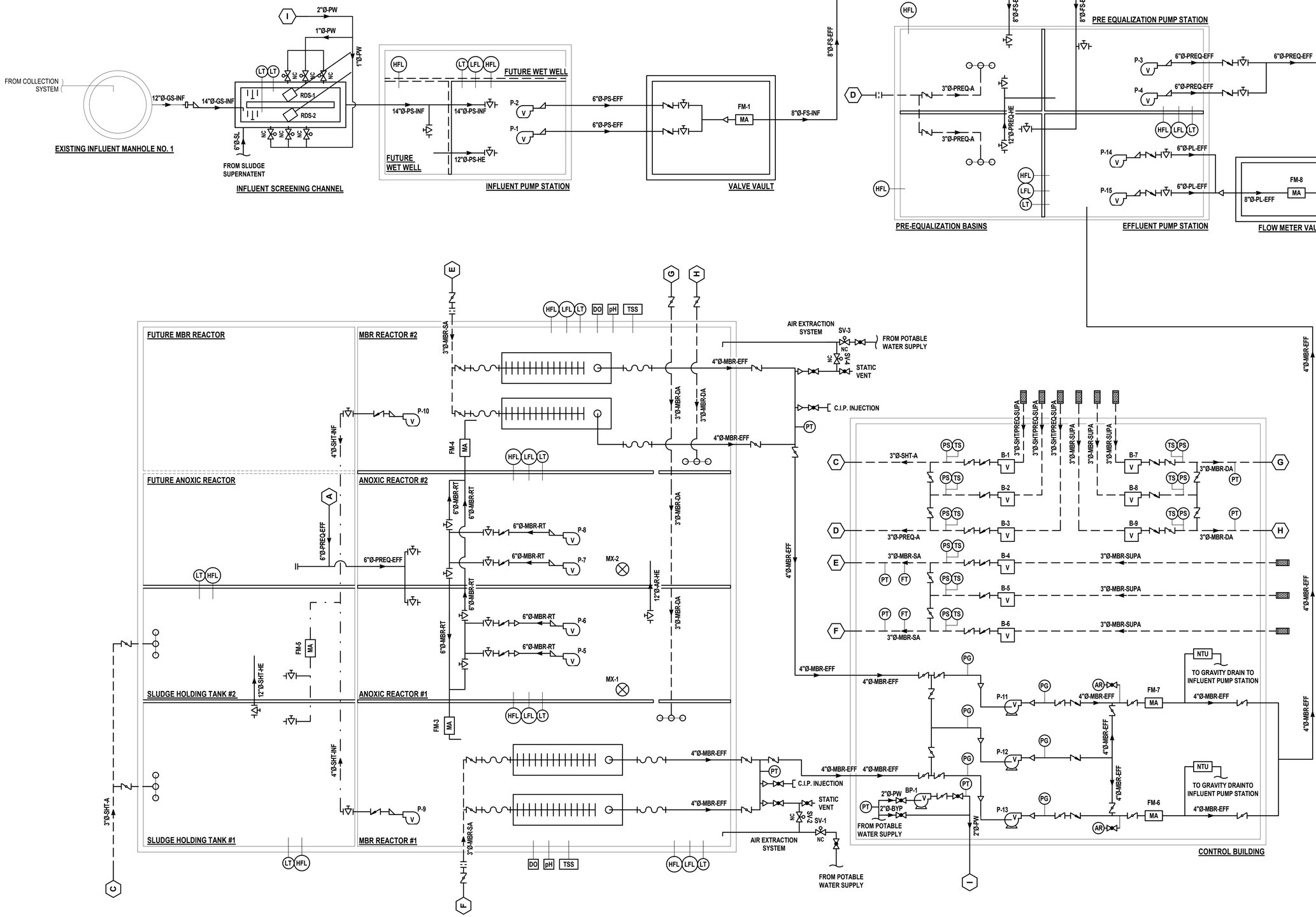

H2M architects + engineers
538 Broad Hollow Road, 4th Floor
East
Melville, NY 11747

CONSULTANTS:

MARK	DATE	DESCRIPTION

STATE OF NEW YORK — CHRISTOPHER T. HESS — No. 072204 — LICENSED PROFESSIONAL ENGINEER

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Town of Riverhead Calverton Sewer District

Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

TOWN OF RIVERHEAD — 1792 — PAST PROSPERITAS PER PROGRESSUM

CONTRACT

ALL CONTRACTS

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PROCESS AND INSTRUMENTATION DIAGRAM

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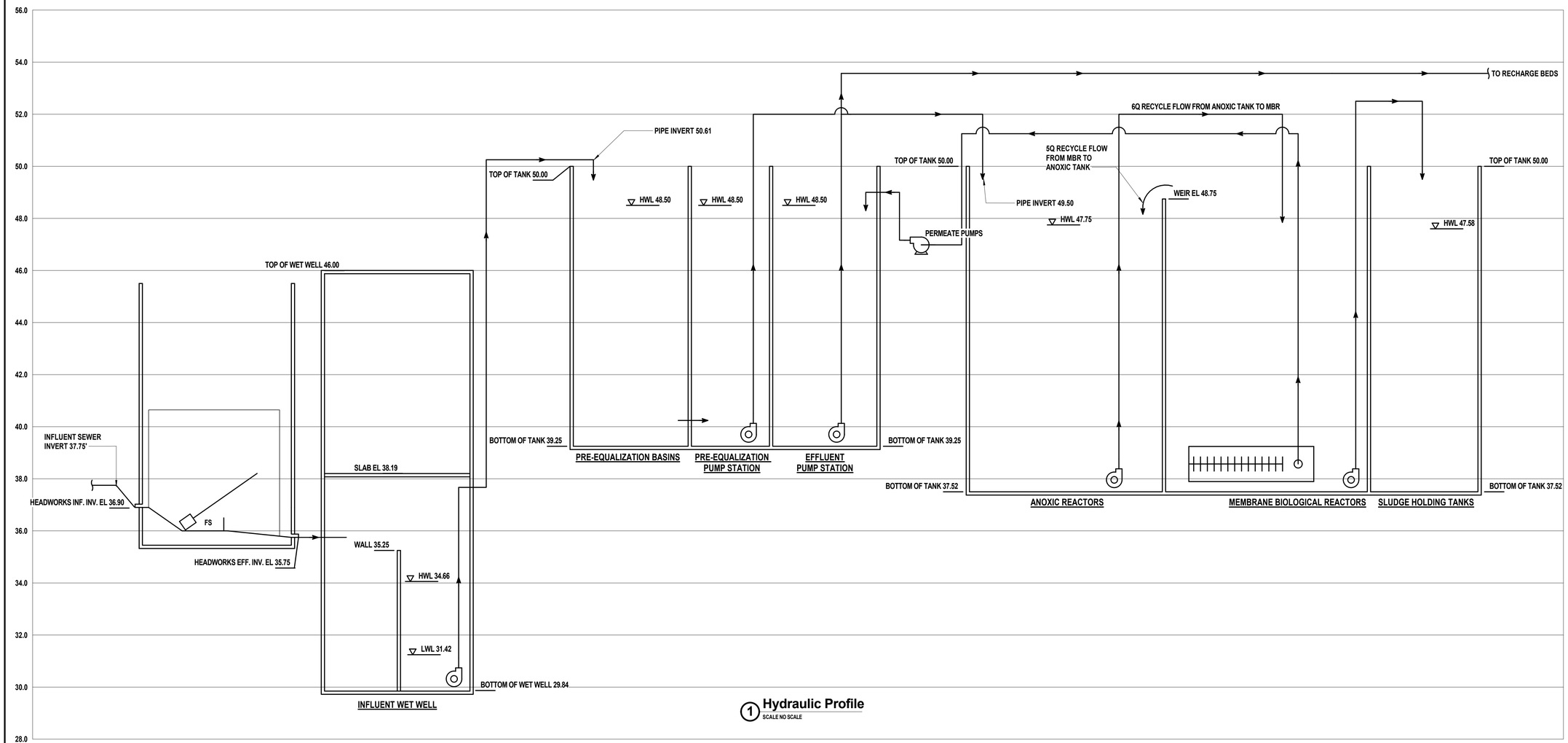
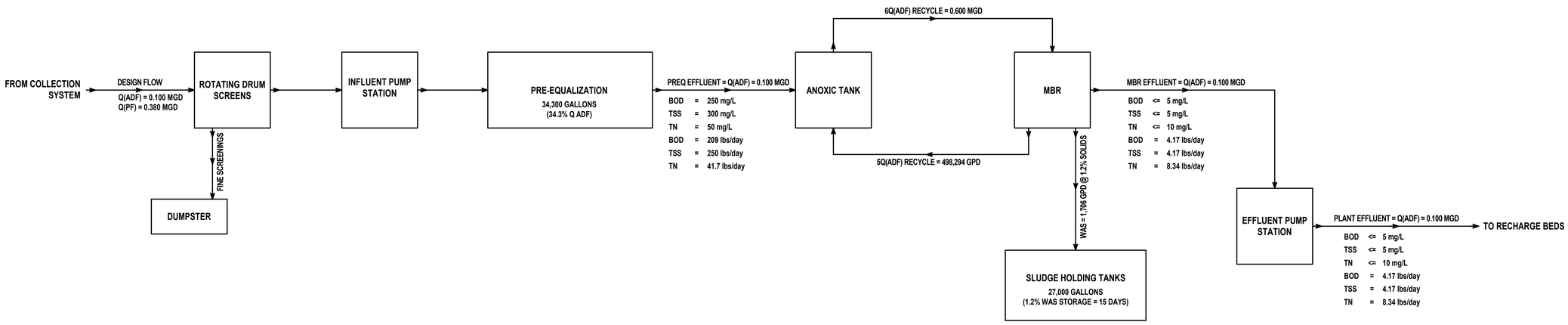


1 **Hydraulic Profile**
SCALE NO SCALE



2 **Mass Balance Diagram**
SCALE NO SCALE

H2M architects + engineers
538 Broad Hollow Road, 4th Floor
East
Melville, NY 11747

CONSULTANTS:

MARK	DATE	DESCRIPTION

STATE OF NEW YORK — CHRISTOPHER A. REISER — No. 072204 — LICENSED PROFESSIONAL ENGINEER

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Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

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HYDRAULIC PROFILE AND MASS BALANCE DIAGRAM

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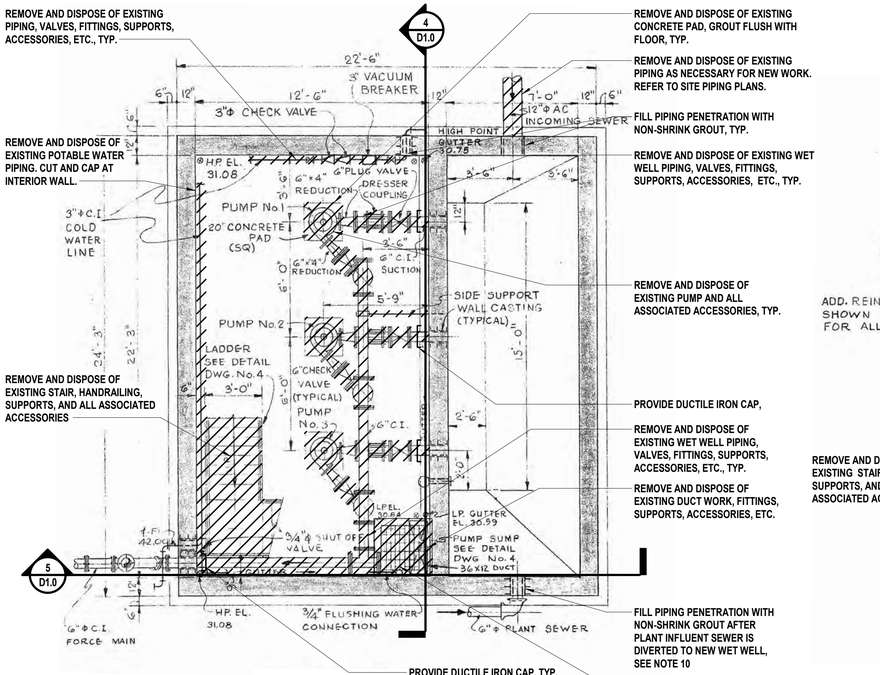
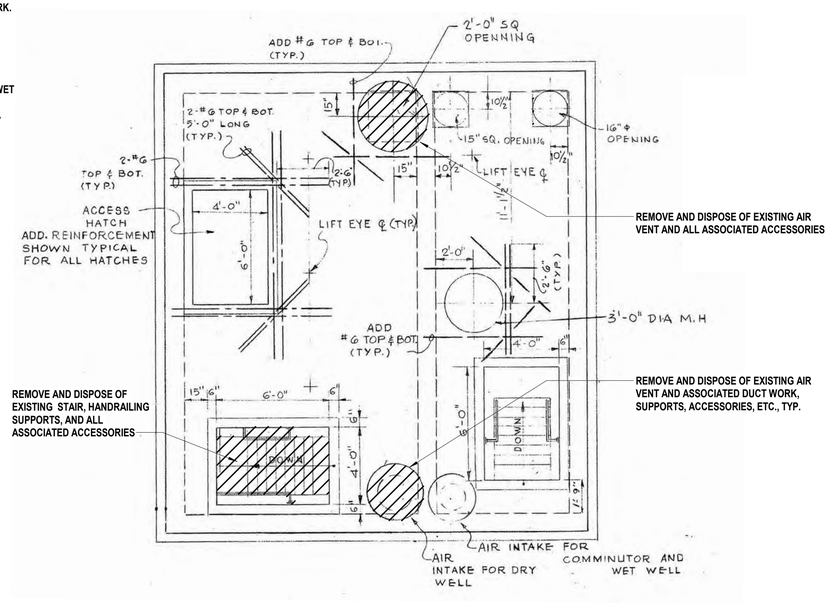
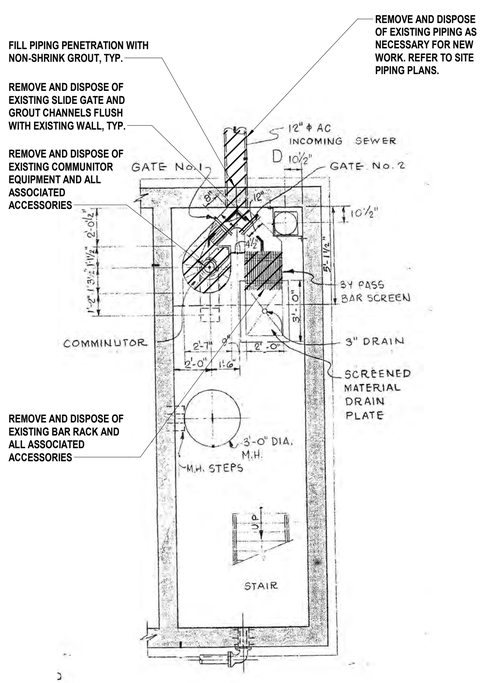


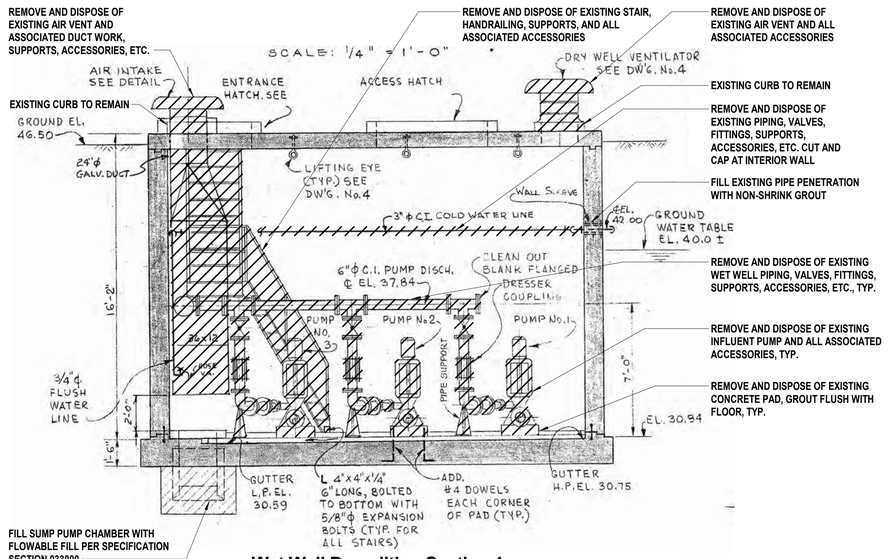
1 Wet Well Demolition Plan
SCALE NO SCALE



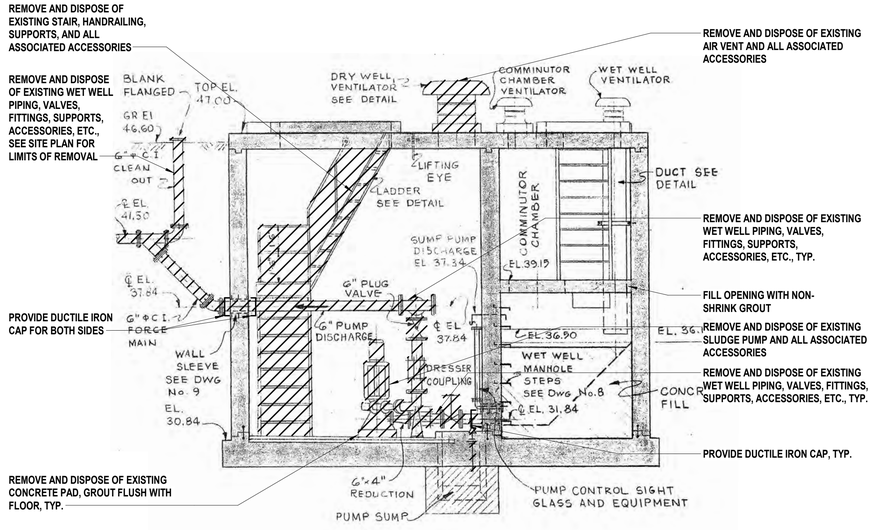
2 Wet Well Demolition Roof Plan
SCALE NO SCALE



3 Comminutor Chamber Demolition Plan
SCALE NO SCALE



4 Wet Well Demolition Section 1
SCALE 3/4" = 1'-0"



5 Wet Well Demolition Section 2
SCALE NO SCALE

GENERAL DEMOLITION NOTES:

1. ALL VOIDS CREATED FROM THE REMOVAL OF AN EXISTING PIPE OR EQUIPMENT THROUGH WALL SHALL BE FILLED WITH NON-SHRINK GROUT UNLESS OTHERWISE NOTED.
2. REMOVAL OF CALLED OUT OR HATCHED EQUIPMENT SHALL INCLUDE REMOVAL AND DISPOSAL OF EQUIPMENT AND ALL ASSOCIATED ACCESSORIES INCLUDING, BUT NOT LIMITED TO, PIPING, VALVES, FITTINGS, SUPPORTS, MAINTENANCE PADS AND CONTROL EQUIPMENT UNLESS OTHERWISE NOTED.
3. DEMOLITION DRAWINGS WERE OBTAINED FROM RECORDS SUPPLIED BY OTHERS. THE OWNER AND ENGINEER DO NOT GUARANTEE OR ACCEPT RESPONSIBILITY FOR DISCREPANCIES IN LOCATION AND SIZE SHOWN ON THE PLANS, NOR WILL ANY COMPENSATION BE MADE TO THE CONTRACTOR FOR ANY INCONVENIENCES CAUSED FOR HIM BY ENCOUNTERING THE AFOREMENTIONED DISCREPANCIES WHICH ARE INCORRECTLY SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING EXISTING CONDITIONS PRIOR TO COMMENCING THE WORK.
4. REVIEW ALL DEMOLITION WITH THE OWNER/ENGINEER TO CONFIRM DEMOLITION EXTENTS PRIOR TO BEGINNING THE WORK OF THIS PHASE. CONTRACTOR SHALL CLEARLY MARK ALL EQUIPMENT, GRATING, FRAMING, STAIRS, PIPING, VALVES, ETC. SCHEDULED FOR DEMOLITION PRIOR TO BEGINNING THE WORK.
5. SCHEDULE AND PERFORM ALL DEMOLITION TO STRICTLY ADHERE TO ALL THE REQUIREMENTS SET FORTH IN SPECIFICATION SECTION 017000 - MAINTENANCE OF PLANT OPERATIONS.
6. DISREGARD SECTION AND CALLOUTS SHOWN ON EXISTING PLANS.
7. ALL REMOVAL WORK SHALL BE CONDUCTED IN PHASES WITH NEW INSTALLATIONS IN ACCORDANCE WITH THE APPROVED PHASING PLAN. COORDINATE ANY BYPASS PUMPING WITH OWNER/ENGINEER.
8. ALL ELECTRICAL DEVICES AND BOXES SHALL BE REMOVED AND DISPOSED OF BY CONTRACT G. CONTRACT E SHALL DE-ENERGIZE ALL ELECTRICAL DEVICES AND REMOVE WIRES AND CONDUITS THAT ARE NOT REUSED BACK TO SUPPLY PANEL. CONTRACT G SHALL FILL ALL PENETRATIONS WITH NON-SHRINK GROUT PRIOR TO PLACING NEW WET WELL ONLINE.
9. THE OWNER WILL DRAIN THE CONTENTS OF THE INFLUENT PUMP STATION AND AERATION AND SETTLING TANKS TO WITHIN 3' OF THE BOTTOM. GENERAL CONTRACTOR RESPONSIBLE FOR REMOVAL OF REMAINING CONTENTS OF PROCESS TANKS AND INFLUENT WET WELL PRIOR TO PERFORMING CONVERSION WORK. REFER TO SECTION 024100 - DEMOLITION FOR ADDITIONAL INFORMATION AND AVAILABLE METHODS FOR DISPOSAL OF TANK CONTENTS.
10. EXISTING BUILDING SEWER TO REMAIN ACTIVE TO EXISTING WET WELL DURING INTERIM OPERATIONS. COORDINATE DIVERSION WITH THE STARTUP OF THE NEW WET WELL.
11. COAT CUT EXPOSED ENDS OF REINFORCEMENT WITH ZINC RICH PRIMER.
12. ALL WORK SHOWN ON DEMOLITION SHEETS SHALL BE PERFORMED BY CONTRACT G, UNLESS OTHERWISE NOTED.

ASBESTOS ABATEMENT NOTES:

1. ASBESTOS ABATEMENT WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL AND STATE CODE REQUIREMENTS AND THE CONTRACT SPECIFICATIONS. SEE INFORMATION DOCUMENTS SECTION OF THE PROJECT MANUAL FOR THE LABORATORY ASBESTOS ANALYSIS REPORT.
2. ASBESTOS PROJECT MONITORING - VISUAL CLEARANCE - PROJECT MONITORING SERVICE SHALL BE PERFORMED BY THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL COORDINATE AND SCHEDULE WITH OWNER'S THIRD PARTY ASBESTOS PROJECT MONITOR.
3. CONTRACTOR SHALL PROVIDE 10 DAYS NOTIFICATION TO ARCHITECT AND OWNER BEFORE COMMENCING ABATEMENT OPERATIONS ON SITE IN THE AREAS IDENTIFIED AS BEING POSITIVE FOR ASBESTOS. THE 'TAN LINOLUEM FLOORING' HAS BEEN IDENTIFIED AS AN ASBESTOS CONTAINING MATERIAL.
4. CONTRACTOR SHALL PAY FOR AND SECURE ALL PERMITS AND NOTIFICATIONS REQUIRED FOR ASBESTOS ABATEMENT WORK.
5. CONTRACTOR SHALL COORDINATE ALL ACTIVITIES WITH OWNER AND ARCHITECT.
6. CONTRACTOR SHALL SUBMIT COPIES OF ALL MANIFESTS AND LANDFILL RECEIPTS TO OWNER AND ARCHITECT.
7. CONTRACTOR IS TO VERIFY ALL QUANTITIES IN FIELD. THE COSTS ASSOCIATED WITH THE REMOVAL, CLEANING, REPAIR AND DISPOSAL OF ASBESTOS ARE TO BE INCLUDED IN THE CONTRACTOR'S BASE BID.
8. CONTRACTOR SHALL COMPLETELY REMOVE AND DISPOSE OF EXISTING TAN FLOORING LINOLEUM TILE DOWN TO CONCRETE SLAB BELOW. REMOVALS SHALL INCLUDE ABATEMENT OF TILE, COVE BASE AND ALL MASTIC. THE CONTRACTOR SHALL BE REPONSIBLE FOR INSPECTING THE CONDITIONS OF THE SLAB. PATCH AND LEVEL AS SPECIFIED TO ENSURE A LEVELED FLOOR FREE OF DIPS, WAVES, DEPRESSIONS AND TELEGRAPHING OF THE LEVELING COMPOUND OR IMPERFECTIONS IN THE SLAB FROM BELOW. THE CONTRACTOR SHALL PROVIDE SELF LEVELING COMPOUND FOR EACH ROOM.

H2M architects + engineers
538 Broad Hollow Road, 4th Floor
East
Melville, NY 11747

CONSULTANTS:

MARK	DATE	DESCRIPTION

STATE OF NEW YORK — CHRISTOPHER A. REED — LICENSED PROFESSIONAL ENGINEER — No. 072204

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PROJECT No:	DATE:	SCALE:
CASD 1602	November 2018	AS SHOWN

CLIENT

Town of Riverhead Calverton Sewer District

Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

TOWN OF RIVERHEAD — DAT ET PROSPERITAS PER PROGRESSUM — 1792

CONTRACT

ALL CONTRACTS

STATUS

FINAL BID DOCUMENT

SHEET TITLE

WET WELL DEMOLITION VIEWS

DRAWING # **D1.0**

SHEET # 7 OF 35

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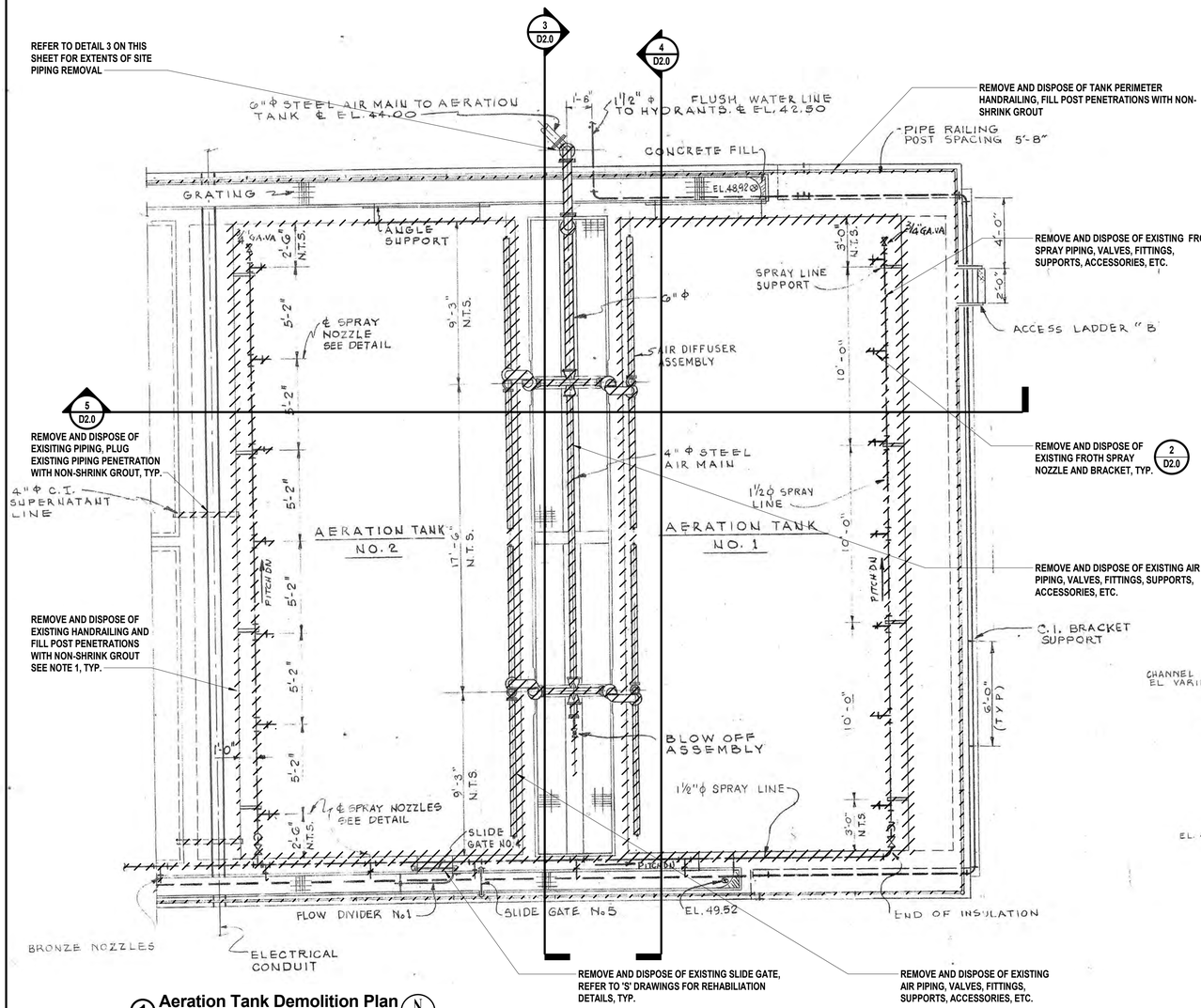
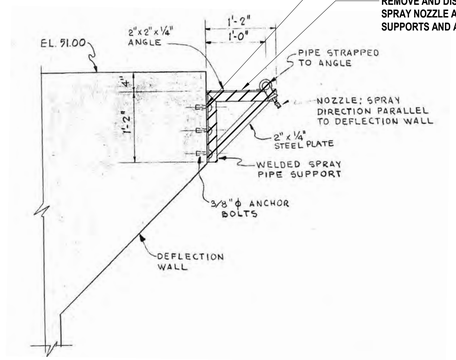


1 Aeration Tank Demolition Plan
SCALE NO SCALE

NOTES:

1. REFER TO 'A' DRAWINGS AND SECTION 030130.71 - CONCRETE REHABILITATION FOR ADDITIONAL INFORMATION REGARDING HANDRAIL REMOVAL AND INSTALLATION REQUIREMENTS FOR NEW HANDRAIL.
2. FILL CHANNELS WITH WITH FLOWABLE FILL UPON COMPLETION OF ALL TANK CONVERSION WORK.



2 Spray Nozzle Demolition Detail
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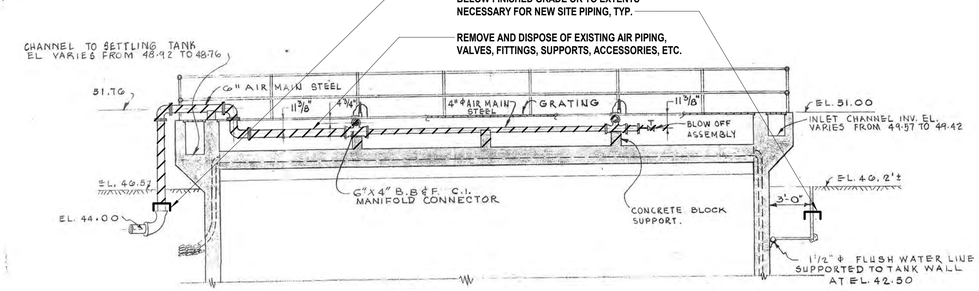
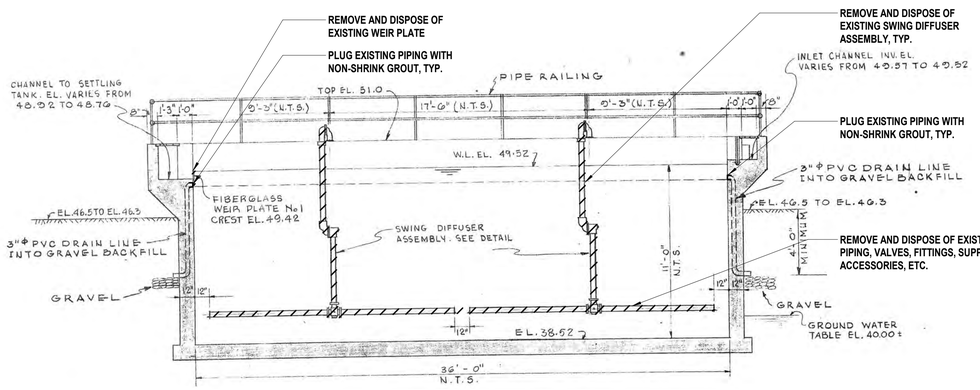


3 Air Piping Channel Demolition Section
SCALE NO SCALE



4 Aeration Tank Demolition Section 1
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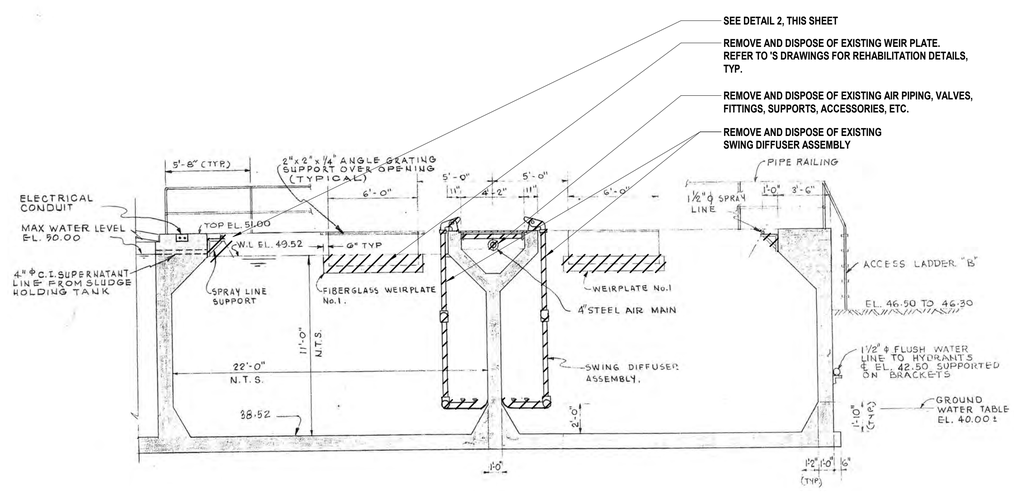

5 Aeration Tank Demolition Section 2
SCALE 1 : 5

H2M architects + engineers
538 Broad Hollow Road, 4th Floor
East
Melville, NY 11747

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Town of Riverhead Calverton Sewer District

Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

TOWN OF RIVERHEAD — DAS ET PROSPERITATI IUS PROGRESSUM — 1792

CONTRACT

ALL CONTRACTS

STATUS

FINAL BID DOCUMENT

SHEET TITLE

AERATION TANKS DEMOLITION VIEWS AND DETAILS

DRAWING # **D2.0**

SHEET # 8 OF 35

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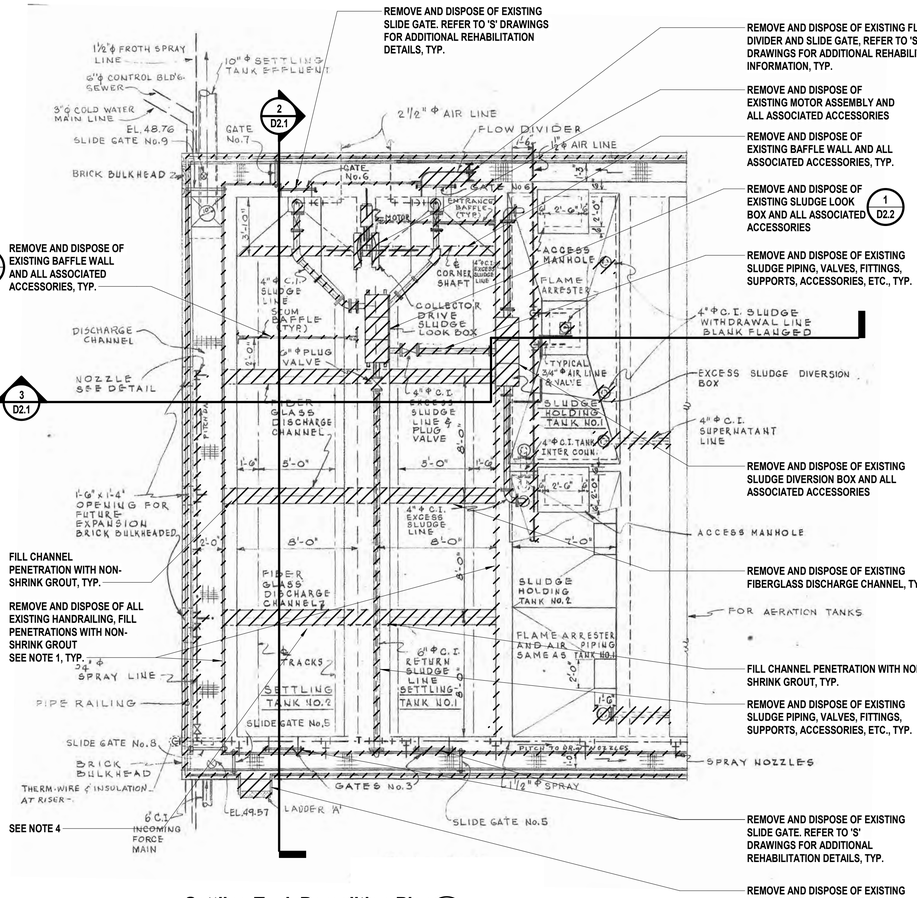
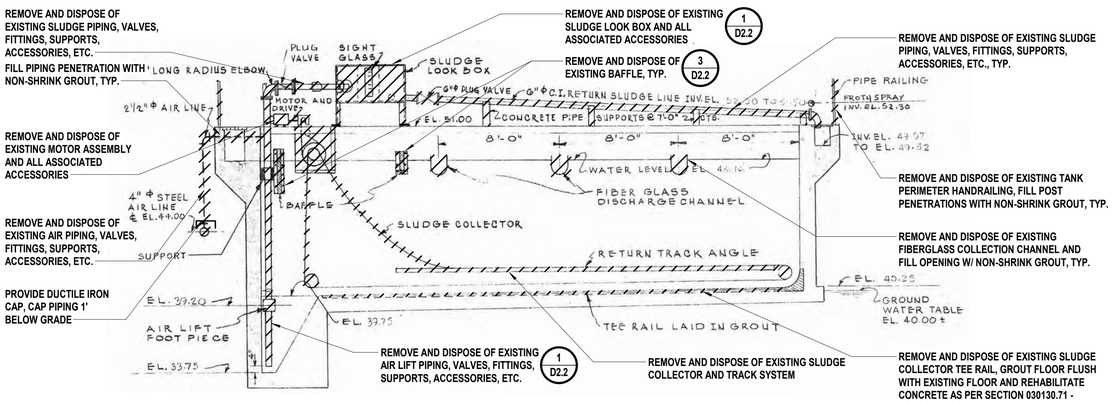


1 Settling Tank Demolition Plan
SCALE NO SCALE



2 Settling Tank Demolition Section 1
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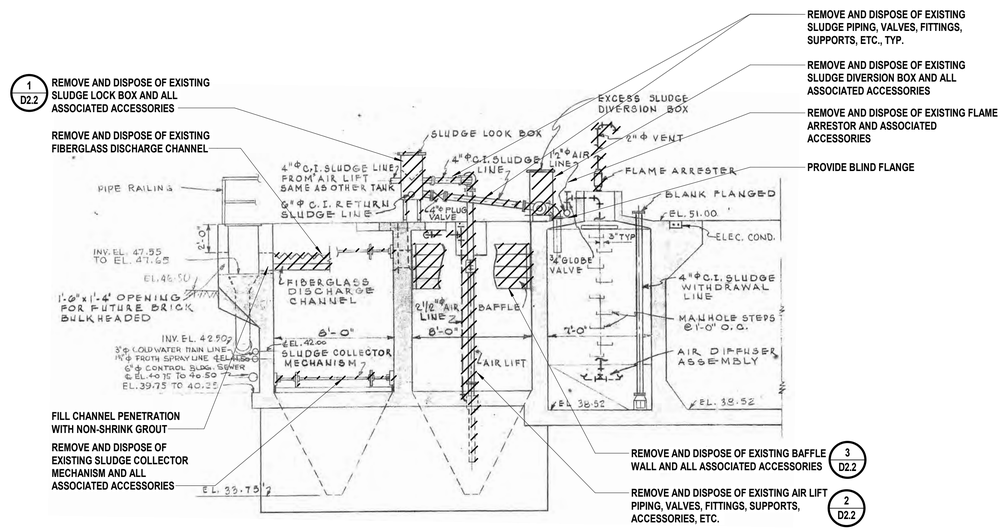

3 Settling Tank Demolition Section 2
SCALE NO SCALE

NOTES:

1. REFER TO 'A' DRAWINGS AND SECTION 030130.71 - CONCRETE REHABILITATION FOR ADDITIONAL INFORMATION REGARDING HANDRAIL REMOVAL AND INSTALLATION REQUIREMENTS FOR NEW HANDRAIL.
2. EMPTY AND CLEAN EXISTING SLUDGE TANK IN ACCORDANCE WITH SECTION 024100 - DEMOLITION PRIOR TO ABANDONMENT AT COMPLETION OF CONSTRUCTION. THE OWNER WILL DRAIN THE CONTENTS OF THE TANK TO WITHIN 3' FROM THE BOTTOM.
3. FILL CHANNELS WITH WITH FLOWABLE FILL UPON COMPLETION OF ALL TANK CONVERSION WORK.
4. COORDINATE PARTIAL REMOVAL OF EFFLUENT TROUGH TO ALLOW FOR NEW PRE-EQUALIZATION PUMP STATION WALL CONSTRUCTION WITH OWNER/ENGINEER TO MAINTAIN PROCESS EFFLUENT.

H2M architects + engineers
538 Broad Hollow Road, 4th Floor
East
Melville, NY 11747

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STATE OF NEW YORK — CHRISTOPHER A. HESSE — LICENSED PROFESSIONAL ENGINEER — No. 072204

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Town of Riverhead Calverton Sewer District

Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

TOWN OF RIVERHEAD — TAKE PROSPERITAS PER PROGRESSUM — 1792

CONTRACT

ALL CONTRACTS

STATUS

FINAL BID DOCUMENT

SHEET TITLE

SETTLING AND SLUDGE HOLDING TANK DEMOLITION VIEWS

DRAWING # **D2.1**

SHEET # 9 OF 35

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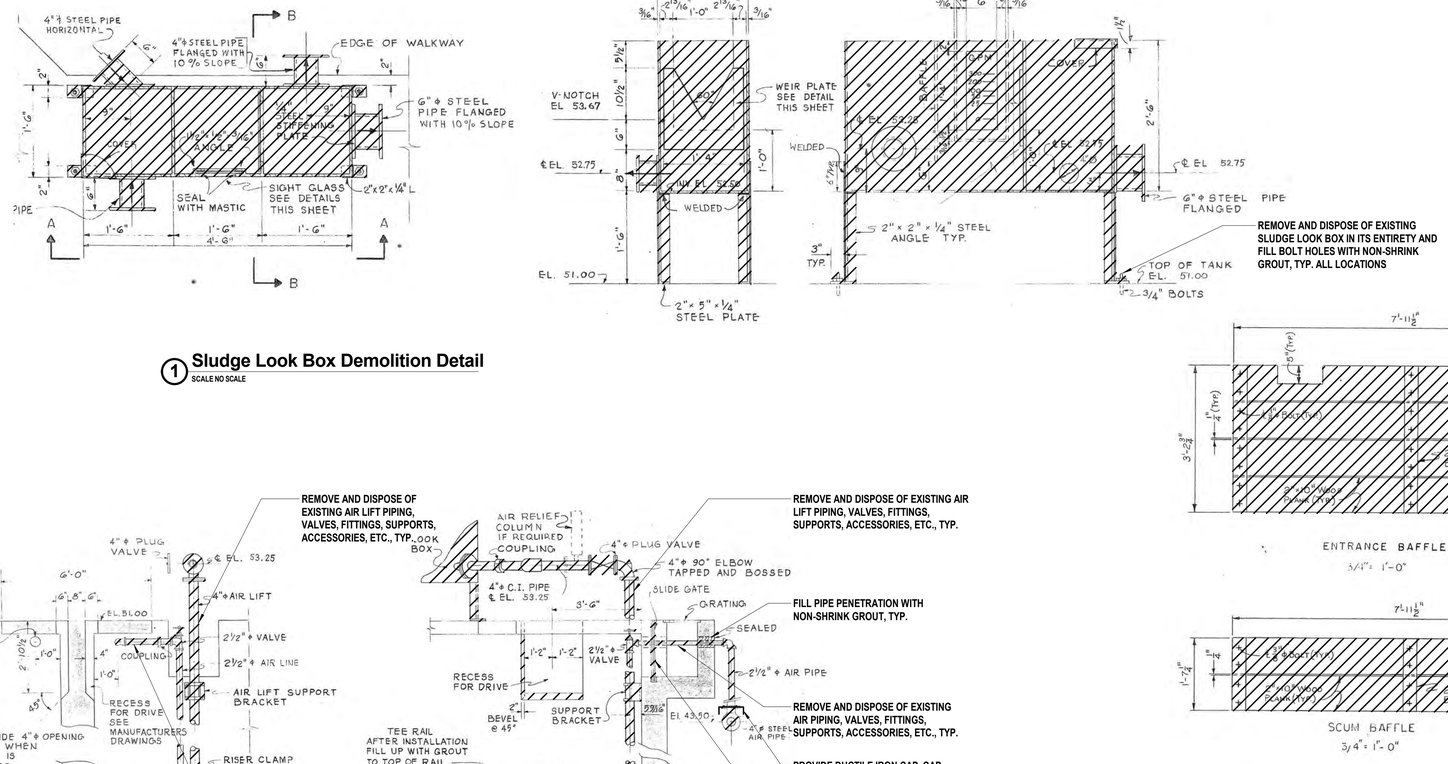

1 Sludge Look Box Demolition Detail
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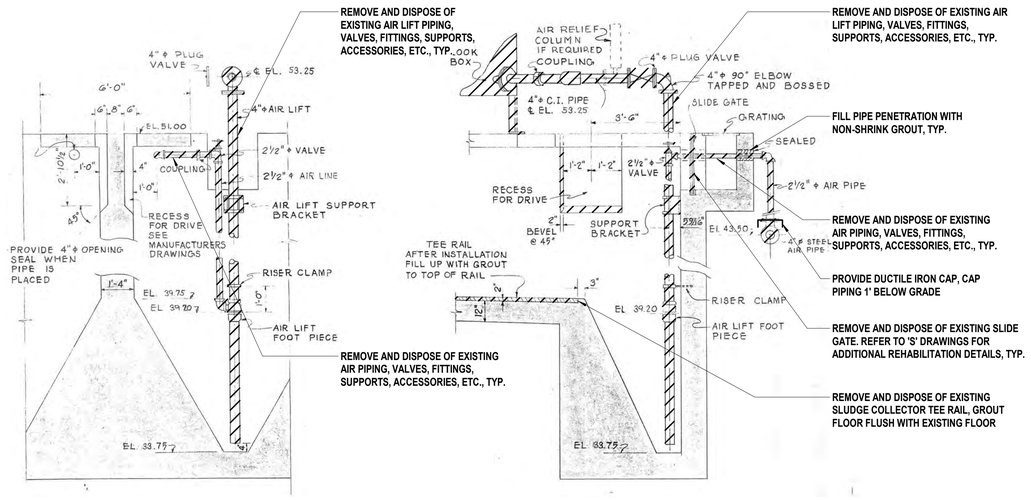

2 Settling Tank Airlift Demolition Details
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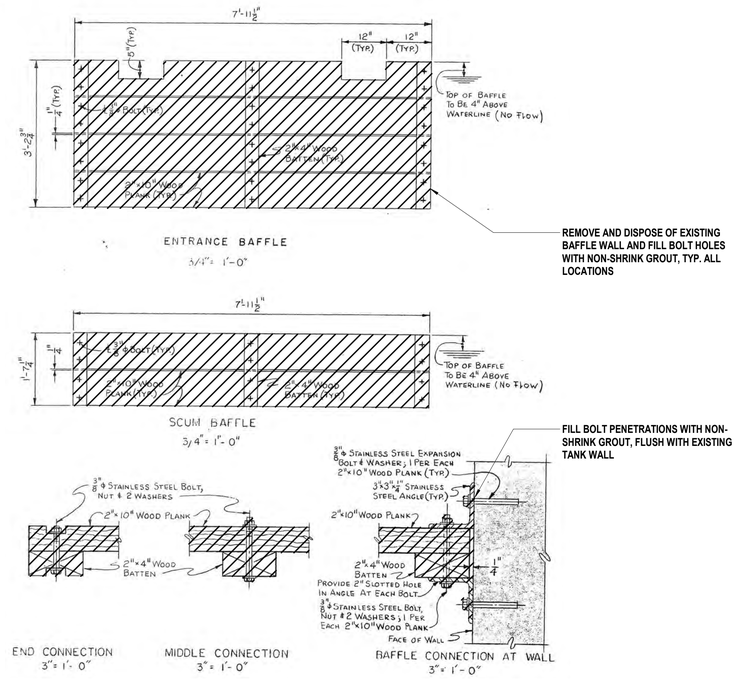

3 Settling Tank Baffle Demolition Details
SCALE NO SCALE

H2M architects + engineers
538 Broad Hollow Road, 4th Floor
East
Melville, NY 11747

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CASD 1602	November 2018	AS SHOWN

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Town of Riverhead Calverton Sewer District

Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

CONTRACT
ALL CONTRACTS

STATUS
FINAL BID DOCUMENT

SHEET TITLE
SETTLING AND SLUDGE HOLDING TANK DEMOLITION DETAILS

DRAWING # **D2.2**

SHEET # 10 OF 35

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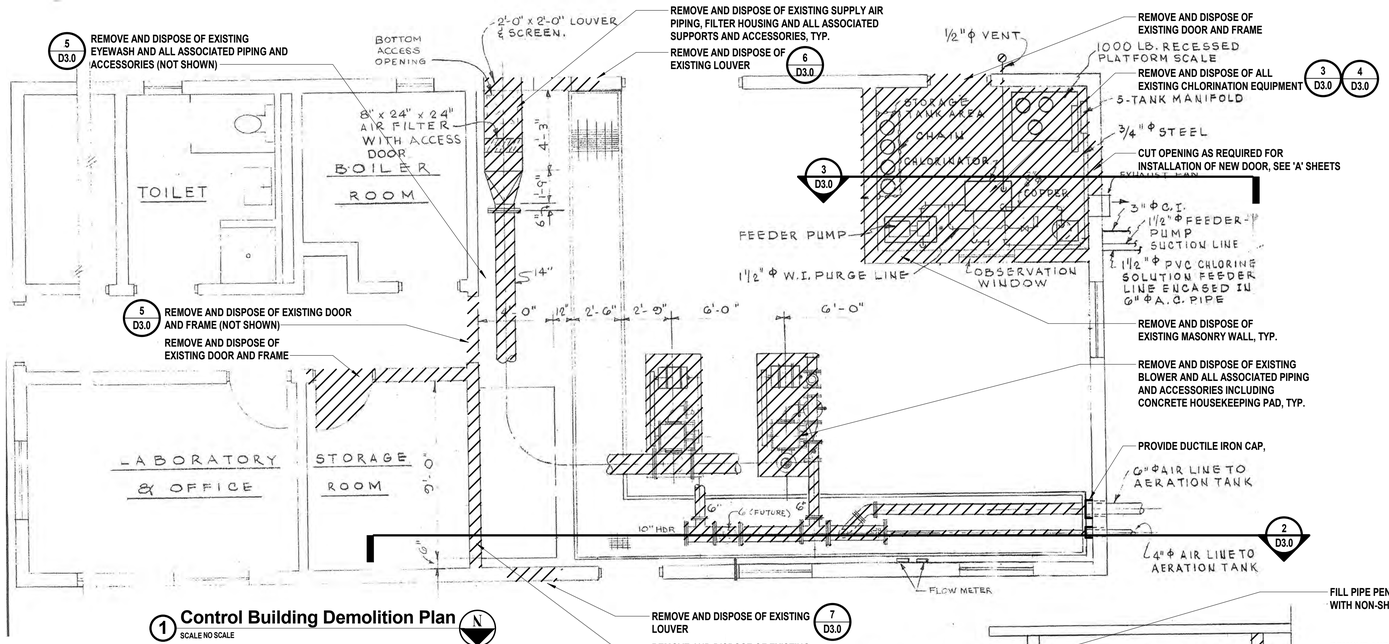
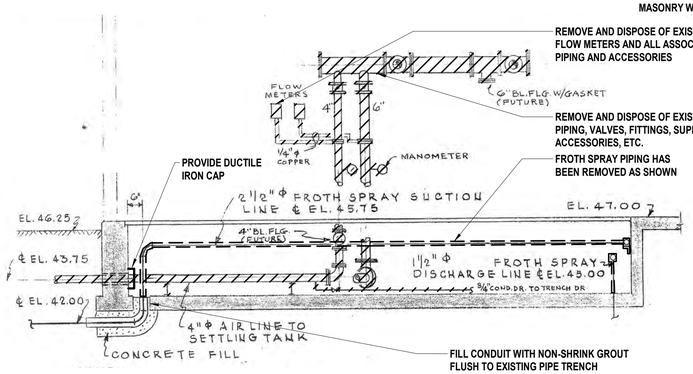


1 Control Building Demolition Plan
SCALE NO SCALE



2 Pipe Trench Demolition Section
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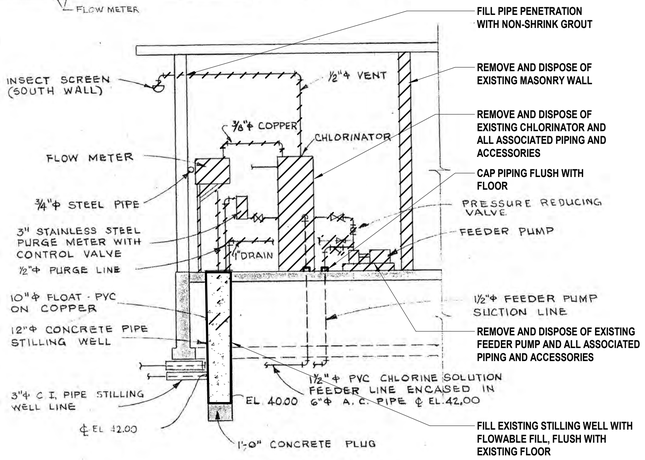


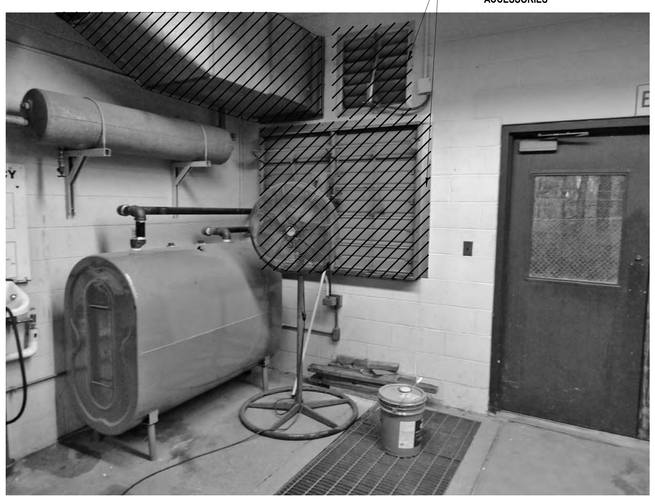
3 Chlorinator Demolition Section
SCALE NO SCALE

NOTES:

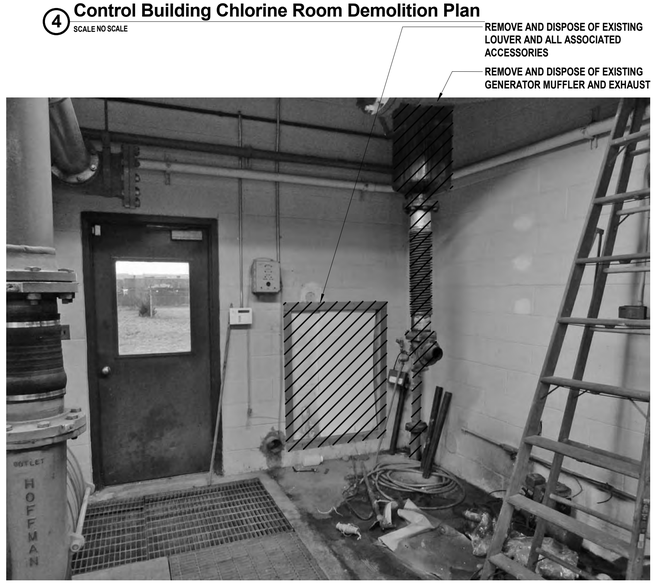
1. ALL EXISTING ROOFING MATERIALS TO BE REMOVED AND REPLACED. REFER TO 'A' DRAWINGS AND SECTION 075323.13 - ELASTOMERIC SHEET ROOFING FOR ADDITIONAL INFORMATION.
2. ALL EXISTING TAN LINOLEUM FLOORING CONTAINING ASBESTOS TO BE REMOVED FROM THE EXISTING STORAGE ROOM, BOILER ROOM, LABORATORY/OFFICE, BATHROOM, HALLWAY AND LUNCH/LOCKER ROOM. REFER TO PROJECT MANUAL FOR ADDITIONAL INFORMATION REGARDING ABATEMENT OF ASBESTOS CONTAINING MATERIALS.
3. EXISTING CHLORINE ROOM IS BEING USED FOR A TEMPORARY LIQUID SODIUM HYDROXIDE FEED SYSTEM. COORDINATE RELOCATION OF PUMP AND 55 GALLON DRUM WITH OWNER PRIOR TO DEMOLITION OF THIS AREA. ALL CONTENTS OF THIS ROOM TO BE REMOVED AND DISPOSED OF AFTER RELOCATION OF PUMP AND DRUM STORAGE.

4 Control Building Chlorine Room Demolition Plan
SCALE NO SCALE

5 Control Building Eyewash and Door Demolition Detail
SCALE NO SCALE



6 Control Building Louver Demolition Detail 1
SCALE NO SCALE



7 Control Building Louver Demolition Detail 2
SCALE NO SCALE

H2M architects + engineers
538 Broad Hollow Road, 4th Floor
East
Melville, NY 11747

CONSULTANTS:

MARK	DATE	DESCRIPTION

STATE OF NEW YORK — CHRISTOPHER A. REED — No. 072204 — LICENSED PROFESSIONAL ENGINEER

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CLIENT

Town of Riverhead Calverton Sewer District

Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

TOWN OF RIVERHEAD 1792 — TAX ET PROSPERITAS, PER PROGRESSUM

CONTRACT

ALL CONTRACTS

STATUS

FINAL BID DOCUMENT

SHEET TITLE

CONTROL BUILDING DEMOLITION VIEWS

DRAWING #

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SHEET # 11 OF 35

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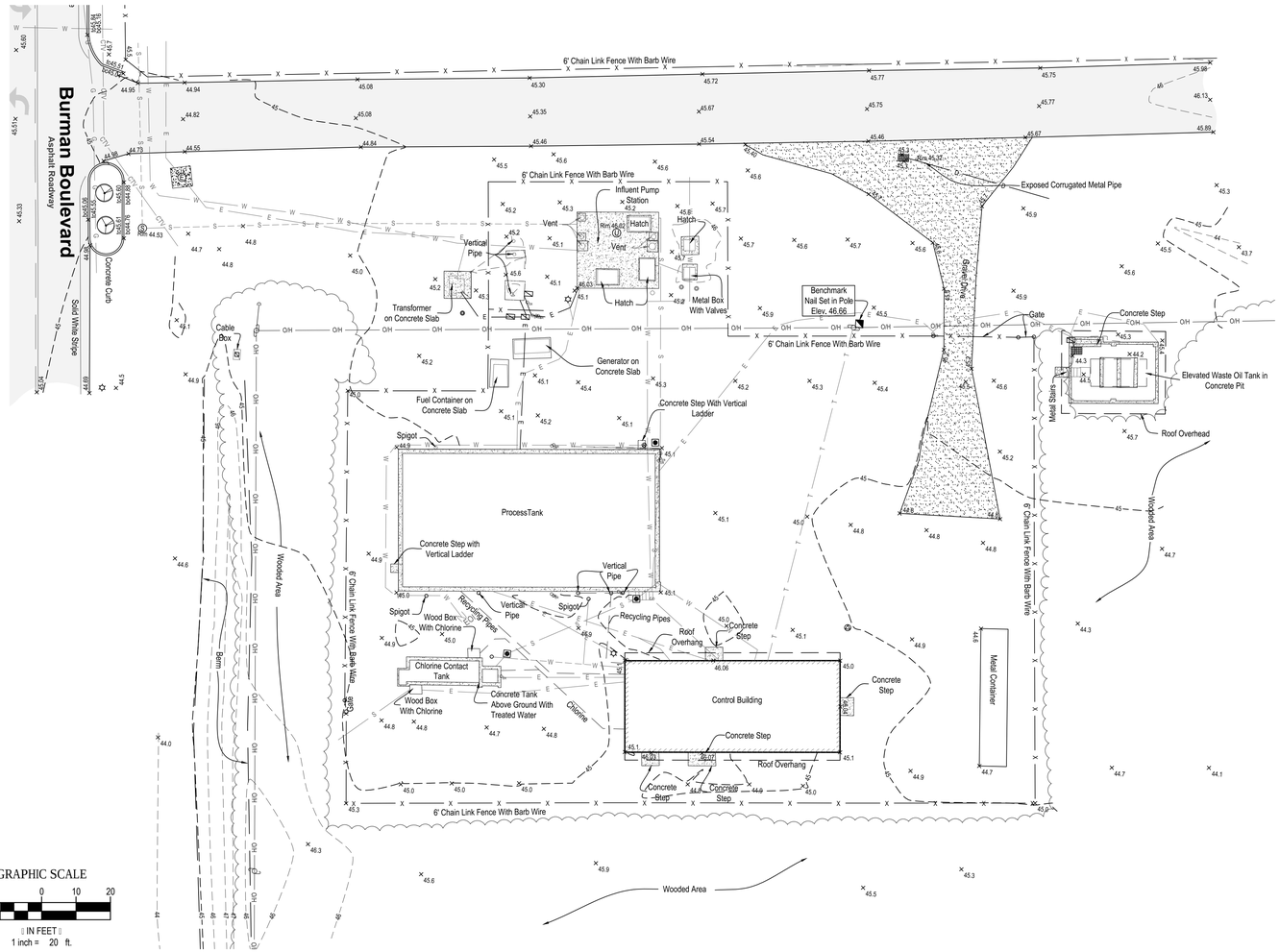

GRAPHIC SCALE

20 0 10 20

IN FEET

1 inch = 20 ft.

E i ting Site ondition

SCALE: 1" = 20'

LEGEND

DESCRIPTION	SYMBOL
BENCHMAR	
WATER METER	WM
WATER AL E	
ROOF DRAINILEADER	L
SANITARY MANHOLE	S
INLET	
CLEAN OUT	
ELECTRIC MANHOLE	E
ELECTRIC RISER	EK
LIGHT	
UTILITY POLE/GUY POLE	
GUY WIRE	
PULL BOX	
MONITORING WELL	
MANHOLE	U
BOLLARD	
CURB	
O ERHEAD WIRES	OH OH
WATER MAIN	W W
SANITARY SEWER	S
UNDERGROUND GAS	G
UNDERGROUND ELECTRIC	E E
UNDERGROUND TELEPHONE	T T
CABLE T	CT CT
FENCE	X X
CONTOUR	100
SPOT ELE ATION	100.50
ASPHALT PA EMENT	
CONCRETE PA EMENT	

EXISTING CONDITIONS NOTES:

1. EXISTING SUR EY PREPARED BY H2M ARCHITECTS ENGINEERS. DATED JANUARY 23, 2018.
2. MAR OUT OF UNDERGROUND UTILITIES COMPLETED BY SINGER UTILITY ENGINEERING P.C. ON JANUARY 2018.
3. BENCHMAR - NAIL SET IN POLE, NORTHEAST OF SITE, ELE ATION REFER TO N.A D. 1988.
4. LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES BOTH PUBLIC AND CUSTOMER OWNED, WERE OBTAINED FROM EITHER OLD MAPS, SUR EYS, DRAWINGS/RECORDS SUPPLIED BY OTHERS AND/OR UTILITY MAR OUT. THE OWNER AND ENGINEER DO NOT GUARANTEE OR ACCEPT RESPONSIBILITY FOR ANY DAMAGE TO SUCH FACILITIES DUE TO DISCREPANCIES IN LOCATION AND SIZE SHOWN ON THE PLANS OR THOSE UTILITIES AND STRUCTURES NOT SHOWN.

H2M architects + engineers

3 Broad ollow Road 4t Floor Ea t
Melville 11 4
31 000 • www 2 co

CONSULTANTS:

MARK	DATE	DESCRIPTION

L ER O OF IS O UME E E B U E SE ROFESSO L S ELLS L

DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
DS	DS	MRM	

PROJECT No.:	DATE:	SCALE:
CASD 1602	November 2018	AS SHOWN

CLIENT

CALVERTON SEWER DISTRICT

Upgrade o t e Sewage reat ent lant Enterpri e ar at alverton Mod le o 1 0 100 MG

TOWN OF RIVERHEAD — PAX ET PROSPERITAS PER PROGRESSUM — 1792

S ol o ont

CONTRACT

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SHEET No.

12 OF 3

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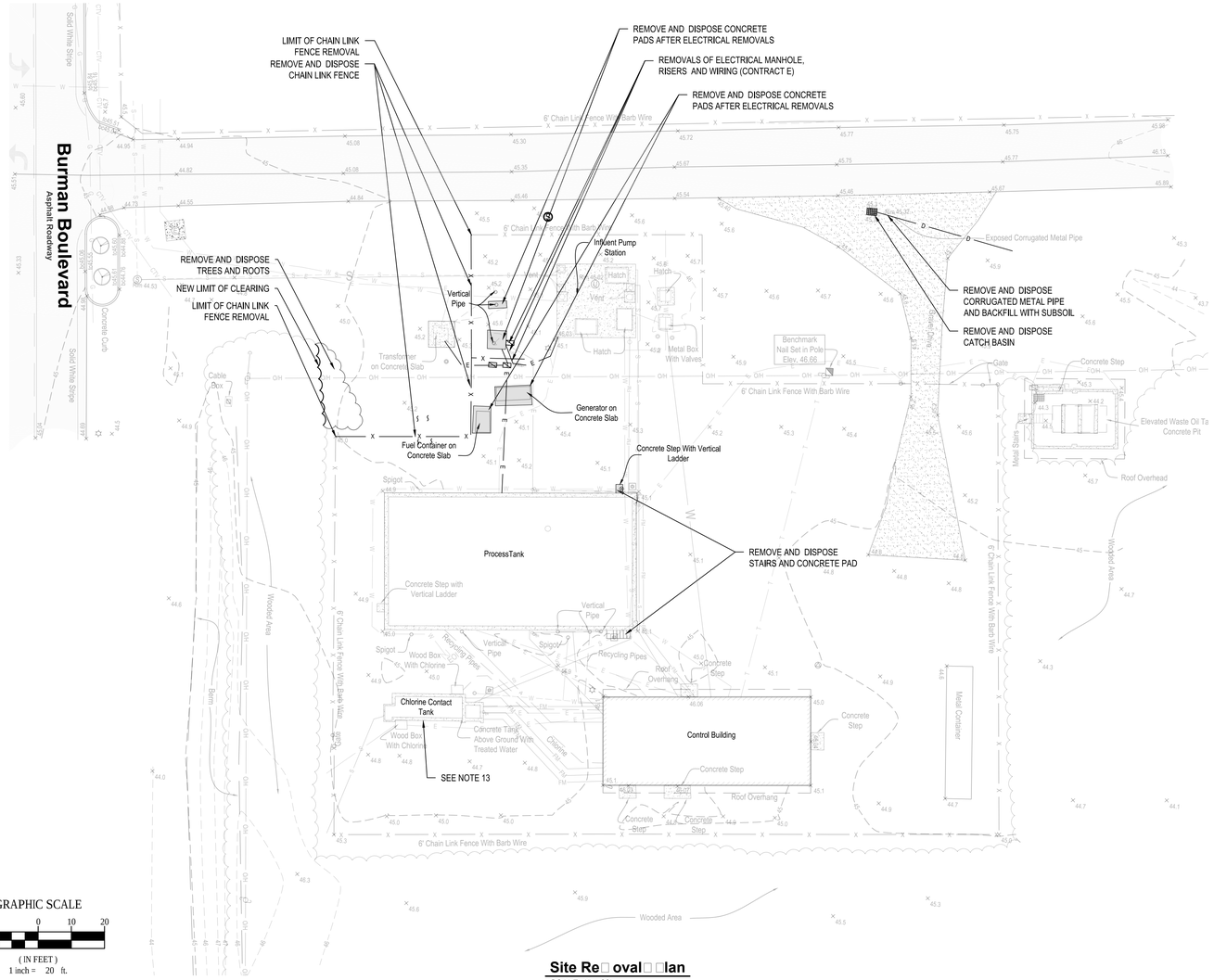

GRAPHIC SCALE

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(IN FEET)

1 inch = 20 ft.

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SCALE: 1" = 20'

LEGEND

DESCRIPTION	SYMBOL
REMOVE AND DISPOSE EXISTING CONCRETE	
REMOVE AND DISPOSE OF EXISTING CHAIN LINK FENCE	X X
REMOVE AND DISPOSE OF EXISTING DRAINAGE INLET / CATCH BASIN	
REMOVE AND DISPOSE OF EXISTING DRAINAGE LINE	D D

SITE REMOVAL NOTES:

1. REPORT ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THE PLANS TO THE ENGINEER IN WRITING IMMEDIATELY.
2. UNDERGROUND UTILITY INFORMATION SHOWN ON THESE PLANS WAS OBTAINED FOR DESIGN PURPOSES ONLY. PROVIDE FOR CONSTRUCTION MARKOUT AND LOCATE EXISTING UNDERGROUND UTILITIES. NO EXCAVATION CAN COMMENCE UNTIL UTILITY DOCUMENTATION HAS BEEN COMPLETED.
3. AFTER MARKOUT AND PRIOR TO DISTURBING THE SITE, UNCOVER ALL SUBSURFACE UTILITIES AND STRUCTURES WITHIN LIMITS OF DISTURBANCE TO CONFIRM THEIR LOCATION AND DEPTH.
4. NO COMPENSATION WILL BE MADE FOR ANY INCONVENIENCE CAUSED BY ENCOUNTERING UTILITIES AND STRUCTURES WHICH ARE NOT SHOWN, OR ARE INACCURATELY SHOWN ON THE PLANS.
5. REPAIR ANY DAMAGE TO EXISTING UTILITIES RESULTING FROM CONTRACTOR OPERATIONS IMMEDIATELY AT NO COST TO OWNER.
6. REPAIR ANY DAMAGE TO EXISTING SITE FEATURES SCHEDULED TO REMAIN RESULTING FROM CONTRACTOR OPERATIONS AT NO COST TO OWNER.
7. PROVIDE TEMPORARY FENCING TO PROTECT WORK AREAS.
8. INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN PRIOR TO ANY GROUND DISTURBANCE.
9. DELINEATE THE LIMITS OF CLEARING AND REVIEW WITH THE OWNER PRIOR TO COMMENCING WORK.
10. NOTIFY OWNER AND ENGINEER IMMEDIATELY IN WRITING WHEN UNKNOWN STRUCTURES OR SUSPECTED HAZARDOUS OR CONTAMINATED MATERIALS ARE ENCOUNTERED PRIOR TO REMOVAL OR DISTURBANCE.
11. TAKE APPROPRIATE MEASURES TO PROTECT PEDESTRIANS AND VEHICULAR TRAFFIC DURING REMOVAL ACTIVITIES, AND PROVIDE TEMPORARY MEASURES FOR THE PROTECTION AND SAFETY OF THE PUBLIC UNTIL FINAL ACCEPTANCE BY THE OWNER.
12. BACKFILL ALL VOIDS RESULTING FROM THE REMOVAL OF EXISTING SITE FEATURES. BACKFILL TO BE SOIL, FREE OF ORGANIC MATERIAL, DEBRIS, TRASH, CLAY AND STONES LARGER THAN 4 INCHES.
13. UPON SUCCESSFULL STURTUP OF NEW EFFUENT PUMP STATION, EMPTY AND CLEAN EXISTING CHLORINE CONTACT TANK. PROVIDE MINIMUM SIX 18'Ø HOLES IN BOTTOM FOR DRAINAGE AND FILL WITH CRUSHED STONE. CUT AND CAP EXISTING OUTFALL PIPING MAXIMUM 3' FROM EDGE OF TANK.
14. ALL WORK SHOWN ON THIS SHEET IS 'CONTRACT G' UNLESS OTHERWISE NOTED.

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CONSULTANTS:

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CALVERTON SEWER DISTRICT

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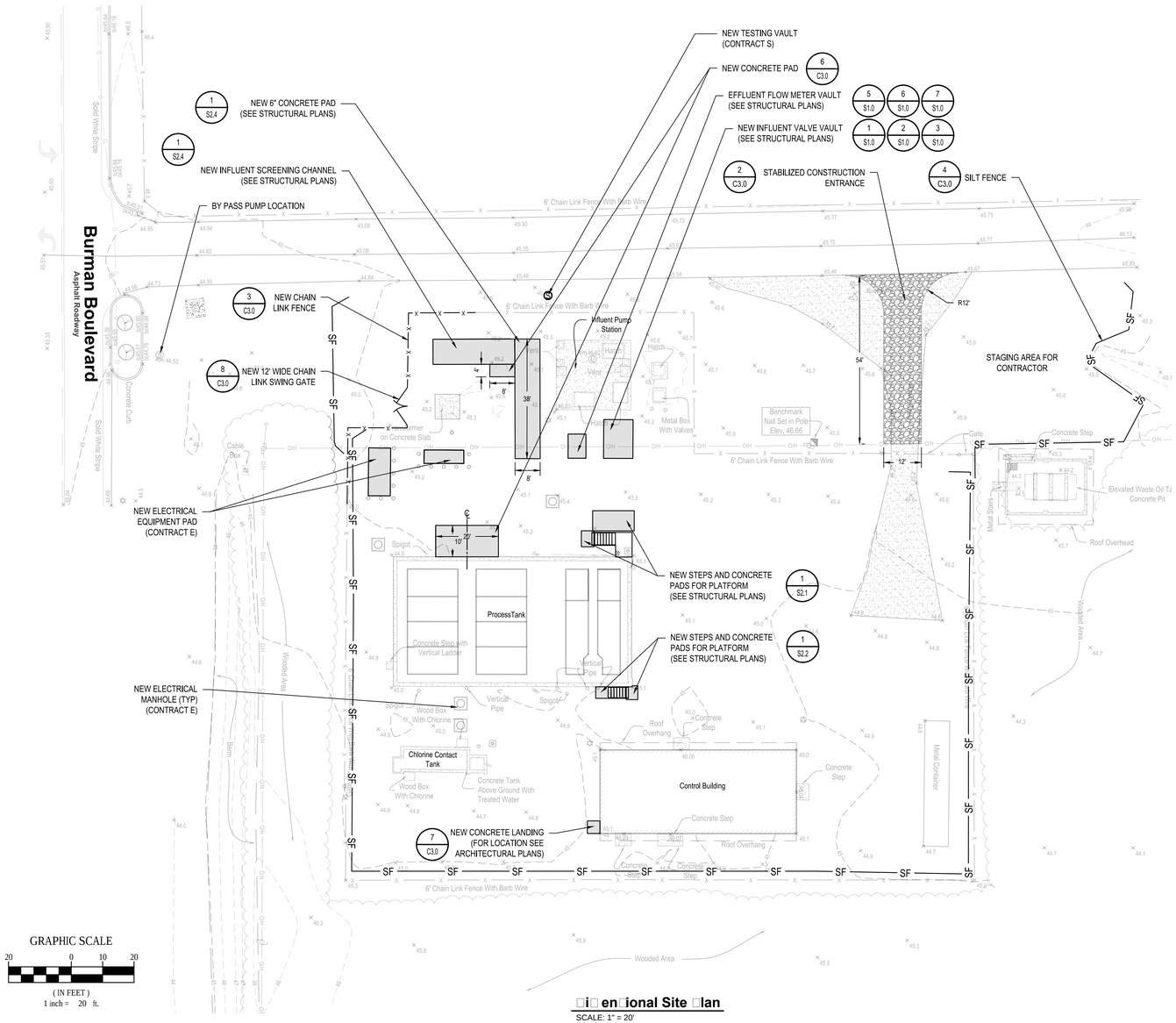

GRAPHIC SCALE

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LEGEND

DESCRIPTION	SYMBOL
CONCRETE PAD	
ELECTRICAL PULL BOX	
CHAIN LINK FENCE	x x

SITE PLAN NOTES:

1. INSPECT THE SITE PRIOR TO SUBMISSION OF BIDS AND SHALL MAKE NO ADDITIONAL CLAIMS REGARDING SITE CONDITIONS THEREAFTER.
2. NOTIFY THE OWNER AND H2M (TELEPHONE 631-756-8000) AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF THE WORK. THE SAME NOTICE SHALL BE REQUIRED WHEN RESUMING WORK AFTER ANY STOPPAGE OR DELAY.
3. COMPLETE ALL SURVEY AND STAKEOUT AS REQUIRED TO PROPERLY COMPLETE THE WORK.
4. PERFORM DAILY CLEANUP OPERATIONS INCLUDING REMOVAL OF DEBRIS AND EXCESS CONSTRUCTION MATERIAL, AND DRIVEWAY/STREET CLEANING TO THE SATISFACTION OF THE OWNER.
5. ALL CONSTRUCTION TO CONFORM WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODE REQUIREMENTS.
6. INSTALL 30 BOLLARDS AT LOCATIONS DITECTED BY ENGINEER IN FIELD.
7. ALL WORK SHOWN ON THIS SHEET IS 'CONTRACT G' UNLESS OTHERWISE NOTED.

GRADING AND DRAINAGE NOTES:

1. FOR NEW CONSTRUCTION THAT MEETS EXISTING CONDITIONS, ABUTTING SURFACES SHALL BE FLUSH AND ALIGNED.
2. ADJUST ALL EXISTING CASTINGS AND VALVE COVERS TO MEET PROPOSED GRADE.
3. CONSTRUCTION DEBRIS AND EXCESS SOIL SHALL BE REMOVED AND LEGALLY DISPOSED OFF SITE.
4. UNSUITABLE SOILS ENCOUNTERED DURING CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER IMMEDIATELY IN WRITING BEFORE REMOVAL OR DISTURBANCE.
5. REFER TO C2.2 (YARD PIPING PLANS) FOR INFORMATION REGARDING MECHANICAL PIPING.
6. BACKFILL AROUND NEW VAULTS AND EQUIPMENT PAD WITH SUBSOIL. MATCH EXISTING GRADES

EROSION CONTROL NOTES:

1. DURING THE COURSE OF CONSTRUCTION, EROSION AND SEDIMENT CONTROL MEASURES ARE NECESSARY TO PREVENT THE TRANSPORT OF SEDIMENT TO UNDISTURBED AREAS, PONDS, WATER COURSES, DRAINAGE SYSTEMS, RECHARGE BASINS, AND ROADS. THE MINIMUM EROSION CONTROL MEASURES REQUIRED ARE INDICATED ON THIS PLAN. IN ADDITION, THE FOLLOWING GENERAL CONDITIONS SHALL BE OBSERVED:
   a. EXISTING VEGETATION SCHEDULED TO REMAIN SHALL BE PROTECTED AND REMAIN UNDISTURBED.
   b. INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES AS REQUIRED TO PREVENT THE INCIDENTAL DISCHARGE OF SEDIMENT FROM THE SITE.
2. SPECIFIC METHODS AND MATERIALS EMPLOYED IN THE INSTALLATION AND MAINTENANCE OF EROSION CONTROL MEASURES MUST CONFORM TO THE LATEST EDITION OF THE "NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL".
3. INSTALL PROPRIETARY EROSION AND SEDIMENT CONTROL PRODUCTS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
4. ADJUST EROSION AND SEDIMENT CONTROL MEASURES TO ACCOMMODATE CONSTRUCTION PHASING TO MAINTAIN EFFECTIVENESS OF EROSION AND SEDIMENT CONTROL MEASURES.
5. PROTECT EXISTING DRAINAGE INLETS WITHIN THE PROJECT LIMITS AND NEW DRAINAGE INLETS INSTALLED AS PART OF THIS PROJECT FROM SEDIMENT INTRUSION.
6. PERFORM INSPECTION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES ON A WEEKLY BASIS AND AFTER HEAVY OR PROLONGED STORMS. MAINTENANCE MEASURES INCLUDE, BUT ARE NOT LIMITED TO, CLEANING AND REPAIR OF ALL EROSION AND SEDIMENT CONTROL MEASURES.
7. UTILIZE APPROPRIATE MEANS TO CONTROL DUST DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO APPLYING WATER TO BARE SOIL SURFACES.
8. MAINTAIN THE STABILIZED CONSTRUCTION ENTRANCE TO PREVENT SOIL AND LOOSE DEBRIS FROM BEING TRACKED ONTO LOCAL ROADS. MAINTAIN THE CONSTRUCTION ENTRANCE WEEKLY UNTIL THE SITE IS PERMANENTLY STABILIZED.
9. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS ARE PERMANENTLY STABILIZED. AFTER PERMANENT STABILIZATION, REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AND ALL ACCUMULATED SEDIMENT AND DEBRIS FROM THE SITE AND DRAINAGE STRUCTURES.

TOTAL LAND DISTURBANCE = 0.24 ACRES

H2M architects + engineers

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CONSULTANTS:

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TOWN OF RIVERHEAD
PAX ET PROSPERITAS PER PROGRESSUM
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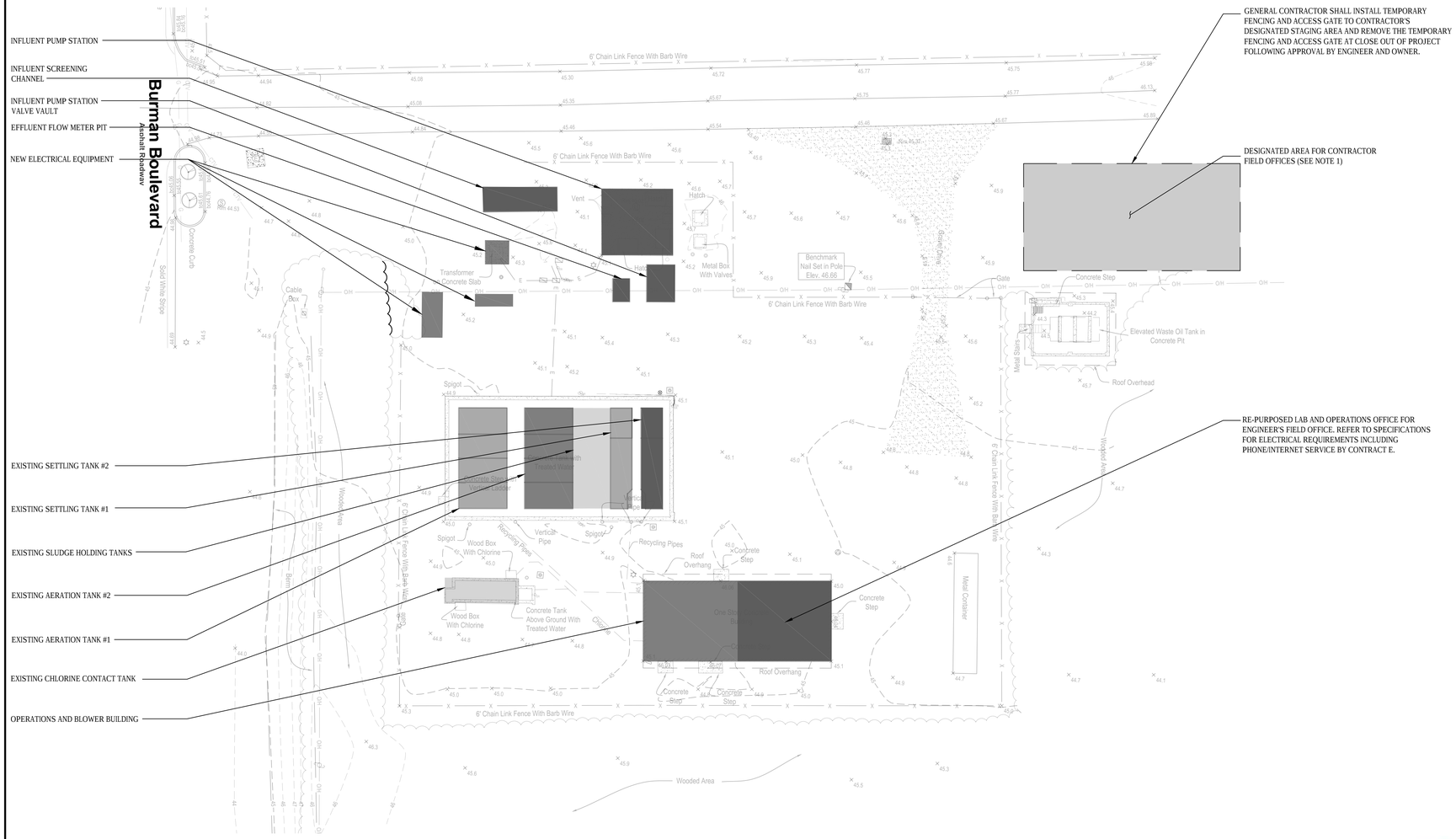

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LEGEND

- PHASE I
- PHASE II
- PHASE III
- PHASE IV
- FIELD OFFICE AND STAGING AREA

SITE STAGING AND INTERIM OPERATION NOTES:

1. STAGING AREA FOR CONTRACTORS SHALL BE COORDINATED WITH OWNER AND INCLUDED ON SITE UTILIZATION PLAN (SUP) PREPARED BY GENERAL CONTRACTOR. STAGING AREA LOCATIONS SHOWN ON THIS SHEET ARE GENERAL AND NOT INDICATIVE OF FINAL LOCATIONS APPROVED BY OWNER.
2. CONTRACTOR SHALL LOCATE FIELD OFFICES IN DESIGNATED AREA SHOWN. EXACT EXTENTS OF AREA SHALL BE COORDINATED IN FIELD AND APPROVED BY OWNER AND ENGINEER PRIOR TO STAGING OF FIELD OFFICES.
3. CONTRACTOR SHALL LEVEL GRADE IN AREAS WHERE OFFICES WILL BE PLACED AND PROVIDE COMPACTED SUB-GRADE TO PREVENT POTENTIAL SETTLEMENT.
4. SITUATE FIELD OFFICES IN LOCATIONS THAT DO NOT REQUIRE THE REMOVAL OF ANY EXISTING TREES AND AS APPROVED BY ENGINEER AND OWNER.
5. TEMPORARY FACILITIES SHALL BE PROVIDED IN ACCORDANCE WITH SPECIFICATIONS.
6. ALL EXISTING PAVEMENTS, DRIVES OR ANY OTHER AREAS USED AS A HAUL ROAD OR STAGING AREA BY ANY CONTRACTOR SHALL BE RESTORED IN-KIND TO THEIR PRE-CONSTRUCTION CONDITION OR TO THE SATISFACTION OF THE OWNER AND ENGINEER. THE COST OF MAINTAINING, REPAIRING, SEEDING/MULCHING OR CONSTRUCTING THESE PAVEMENTS SHALL BE INCIDENTAL TO THE CONTRACT.
7. ON-SITE MOBILIZATION SHALL NOT COMMENCE UNTIL THE SEQUENCING PLAN HAS BEEN APPROVED BY THE OWNER AND ENGINEER.
8. CONTRACTOR VEHICULAR TRAFFIC AND CONSTRUCTION ACTIVITIES SHALL YIELD TO WASTEWATER TREATMENT FACILITY OPERATIONS PERSONNEL, SHOULD IT BE NECESSARY FOR THE CONTRACTOR TO TEMPORARILY RELOCATE EQUIPMENT AT ANYTIME TO ALLOW FOR WASTEWATER TREATMENT FACILITIES OPERATION AND MAINTENANCE, THE CONTRACTOR SHALL DO SO AT NO ADDITIONAL COST TO THE OWNER.
9. WORK PERFORMED BY THE CONTRACTOR OUTSIDE OF DAYLIGHT HOURS SHALL BE PERFORMED UNDER SUFFICIENT ARTIFICIAL LIGHT TO ALLOW FOR PROPER CONSTRUCTION METHODS AND INSPECTIONS. LIGHTING SHALL BE AS APPROVED BY OWNER AND ENGINEER.
10. CONTRACTORS MATERIAL AND EQUIPMENT, WHEN NOT IN USE, SHALL BE STORED IN THE DESIGNATED STAGING AREA. ALL DELIVERIES, EQUIPMENT RE-FUELING, EQUIPMENT MAINTENANCE AND EQUIPMENT TRANSFERS SHALL TAKE PLACE WITHIN THE DESIGNATED STAGING AREA SO AS TO NOT INTERFERE WITH WASTEWATER TREATMENT FACILITY DAILY OPERATIONS.
11. EACH FIELD OFFICE SHALL HAVE A SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES ON-SITE SANITARY DISPOSAL SYSTEM.

SITE SEQUENCING NOTES:

THE FOLLOWING IS A SEQUENCE OF CRITICAL WORK ITEMS THAT MUST BE PERFORMED TO MAINTAIN OPERATION OF THE TREATMENT PROCESS DURING CONSTRUCTION. AT A MINIMUM, CONSTRUCTION PHASING MUST ALLOW FOR THE COMPLETION OF THE MODIFIED INFLUENT PUMP STATION, NEW FINE SCREENING SYSTEMS AND PRE-EQUALIZATION TANK #1/PUMP STATION PRIOR TO THE START OF THE NEW MBR PROCESS SYSTEMS. FOLLOWING SUCCESSFUL STARTUP AND OPERATIONS OF THE NEW MBR PROCESS SYSTEMS, THE EXISTING PROCESS SYSTEMS CAN BE TAKEN OFFLINE TO COMPLETE THE PRE-EQUALIZATION TANK #2, EFFLUENT PUMP STATION AND SLUDGE HOLDING TANKS. ADDITIONAL WORK MAY BE COMPLETED AT ANY TIME, SUBJECT TO REVIEW BY THE OWNER AND ENGINEER. COORDINATE ALL MECHANICAL DEMOLITION WITH DE-ENERGIZATION OF ELECTRICAL COMPONENTS.

PHASE I:

a. EMPTY AND CLEAN AERATION TANK #2 AND SETTLING TANK #2.

b. REMOVE EQUIPMENT FROM CLEANED TANKS.

c. CONVERSION OF EXISTING TANKS.
   1) AERATION TANK #2 TO MBR/ANOXIC TRAINS 1 AND 2.
      a) ADD NEW WALLS AND PIPING.
      b) INSTALL NEW EQUIPMENT IN MBR/ANOXIC TANKS.
   2) SETTLING TANK #2 TO PRE-EQUALIZATION TANK #1 AND PRE-EQUALIZATION PUMP STATION.
      a) ADD NEW WALLS AND PIPING.
      b) INSTALL NEW PUMPS AND AERATION DIFFUSERS.
   3) CONVERSION OF INFLUENT PS
      a) REMOVE PUMP #3 FROM DRY WELL AND PIPING AS NECESSARY TO CREATE NEW WET WELL.
      b) BUILD DIVIDER WALL AND INSTALL NEW WET WELL EQUIPMENT.

d. CONCURRENT WITH CONVERSION OF TANKS, INSTALL NEW SCREENINGS CHANNEL AND NEW DISCHARGE PIPING WITH VALVES IN POSITION TO CONTINUE FLOW TO EXISTING WET WELL.

e. CONVERSION OF OPERATIONS BUILDING, INCLUDING INSTALLATION OF ALL NEW BLOWERS AND PERMEATE PUMPS, WITH TEMPORARY SETUP OF EXISTING BLOWERS TO MAINTAIN EXISTING TREATMENT PROCESS.

f. INSTALL NEW ROTARY DRUM SCREEN #1 WITH SUCCESSFUL STARTUP PRIOR TO DIVERTING FLOW TO NEW INFLUENT WET WELL, AND PRIOR TO STARTUP OF INFLUENT PUMP STATION AND PRE-EQUALIZATION SYSTEMS.

g. COMPLETE INFLUENT PS, SCREENINGS SYSTEM, PRE-EQUALIZATION TANK #1 AND PUMP STATION. THESE SYSTEMS MUST BE ONLINE PRIOR TO INTRODUCING FLOW TO NEW MBR/ANOXIC TANKS.

PHASE II:

a. COMPLETE INSTALLATION AND STARTUP OF ROTARY DRUM SCREEN #2.

b. COMPLETE NEW MBR/ANOXIC SYSTEMS AND PLACE ONLINE.

c. SEND EFFLUENT THROUGH CHLORINE CONTACT TANK TEMPORARILY TO MAINTAIN DISINFECTION BY DIVERTING PERMEATE EFFLUENT PIPING TO EXISTING SETTLING TANK EFFLUENT TROUGH ON EAST SIDE OF PROCESS TANKAGE.

PHASE III:

a. CLEAN AND EMPTY SETTLING TANK #1 AND AERATION TANK #1.

b. CONVERT SETTLING TANK #1 TO EFFLUENT PS AND PRE-EQUALIZATION TANK #2.

c. CONVERT AERATION TANK #1 TO NEW SLUDGE HOLDING TANKS.

d. CONCURRENT TO ALL WORK, THOUGH COMPLETE BEFORE COMPLETION OF EFFLUENT PUMP STATION, INSTALL EFFLUENT FORCE MAIN AND RECHARGE BEDS (CONTRACT S).

e. PLACE NEW EFFLUENT PUMP STATION, SLUDGE HOLDING TANKS, AND PRE-EQUALIZATION TANK #2 ONLINE.

PHASE IV:

a. FINAL DEMOLITION INCLUDING CLEAN AND EMPTY EXISTING SLUDGE HOLDING TANKS AND CHLORINE CONTACT TANK.

b. SITE REHABILITATION.

c. COMPLETE ALL REMAINING CONTRACT WORK.

ELECTRICAL SWITCHOVER:

1. INSTALL OUTDOOR SWITCHGEAR
2. REPLACE UTILITY TRANSFORMER
   a. RUN STP ON EXISTING EMERGENCY GENERATOR UNTIL COMPLETE
3. ENERGIZE NEW OUTDOOR SWITCHGEAR.
   a. TEMPORARY FEEDS TO
      i. INFLUENT PUMP STATION
      ii. EXISTING AERATION BLOWER IN TEMPORARY LOCATION
      iii. EXISTING 120V LOADS WITHIN CONTROL BUILDING
4. BUILD MCC ROOM
5. INSTALL NEW GENSET
6. ENERGIZE NEW MCC AND DISTRIBUTE POWER TO NEW EQUIPMENT
7. REMOVE TEMPORARY SET UPS AND ENERGIZE REMAINING LOADS FROM NEW MCC

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Melville 11 4
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CONSULTANTS:

MARK	DATE	DESCRIPTION

STATE OF NEW YORK — CHRISTOPHER A. WEST — No. 072204 — LICENSED PROFESSIONAL ENGINEER

DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
TMN	TMN/JJF		

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CALVERTON SEWER DISTRICT

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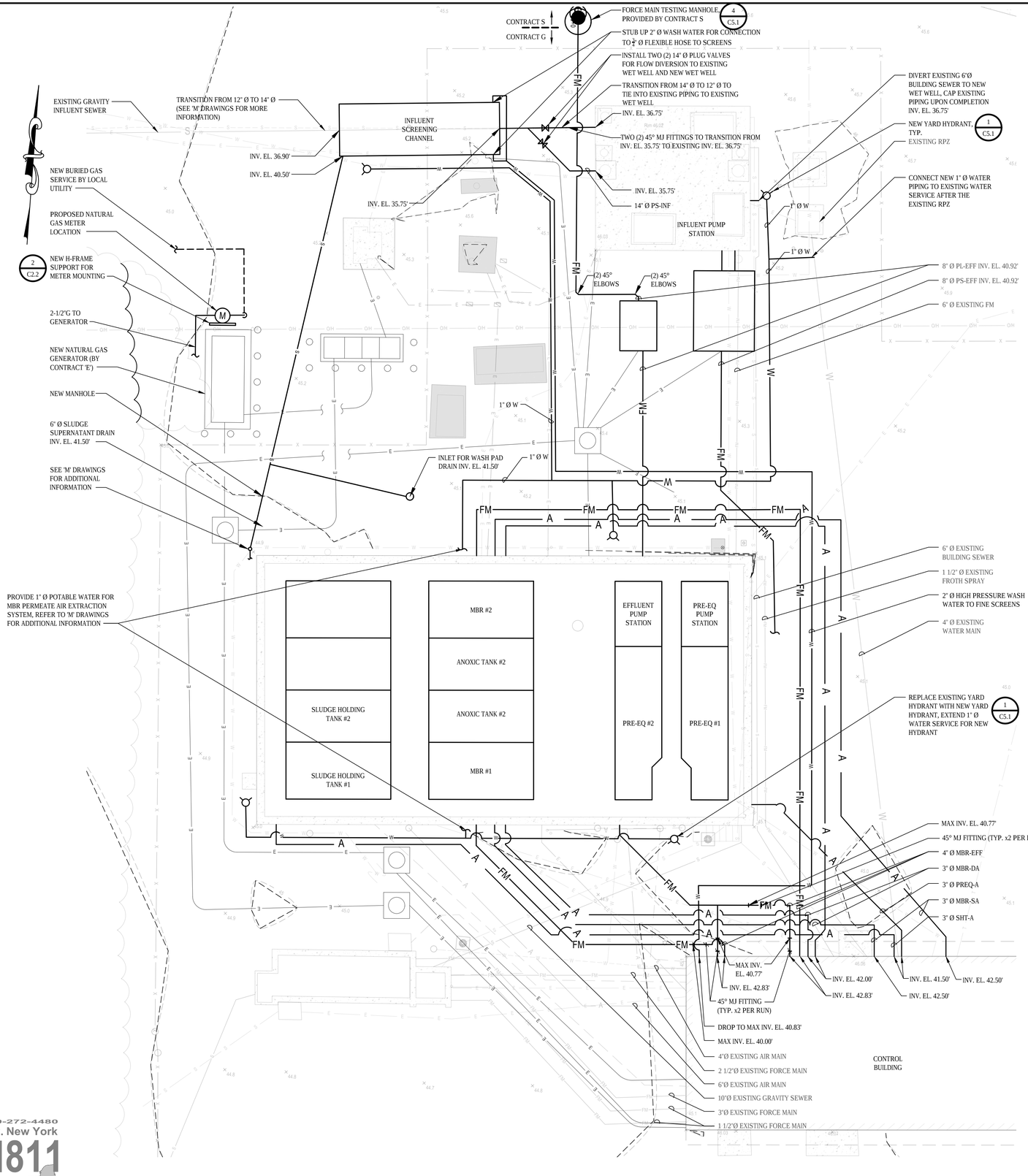

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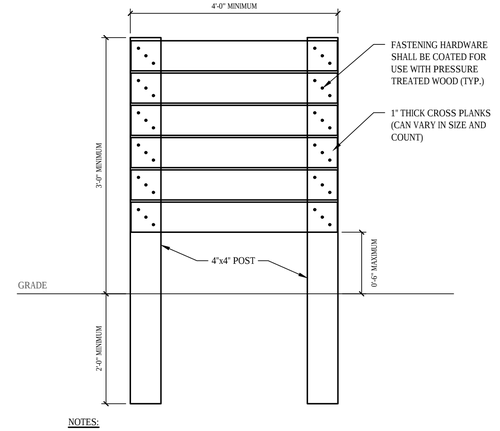
NATURAL GAS SERVICE GENERAL NOTES:

1. PROVIDE NEW GAS HEADER FOR NEW NATURAL GAS METER AT THE LOCATION SHOWN. PROVIDE ALL HEADER PIPING, VALVES, REGULATORS, AND VENT PIPING IN ACCORDANCE WITH THE LOCAL GAS UTILITY REQUIREMENTS. GAS METER SIZE AND HEADER CONFIGURATION SHALL BE COORDINATED WITH LOCAL GAS UTILITY. COORDINATE FINAL LOCATION OF METER WITH OWNER. CONSTRUCT HEADER IN ACCORDANCE WITH ALL LOCAL UTILITY REQUIREMENTS. METER SHALL BE PROVIDED BY THE UTILITY.
2. LOCAL GAS UTILITY TO INSTALL GAS SERVICE FROM STREET MAIN UP TO NEW METER HEADER (INCLUDING NEW REGULATOR). UTILITY WILL SAWCUT, TRENCH, AND BACKFILL AS REQUIRED. CONTRACTOR RESPONSIBLE FOR ALL FINAL RESTORATION WORK INCLUDING ASPHALT, CONCRETE CURBS, SIDEWALKS, AND GRASS AREAS. CONTRACTOR RESPONSIBLE FOR COORDINATING ALL WORK AND FILING ALL APPLICATIONS WITH THE LOCAL UTILITY COMPANY.
3. CONTRACTOR RESPONSIBLE FOR THE INSTALLATION OF ALL "CUSTOMER OWNED" NATURAL GAS PIPING.
4. OWNER WILL PAY FEES CHARGED BY LOCAL UTILITY FOR INSTALLATION OF THE NEW GAS SERVICE AS SPECIFIED IN SPECIFICATION SECTION 012100 - ALLOWANCES.
5. SAW-CUT, TRENCH, BACKFILL, AND RESTORE EXISTING SITE AS REQUIRED FOR INSTALLATION OF "CUSTOMER OWNED" PIPING.
6. OBTAIN A MARK-OUT OF ALL BURIED UTILITIES PRIOR TO THE START OF ANY EXCAVATION WORK.
7. ALL EXTERIOR, ABOVE GROUND GAS PIPING SHALL BE GALVANIZED STEEL.
8. TERMINATE REGULATOR VENT PIPING IN ACCORDANCE WITH THE LOCAL UTILITY'S REQUIREMENTS.
9. PROVIDE SUPPORTS FOR INSTALLATION OF NEW GAS REGULATORS IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL UTILITY COMPANY.

SITE PIPING GENERAL NOTES:

1. ALL BURIED LIQUID PIPING SHALL HAVE A MINIMUM OF 4 FEET OF GROUND COVERAGE, UNLESS OTHERWISE NOTED.
2. ALL EXPOSED LIQUID CARRYING PIPING SHALL BE HEAT TRACED AND INSULATED. CONTRACT G SHALL FURNISH AND INSTALL ALL INSULATION. CONTRACT E SHALL FURNISH AND INSTALL HEAT TRACING OUTLETS AND WIRING.
3. ALL BURIED AIR PIPING SHALL HAVE A MINIMUM OF 2 FEET OF GROUND COVERAGE, UNLESS OTHERWISE NOTED.
4. TEMPORARILY RE-ROUTE EXISTING FORCE MAIN AROUND NEW VALVE VAULT IN ORDER TO KEEP EXISTING INFLUENT PUMP STATION ONLINE PRIOR TO SUCCESSFUL STARTUP OF NEW PUMP STATION.
5. ALL EXISTING GRAVITY SEWER AND FORCE MAIN PIPING APPROXIMATELY AT INV. EL. 41' UNLESS OTHERWISE NOTED.
6. PRESSURE TEST MANHOLE SHALL BE INSTALLED BY CONTRACT S. CONTRACT G TO CONNECT EFFLUENT FORCE MAIN FROM FLOW METER VAULT AFTER THE MANHOLE IS INSTALLED.
7. EXISTING PIPING TO BE ABANDONED IN PLACE UNLESS OTHERWISE NOTED,
8. UNDERGROUND ELECTRIC SHOWN FOR INFORMATION ONLY, TO BE INSTALLED BY CONTRACT E.
9. ALL WORK THIS SHEET SHALL BE WORK UNDER CONTRACT G UNLESS OTHERWISE NOTED.



NOTES:

1. ALL WOOD USED SHALL BE PRESSURE TREATED.

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H2M architects + engineers
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CONSULTANTS:

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ELECTRICAL LEGEND

SYMBOL	DESCRIPTION	COMMENTS
S_3	THREE - WAY SWITCH	46" AFF TO CL UON
S_4	FOUR - WAY SWITCH	46" AFF TO CL UON
S_I	ILLUMINATED SWITCH	46" AFF TO CL UON
S^A	SINGLE POLE SWITCH; "A" INDICATE SWITCH CONTROL	46" AFF TO CL UON
S_D	SINGLE POLE DIMMER SWITCH	46" AFF TO CL UON
S_{3D}	THREE - WAY DIMMER SWITCH	46" AFF TO CL UON
S_K	SINGLE POLE KEYED SWITCH	46" AFF TO CL UON
S_{K3}	KEYED THREE - WAY SWITCH	46" AFF TO CL UON
S_{K4}	KEYED FOUR - WAY SWITCH	46" AFF TO CL UON
S_M	HORSEPOWER RATED SWITCH, WITH INDICATOR (CONTRACTOR SHALL COORDINATE VOLTAGE, PHASE WITH EQUIPMENT)	46" AFF
S_P	SWITCH AND PILOT LIGHT	———
S_T	SWITCH W/ THERMAL OVERLOAD PROTECTION (CONTRACTOR SHALL COORDINATE VOLTAGE, PHASE WITH EQUIPMENT)	———
S_{OS}	OCCUPANCY SENSOR WITH MANUAL OVERRIDE, WALL MOUNT	———
TC	TIME CLOCK	———
PC	PHOTOCELL	———
PB	PUSH BUTTON	———
E,G	EMERGENCY SHUT OFF SWITCH; "E" INDICATES ELECTRICAL; "G" INDICATES GAS	———
OS	OCCUPANCY SENSOR, CEILING MOUNT	———
	OCCUPANCY SENSOR POWER PACK, MOUNTED ABOVE CEILING	———
	2 #12 AWG + #12 AWG GND IN 3/4" E.C. CONCEALED IN WALL OR CEILING	———
	5 #12 AWG + #12 AWG IN 3/4" E.C. CONCEALED IN WALL OR CEILING	———
	3 #12 AWG + #12 AWG GND IN 3/4" E.C. CONCEALED IN OR BELOW SLAB	———
LP1-35	DEDICATED HOMERUN TO PANEL LP1 FOR CIRCUIT No. 35 ONLY.	———
	SIMPLEX RECEPTACLE, 120V, 20A. COORDINATE MOUNTING HEIGHT WITH MECHANICAL CONTRACTOR TO CLEAR BASEBOARDS	FLUSH
	DUPLEX RECEPTACLE, 120V, 20A. COORDINATE MOUNTING HEIGHT WITH MECHANICAL CONTRACTOR TO CLEAR BASEBOARDS	FLUSH
	QUAD RECEPTACLE, DOUBLE DUPLEX RECEPTACLE, 120V, 20A; COORDINATE MOUNTING HEIGHT WITH MECHANICAL CONTRACTOR TO CLEAR BASEBOARDS.	FLUSH
C	DUPLEX RECEPTACLE, 120V, 20A; SUBLETTER "C" INDICATES CEILING MOUNTED	FLUSH
	DUPLEX RECEPTACLE, 120V, 20A; FLOOR MOUNTED.	FLUSH
IG	ISOLATED GROUND DUPLEX RECEPTACLE. COORDINATE MOUNTING HEIGHT WITH MECHANICAL CONTRACTOR TO CLEAR BASEBOARDS.	FLUSH
GFI	DUPLEX RECEPTACLE, 120V, 20A; WITH GROUND FAULT INDICATOR. COORDINATE MOUNTING HEIGHT WITH MECHANICAL CONTRACTOR TO CLEAR BASEBOARDS.	FLUSH
UC	DUPLEX RECEPTACLE, 120V, 20A; SUBLETTER "UC" INDICATES UNDER COUNTER	AS PER ENGINEER
CT	DUPLEX RECEPTACLE, 120V, 20A; SUBLETTER "CT" INDICATES COUNTER TOP	AS PER ENGINEER
WP	DUPLEX RECEPTACLE, 120V, 20A; SUBLETTER "WP" INDICATES WEATHER PROOF	AS PER ENGINEER
40 240	SPECIAL PURPOSE OUTLET, 240V, 40A. VERIFY NEMA CONFIGURATION W.EQUIPMENT MANUFACTURER	AS PER ENGINEER
TL	TWIST LOCK RECEPTACLE, 125V, 20A, 3 WIRE; UNLESS OTHERWISE NOTED	AS PER ENGINEER
	SURFACE RACEWAY WITH 2 GROUNDED + ISOLATED TYPE DUPLEX RECEPTACLES +1 DATA OUTLET PER POSITION, 18" AFF UNLESS OTHERWISE NOTED	
	TELEPHONE/POWER POLE	
S1	MAGNETIC STARTER, S1 ; SEE STARTER SCHEDULE.	
DS1	DISCONNECT SWITCH, DS1; SEE DISCONNECT SWITCH SCHEDULE.	
J	JUNCTION BOX.	
4X	NEMA 4X STAINLESS STEEL JUNCTION BOX WITH GASKETED COVER	
S	J. BOX RECESSED IN WALL W/BLANK COVER. PROVIDE 3/4" E.C & DRAG LINE TO ABOVE FINISHED CEILING. MOUNT 18" AFF, UNLESS OTHERWISE NOTED	
M	FOR MONITOR. J. BOX RECESSED IN WALL W/ BLANK COVER PROVIDE 3/4" E.C. AND DRAG LINE TO ABOVE FINISHED CEILING.	
T1	TRANSFORMER T1, SEE TRANSFORMER SCHEDULE.	
P1	ELECTRICAL PANEL P1, RECESSED; SEE PANEL SCHEDULES.	
P1	ELECTRICAL PANEL P1, SURFACE; SEE PANEL SCHEDULES.	
	CONDUIT GOING DOWN	
	CONDUIT GOING UP	
	PULL BOX	
T	TELEPHONE. PROVIDE 3/4" E.C. W/ DRAG LINE TO AFC & EMPTY BOX RECESSED IN WALL W/BLANK COVER.	18" AFF TO CL UON
TV	CABLE TV. PROVIDE 3/4" E.C. W/ DRAG LINE TO AFC & EMPTY BOX RECESSED IN WALL W/BLANK COVER.	
D	DATA. PROVIDE 3/4" E.C. W/ DRAG LINE TO AFC & EMPTY BOX RECESSED IN WALL W/BLANK COVER.	18" AFF TO CL UON
	COMBINED DATA AND TELEPHONE. PROVIDE 3/4" E.C. W/ DRAG LINE TO AFC & EMPTY BOX RECESSED IN WALL WITH BLANK COVER.	
S	SECURITY CAMERA BOX. PROVIDE 3/4" E.C. W/ DRAG LINE TO AFC & EMPTY BOX RECESSED IN WALL W/BLANK COVER.	

SYMBOL	DESCRIPTION	COMMENTS
AFF	ABOVE FINISHED FLOOR	———
AFC	ABOVE FINISHED CEILING	———
AFG	ABOVE FINISHED GRADE	———
AMP, A	AMPERE	———
ATS	AUTOMATIC TRANSFER SWITCH (SEE TRANSFER SWITCH SCHEDULE)	———
AWG	AMERICAN WIRE GUAGE	———
BFC	BELOW FINISHED CEILING	———
CL	CENTERLINE	———
CT	COUNTER TOP	———
EC	RIGID GALVANIZED STEEL ELECTRICAL CONDUIT	———
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	———
GFI	GROUND FAULT INDICATOR	———
LIPA	LONG ISLAND POWER AUTHORITY (LOCAL ELECTRIC UTILITY)	———
MCB	MAIN CIRCUIT BREAKER	———
MLO	MAIN LUGS ONLY	———
UON	UNLESS OTHERWISE NOTED	———
UC	UNDER COUNTER	———
V	VOLT	———
VAC	VOLTS ALTERNATING CURRENT	———
VDC	VOLTS DIRECT CURRENT	———
X-FMR	TRANSFORMER	———
WP	WEATHER PROOF	———

SYMBOLS LEGEND

- 102 — ROOM DESIGNATION
- 5 / A2.2 — BUILDING SECTION CUT
- 5 / A2.2 — WALL SECTION CUT
- 5 / A2.2 — DETAIL KEY
- 5 / A2.2 — ELEVATION KEY
- H — COLUMN GRID
- ELEVATION LINE
- 1 TITLE SCALE — DRAWING TITLE
- 4, 3, 5 / A2.2, 1, 2 — INTERIOR ELEVATION REFERENCE
- # / # — SEE NOTE # ON DWG. #

SINGLE LINE DIAGRAM LEGEND

SYMBOL	DESCRIPTION	COMMENTS
T	LINE VOLTAGE THERMOSTAT 120V, 10A	———
	CIRCUIT BREAKER WITH TRIP & POLES AS NOTED	———
TS1	TRANSFER SWITCH TS1 (SEE TRANSFER SWITCH SCHEDULE)	———
30/2 MCB P1	DISTRIBUTION PANEL P1 W/30A, 2 POLE M.C.B. (SEE DISTRIBUTION PANEL SCHEDULE)	———
DS1 100/2	DISCONNECT SWITCH DS1, 100A, 2 POLE (SEE DISCONNECT SWITCH SCHEDULE)	———
DS2 40/3	FUSED DISCONNECT SWITCH DS2, FUSED AT 40 AMPS, 3 POLES (SEE DISCONNECT SWITCH SCHEDULE)	———
G1	GENERATOR SET G1	———
M	ELECTRIC METER AND METER PAN AS PER LIPA REQUIREMENTS	———
5	MOTOR, NUMBER INDICATES HORSEPOWER	———
CTS	CURRENT TRANSFORMERS	———
PTS	VOLTAGE TRANSFORMERS	———
	TRANSFORMER WITH SIZE, PRIMARY & SECONDARY VOLTAGES AS NOTED.	———
RVRM 10	REDUCED VOLTAGE SOLID STATE RAMPING MODULE, SIZED FOR 10 H.P.	———
RVSS 150	REDUCED VOLTAGE SOLID STATE STARTER, SIZED FOR 150 H.P.	———
VFD 25	VARIABLE FREQUENCY DRIVE, RATED FOR 25 H.P.	———
FVNR 6	FULL VOLTAGE NON-REVERSING STARTER, NEMA SIZE 6.	———
FVR 5	FULL VOLTAGE REVERSING STARTER, NEMA SIZE 5	———
JJS	FAST ACTING SOLID STATE FUSES SIZED AS PER MANUFACTURER	———
	MULTIPLE BRANCH CIRCUITS AS REQUIRED	———
	CONTROL CIRCUIT (MIN. 2 #12 AWG IN 3/4" E.C.)	———
LNR	LINE	———
LDR	LOAD	———
DVID	MOTOR	———

ELECTRICAL CONTROL LEGEND

SYMBOL	DESCRIPTION	COMMENTS
	PUMP OR BLOWER	———
	FLOW	———
M	MOTOR CONTROLLED VALVE WITH LIMIT	———
LS	LIMIT	———
FT	FLOW	———
FS	FLOW	———
PT	PRESSURE	———
PS	PRESSURE	———
LT	LEVEL	———
LE	LEVEL ELECTRODES	———
DP	DIFFERENTIAL PRESSURE	———
SV	SOLENOID	———
	PITOT TUBE & AIR PRESSURE	———
TLDS	TELEPHONE LINE DISCONNECT	———
PID	PROPORTIONAL- INTEGRAL-DERIVATIVE SINGLE LOOP	———
SC TP A	SIGNAL CONDITIONER TIME PULSE DURATION TO	———
LS	HIGH WATER LEVEL	———

SITE PLAN LEGEND (SIZE INDICATED ON PLANS)

- ——— - CURB
- G - EXISTING NATURAL GAS SERVICE
- S - EXISTING SEWER SERVICE
- W - EXISTING WATER SERVICE
- T - EXISTING TELEPHONE SERVICE
- T - NEW TELEPHONE SERVICE
- E - EXISTING ELECTRIC LINES
- E - NEW ELECTRIC LINES
- PE - EXISTING PRIMARY ELECTRIC SERVICE
- PE - NEW PRIMARY ELECTRIC SERVICE
- O/H-ELEC - EXISTING OVERHEAD ELECTRIC LINES
- X - EXISTING FENCE
- ▣ - NEW ELECTRIC PULL BOX

H2M architects + engineers

538 Broad Hollow Road, 4th Floor
East
Melville, NY 11747

CONSULTANTS:

MARK	DATE	DESCRIPTION

STATE OF NEW YORK — JEFFREY L. CZAJKA — No. 073522-1 — LICENSED PROFESSIONAL ENGINEER

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VLV	VLV/CJD		JLC

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Town of Riverhead Calverton Sewer District

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TOWN OF RIVERHEAD 1792 — PAX ET PROSPERITAS — PER PROGRESSUM

CONTRACT

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ELECTRICAL CONSTRUCTION

STATUS

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SHEET TITLE

ELECTRICAL LEGENDS

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SHEET # 17 OF 35

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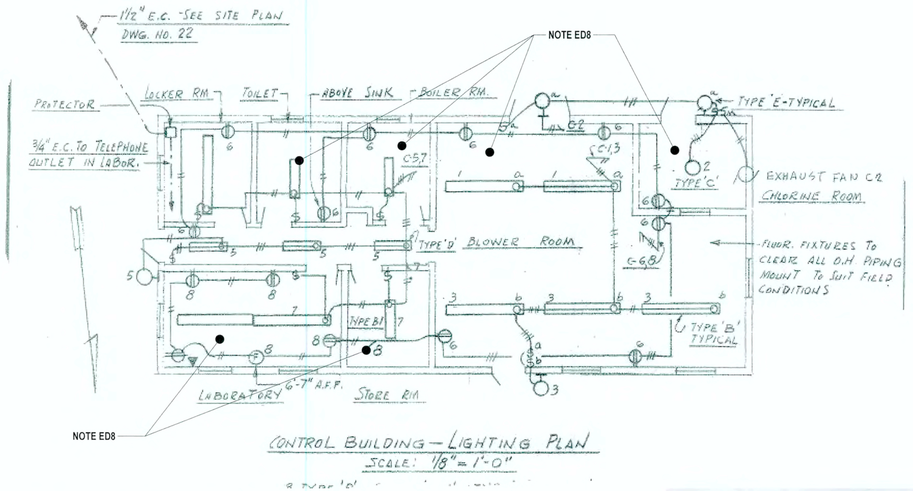
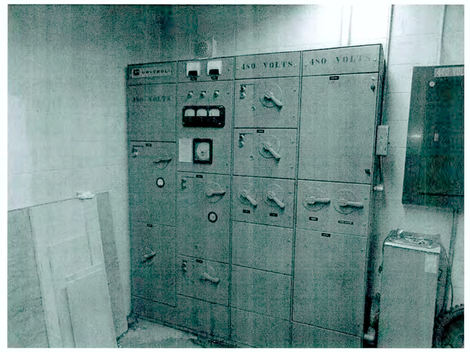
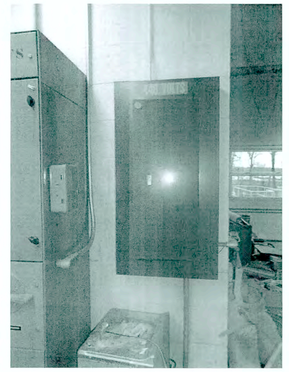


1 **Control Building Lighting Plan**
SCALE N.T.S



2 **Existing MCC (Note ED4)**
SCALE N.T.S

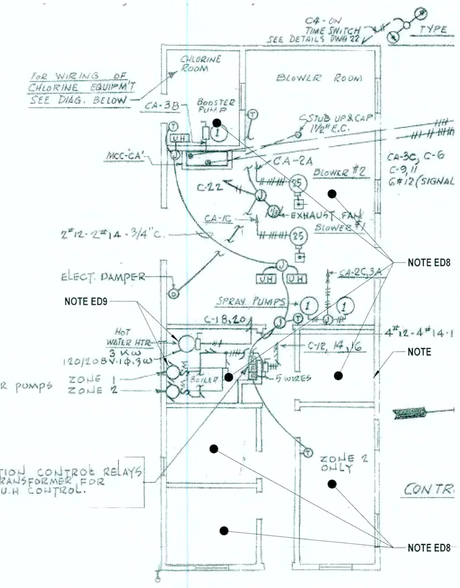


3 **Existing 480V Distribution Panel (Note ED5)**
SCALE N.T.S

5 **Existing Main Service Disconnect Switch and ATS (Note ED6)**
SCALE N.T.S

6 **Existing Main Distribution Panel (Note ED6)**
SCALE N.T.S

7 **Existing Trans-S CT/Meter Cabinet (Note ED6)**
SCALE N.T.S



4 **Control Building Power Plan**
SCALE N.T.S

LEGEND:

= TO BE REMOVED

DEMOLITION GENERAL NOTES:

ED1. REMOVE AND DISPOSE OF INCLUDES REMOVAL OF ITEM IDENTIFIED INCLUDING ALL CONDUITS, WIRES, AND CABLES, BACK TO SOURCE UNLESS OTHERWISE NOTED.

ED2. MAINTAIN CIRCUIT CONTINUITY FOR ALL EXISTING DEVICES ON A CIRCUIT WHEN THE DRAWINGS CALL FOR REMOVAL AND/OR DISPOSAL OF A DEVICE ON THAT CIRCUIT.

ED3. ALL CONDUITS SPECIFIED TO BE REMOVED SHALL BE CUT FLUSH WITH THE SURFACE AND SURFACE SHALL BE PATCHED UNLESS OTHERWISE NOTED. SURFACE SHALL BE PRIMED AND PAINTED TO MATCH EXISTING.

ED4. REMOVE AND DISPOSE OF EXISTING MCC AND ALL ASSOCIATED CONDUIT, WIRE, AND CABLE BACK TO SOURCE UNLESS OTHERWISE NOTED. REFEED EXISTING LOADS FROM EXISTING 120/208V THAT ARE TO REMAIN FROM NEW PANEL PP1. CONTRACTOR SHALL EXTEND EXISTING WIRING AND CONDUIT AS REQUIRED. CONTRACTOR SHALL COORDINATE WITH ENGINEER.

ED5. REMOVE AND DISPOSE OF EXISTING 480V DISTRIBUTION PANEL AND ALL ASSOCIATED CONDUIT, WIRE, AND CABLE BACK TO SOURCE UNLESS OTHERWISE NOTED.

ED6. REMOVE AND DISPOSE OF EXISTING MAIN DISTRIBUTION PANEL, MAIN SERVICE DISCONNECT SWITCH, AUTOMATIC TRANSFER SWITCH, AND EXISTING TRANS-S CT/METER CABINET AND ALL ASSOCIATED CONDUIT, WIRE, AND CABLE BACK TO SOURCE UNLESS OTHERWISE NOTED.

ED7. REMOVE AND TURN OVER TO OWNER THE EXISTING GENERATOR AND EXISTING GENERATOR FUEL TANK. REMOVE AND DISPOSE OF ALL ASSOCIATED CONDUIT, WIRE, CONCRETE FOUNDATION PAD AND CABLE BACK TO SOURCE UNLESS OTHERWISE NOTED. COORDINATE WITH OWNER FOR DELIVERY LOCATION.

ED8. REMOVE AND DISPOSE OF ALL EXISTING LIGHT FIXTURES AND ELECTRICAL DEVICES WITHIN THE INDICATED ROOM LOCATION. REMOVE AND DISPOSE OF ALL ASSOCIATED CONDUIT, WIRES AND CABLES BACK TO SOURCE UNLESS OTHERWISE NOTED.

ED9. REFEED EXISTING HOT WATER HEATER, BOILER AND ASSOCIATED RE-CIRCULATION PUMPS FROM NEW PANEL PP1. PROVIDE NEW WIRING AND CONDUIT. PROVIDE NEW BREAKER SIZED AS PER NEC.

ED10. EXISTING TELEPHONE LINES AND TERMINAL BOX, AND ALARM PANELS SHALL REMAIN.

8 **Existing Generator (Note ED7)**
SCALE N.T.S

9 **Existing Generator Fuel Tank (Note ED7)**
SCALE N.T.S

H2M architects + engineers
538 Broad Hollow Road, 4th Floor
East
Melville, NY 11747

CONSULTANTS:

MARK	DATE	DESCRIPTION

STATE OF NEW YORK
JEFFREY L. CZAJKA
No. 073522
LICENSED PROFESSIONAL ENGINEER

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DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
VLV	VLV/CJD		JC

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CASD 1602	November 2018	AS SHOWN

CLIENT

Town of Riverhead Calverton Sewer District

Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

TOWN OF RIVERHEAD 1792 — PAX TI PROSPERITAS, PER PROGRESSUM

CONTRACT
CONTRACT E
ELECTRICAL CONSTRUCTION

STATUS
FINAL BID DOCUMENT

SHEET TITLE
ELECTRICAL DEMOLITION PLAN

DRAWING # **E1.0**

SHEET # 18 OF 35

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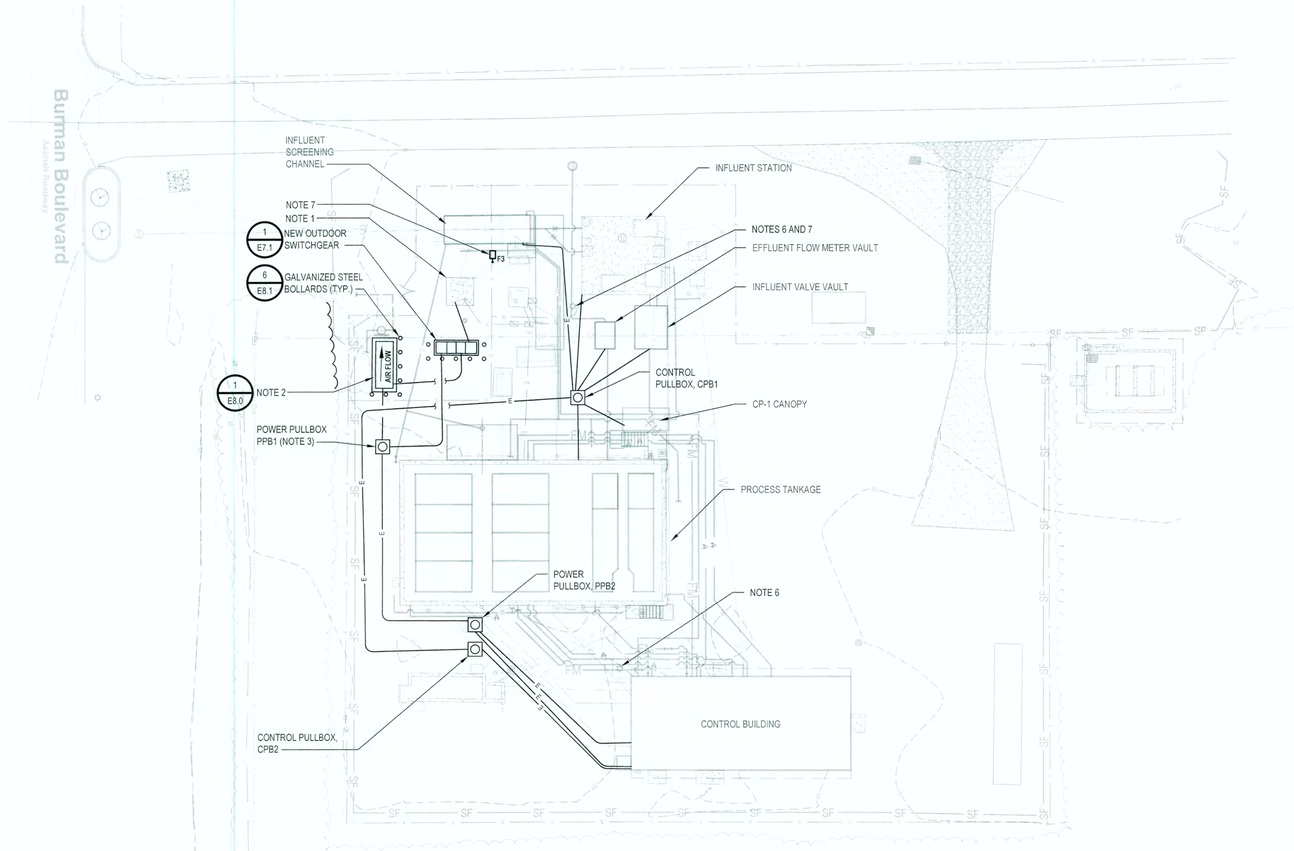

1 **Electrical Site Plan**
SCALE:NTS

ELECTRICAL SITE PLAN GENERAL NOTES:

G1. INSPECT CONSTRUCTION SITE PRIOR TO SUBMISSION OF BIDS AND SHALL MAKE NO ADDITIONAL CLAIMS REGARDING SITE CONDITIONS THEREAFTER.
G2. LOCATION OF ALL UNDERGROUND UTILITIES BOTH PUBLIC AND CUSTOMER OWNED, WERE OBTAINED FROM EITHER MAPS, SURVEYS, DRAWINGS AND RECORDS SUPPLIED BY OTHERS. THE OWNER AND ENGINEER DO NOT GUARANTEE OR ACCEPT RESPONSIBILITY FOR ANY DAMAGE TO SUCH FACILITIES DUE TO DISCREPANCIES IN LOCATION AND SIZE SHOWN ON THE PLANS OR THOSE UTILITIES NOT SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A PRIVATE MARKOUT COMPANY FOR DETERMINING THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING WORK. CONTRACTOR SHALL LOCATE ALL UTILITIES WITHIN PROXIMITY OF CONSTRUCTION LIMITS.
G3. COMPLETELY RESTORE ALL AREAS DISTURBED DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO GRASS AREAS, LANDSCAPING, PAVEMENTS, SIDEWALKS, CURBING AND IN-GROUND SPRINKLER SYSTEMS.
G4. PERFORM DAILY CLEAN-UP OPERATIONS WHICH INCLUDE REMOVAL OF DEBRIS AND EXCESS CONSTRUCTION MATERIAL TO THE SATISFACTION OF THE OWNER AND THE ENGINEER.
G5. DURING ALL NON-WORKING HOURS, THE CONTRACTOR WILL BE REQUIRED TO STORE ALL EQUIPMENT AND MATERIALS WITHIN THE AREA DESIGNATED BY THE ENGINEER AT THE PROJECT SITE.
G6. PROVIDE TEMPORARY FENCING TO PROTECT WORK AREAS.

ELECTRICAL SITE PLAN KEY NOTES:

1. NEW TRANSFORMER PAD/PULL BOX IN ACCORDANCE WITH UTILITY REQUIREMENTS.
2. NEW GENERATOR AND CONCRETE FOUNDATION.
3. NEW PULL BOX. SITE PLAN SHOWS MINIMUM REQUIRED PULL BOXES. PROVIDE ADDITIONAL PULL BOXES AS REQUIRED BY NEC AND UTILITY SERVICE.
4. STUB ALL CONDUITS INTO BUILDINGS BELOW GRADE. NO EXTERIOR CONDUITS PERMITTED TO RUN EXPOSED ON EXTERIOR WALLS. SAW-CUT FLOOR AND CORE DRILL FOUNDATIONS AS REQUIRED. SEAL ALL CONDUIT PENETRATIONS WITH NON-SHRINK GROUT. RESTORE ALL FLOOR FINISHES WITH NEW CONCRETE. RESTORE FLOOR FINISHED TO MATCH EXISTING.
5. INSTALL LINK SEALS FOR EXTERIOR CONDUITS ENTERING BUILDINGS AND DUCT SEAL ON INTERIOR OF CONDUIT TO SEAL WATER FROM ENTERING BUILDING.
6. RE-FEED ALL EXISTING SITE LIGHTING FROM NEW PANEL PP1. CONTRACTOR SHALL EXTEND EXISTING WIRING AND CONDUIT AS REQUIRED.
7. PROVIDE NEW POLE MOUNTED FIXTURE TO BE TIED TO EXISTING POLE LIGHT CIRCUIT. CONTRACTOR SHALL FIELD VERIFY VOLTAGE OF EXISTING POLE LIGHT FIXTURE AND EXISTING EXTERIOR LIGHTING CIRCUIT PRIOR TO ORDERING NEW FIXTURE.

H2M architects + engineers
538 Broad Hollow Road, 4th Floor East
Melville, NY 11747
631.756.8000 • www.h2m.com

CONSULTANTS:

MARK	DATE	DESCRIPTION

STATE OF NEW YORK
JEFFREY L. CZAJKA
No. 073522-1
LICENSED PROFESSIONAL ENGINEER

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CALVERTON SEWER DISTRICT

Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

TOWN OF RIVERHEAD 1792 VALET PROSPERITAS PER PROGRESSUM

Suffolk County, NY

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ELECTRICAL CONSTRUCTION

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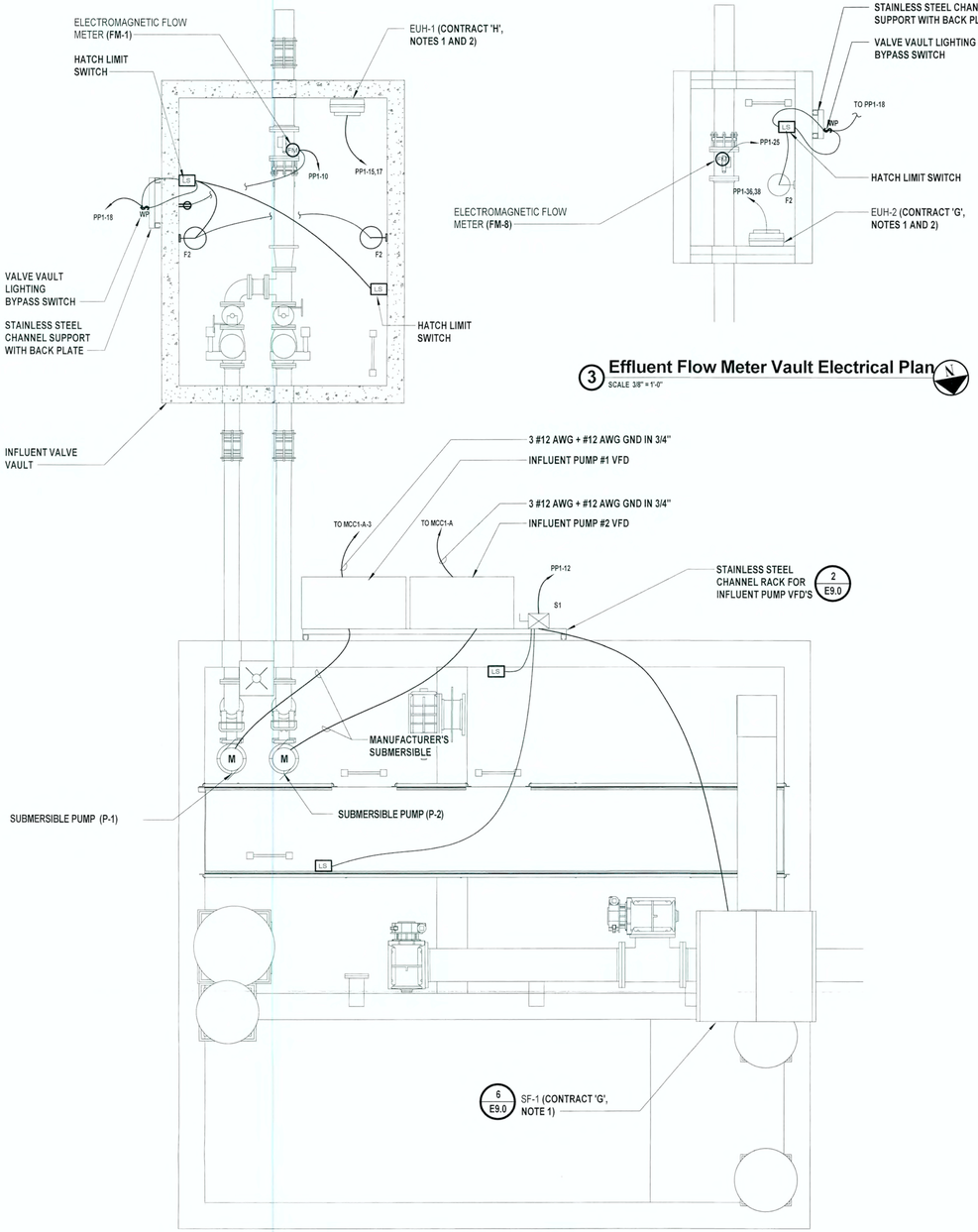
ELECTRICAL SITE PLAN

DRAWING No.
E2.0

SHEET No.
19 OF 35

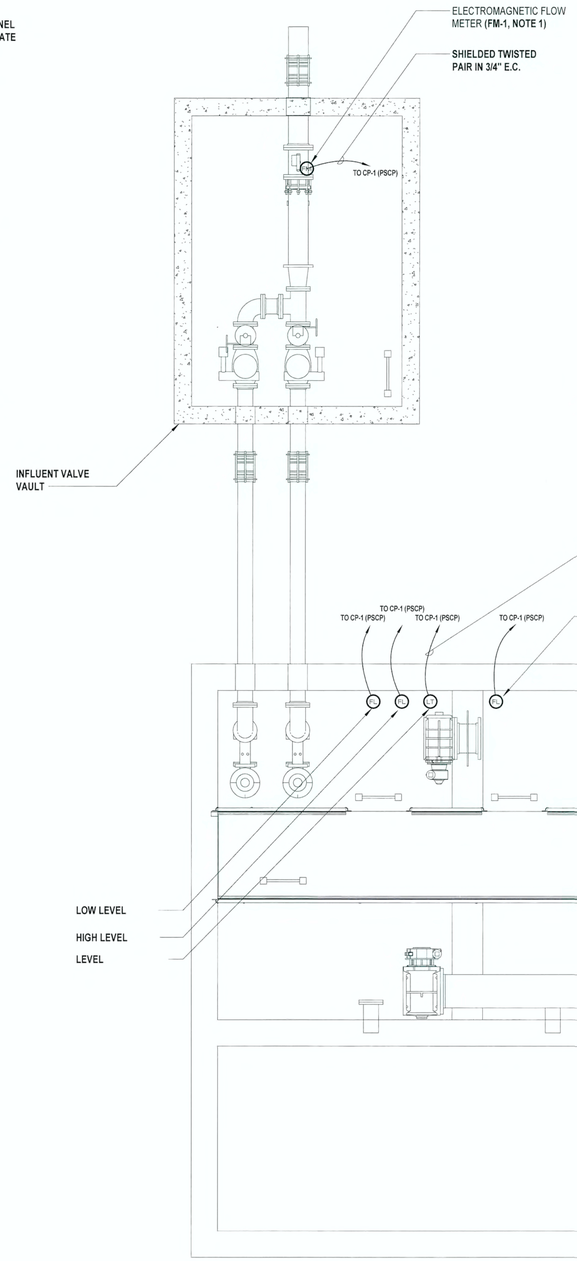


1 Influent Pump Station Electrical Power and Lighting Plan

SCALE 3/8" = 1'-0"

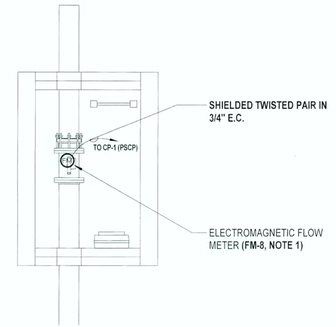
3 Effluent Flow Meter Vault Electrical Plan

SCALE 3/8" = 1'-0"



2 Influent Pump Station Below Slab Electrical Control Plan

SCALE 3/8" = 1'-0"



4 Effluent Flow Meter Vault Electrical Control Plan

SCALE 3/8" = 1'-0"

NOTES:

1. DISCONNECT SWITCH INTEGRAL TO UNIT PROVIDED BY MANUFACTUER. CONTRACTOR IS RESPONSIBLE TO INSTALL/INTEGRATE WITH UNIT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. THERMOSTAT INTEGRAL TO UNIT PROVIDED BY MANUFACTUER. CONTRACTOR IS RESPONSIBLE TO INSTALL/INTEGRATE WITH UNIT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. CONTRACTOR SHALL COORDINATE WITH MECHANICAL EQUIPMENT INSTALLER FOR EXACT LOCATION AND MOUNTING HEIGHT OF EQUIPMENT.

NOTE:

1. FLOW METER FURNISHED AND INSTALLED BY CONTRACT 'G' AND WIRED BY CONTRACT 'E'.

H2M architects + engineers
538 Broad Hollow Road, 4th Floor
East
Melville, NY 11747

CONSULTANTS:

MARK	DATE	DESCRIPTION

STATE OF NEW YORK ★ JEFFREY L. CZAJKA ★ No. 073522-1 ★ LICENSED PROFESSIONAL ENGINEER ★

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TOWN OF RIVERHEAD 1792 PAX ET PROSPERITAS ET PER PROGRESSUM

CONTRACT

CONTRACT E
ELECTRICAL CONSTRUCTION

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SHEET TITLE

INFLUENT PUMP STATION ELECTRICAL POWER PLAN

DRAWING # **E3.0**

SHEET # 20 OF 35

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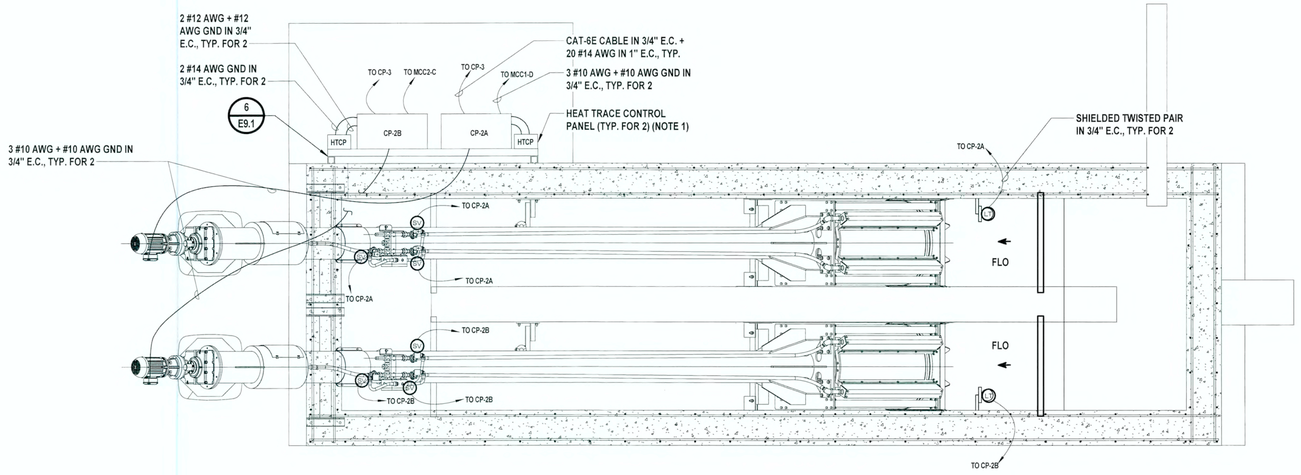

1 Headworks Channel with Drum Screen Power and Control Plan

SCALE 1/2" = 1'-0"

NOTES:

1. HEAT TRACING FOR SCREEN COMPONENTS SUPPLIED BY CONTRACT 'G'. HEAT TRACING FOR WATER SUPPLY PIPING SHALL BE FURNISHED BY CONTRACT 'E'.

H2M architects + engineers

538 Broad Hollow Road, 4th Floor
East
Melville, NY 11747

CONSULTANTS:

MARK	DATE	DESCRIPTION

STATE OF NEW YORK
JEFFREY L. CZAJKA
No. 073522
LICENSED PROFESSIONAL ENGINEER

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INFLUENT PUMP STATION SCREENING ASSEMBLY POWER AND CONTROL PLAN

DRAWING # **E3.1**

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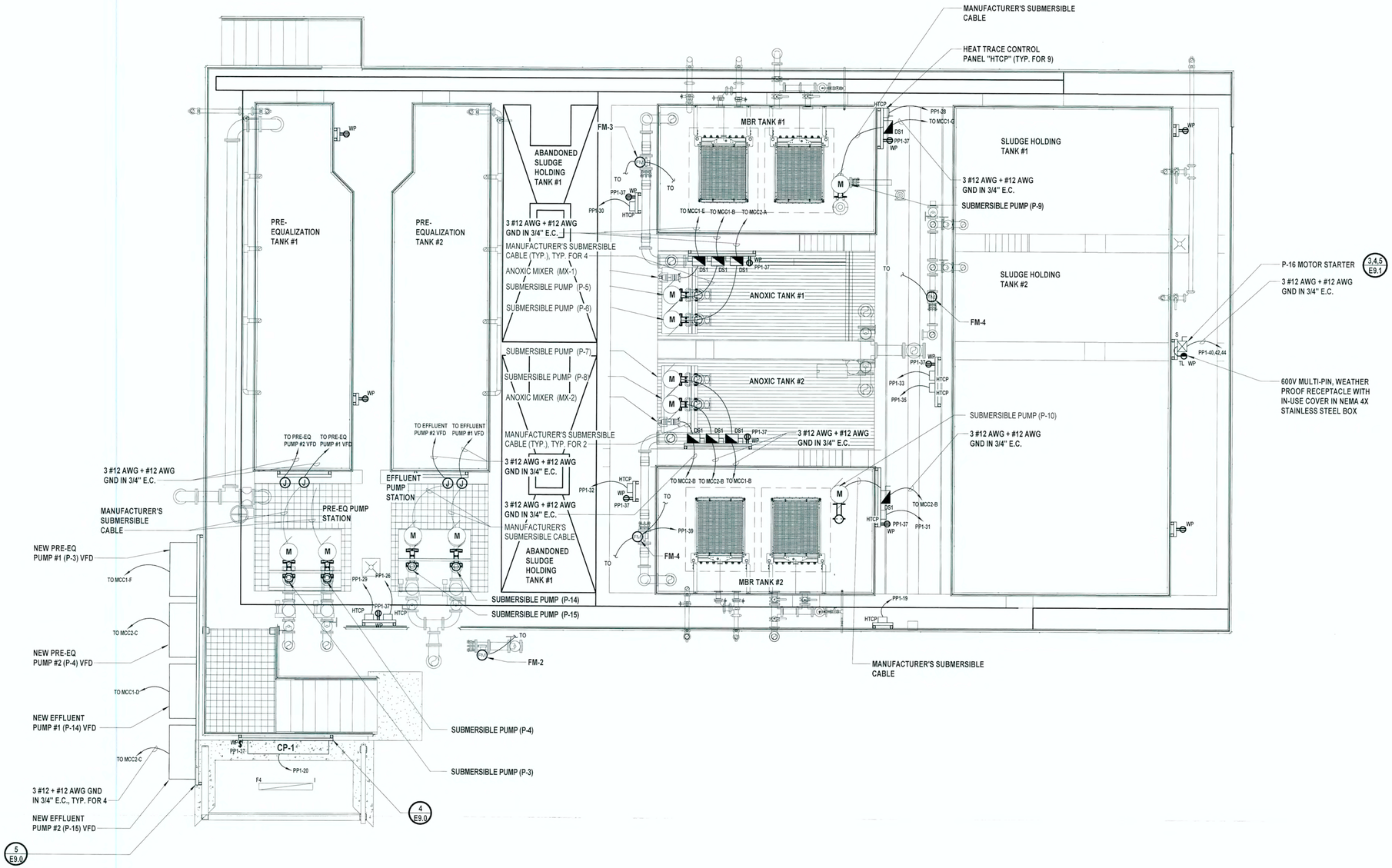

1 Process Tank Electrical Power Plan

SCALE 1/4" = 1'-0"

H2M architects + engineers

538 Broad Hollow Road, 4th Floor
East
Melville, NY 11747

CONSULTANTS:

MARK	DATE	DESCRIPTION

STATE OF NEW YORK
JEFFREY L. CZAJKA
LICENSED PROFESSIONAL ENGINEER
NO. 073522-1

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CASD 1602	November 2018	AS SHOWN

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Town of Riverhead Calverton Sewer District

Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

TOWN OF RIVERHEAD 1792 "PAX ET PROSPERITAS" "PER PROGRESSUM"

CONTRACT

CONTRACT E
ELECTRICAL CONSTRUCTION

STATUS

FINAL BID DOCUMENT

SHEET TITLE

PROCESS TANK ELECTRICAL POWER PLAN

DRAWING # **E4.0**

SHEET # 22 OF 35

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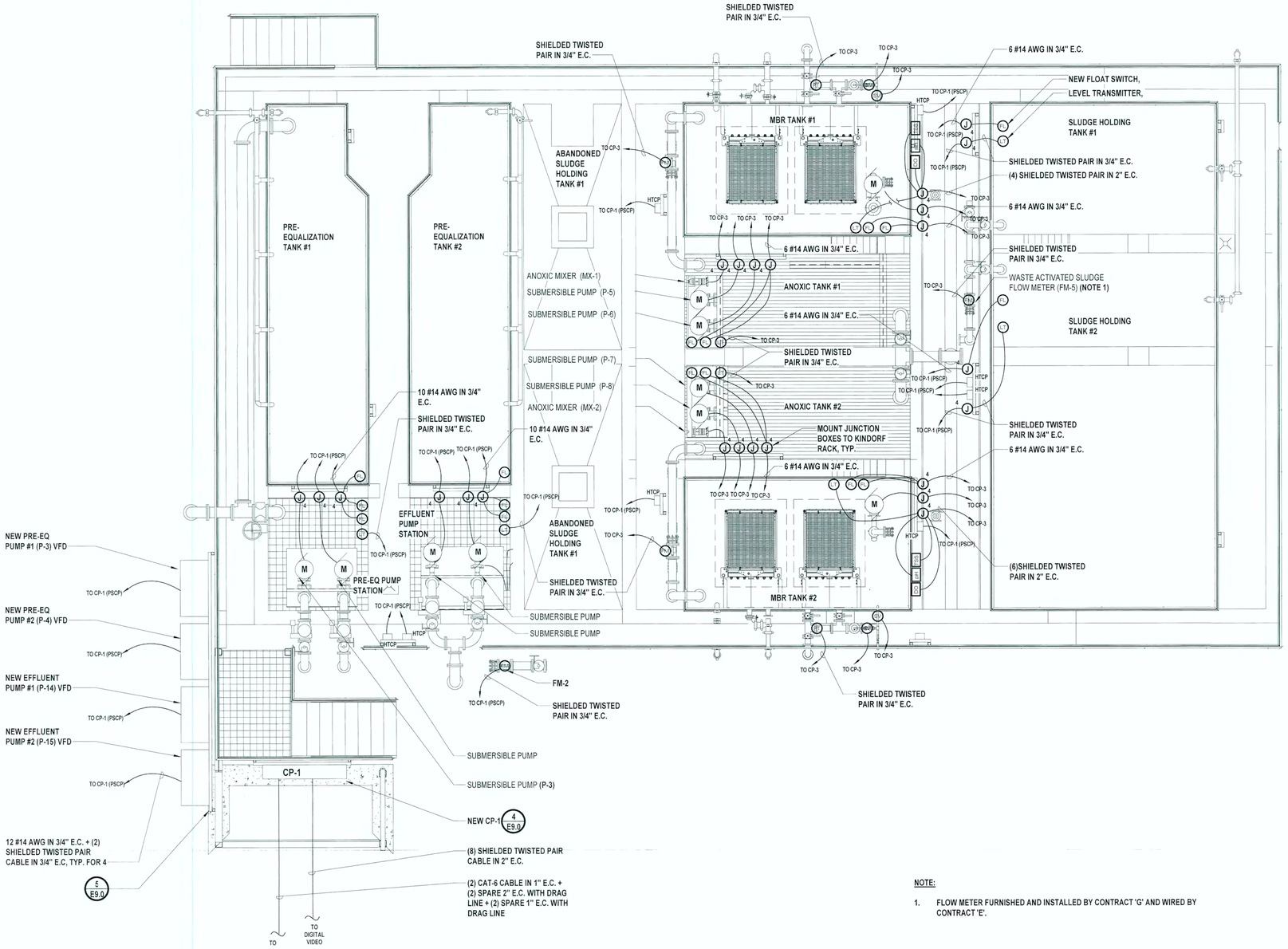

1 Process Tank Electrical Control Plan

SCALE 1/4" = 1'-0"

NOTE:

1. FLOW METER FURNISHED AND INSTALLED BY CONTRACT 'G' AND WIRED BY CONTRACT 'E'.

H2M architects + engineers

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East
Melville, NY 11747

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JEFFREY L. CZAJKA
No. 073522-1
LICENSED PROFESSIONAL ENGINEER

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TOWN OF RIVERHEAD 1792 QUO ET PROSPERITAS PER PROGRESSUM

CONTRACT

CONTRACT E
ELECTRICAL CONSTRUCTION

STATUS

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SHEET TITLE

PROCESS TANK ELECTRICAL CONTROL PLAN

DRAWING #

E4.1

SHEET # 23 OF 35

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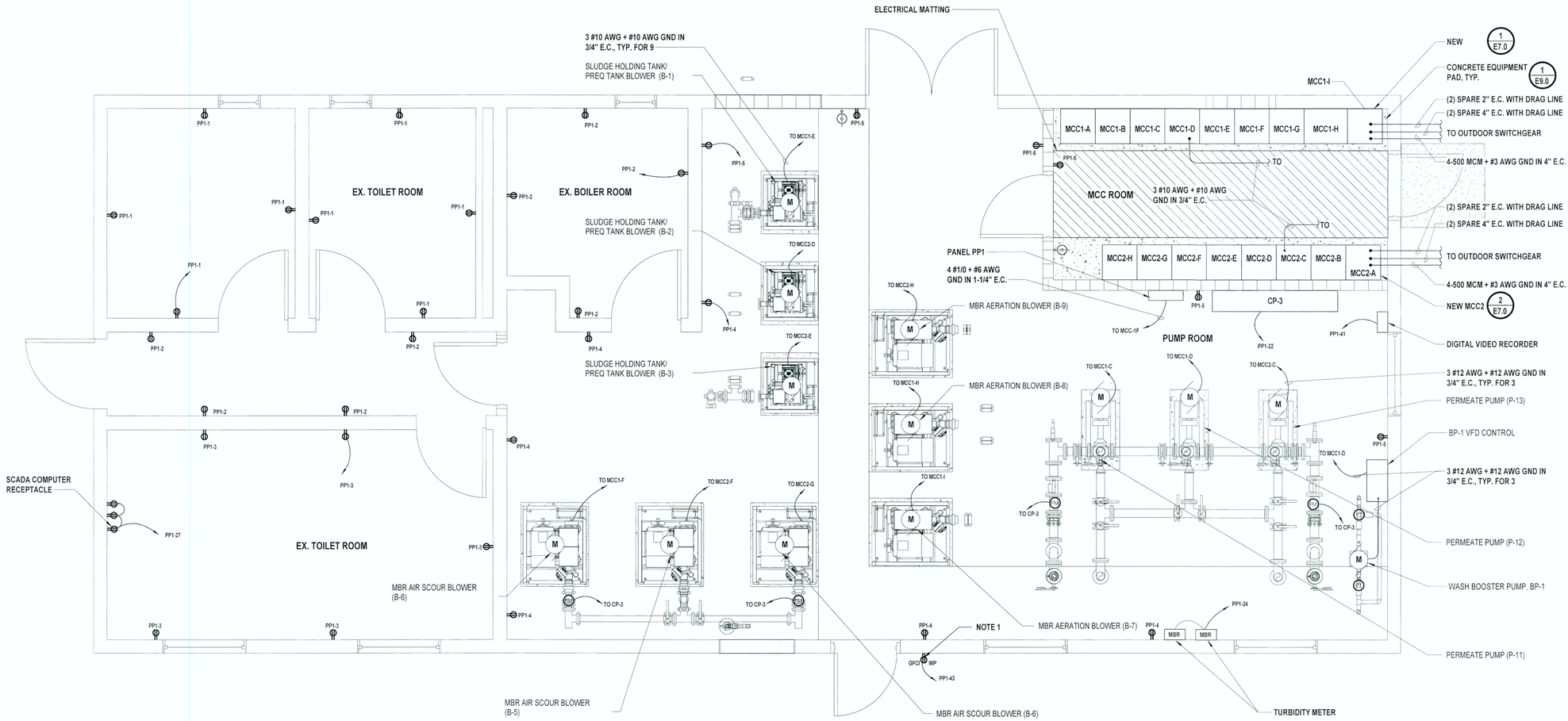

1 Control Building First Floor Electrical Power Plan

SCALE 3/8" = 1'-0"

NOTES:

1. EXTERIOR RECEPTACLES SHALL BE PROVIDED WITH A WEATHERPROOF IN-USE COVER.

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East
Melville, NY 11747

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Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

CONTRACT

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STATUS

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SHEET TITLE

CONTROL BUILDING ELECTRICAL POWER PLAN

DRAWING #	SHEET #
E5.0	24 OF 35

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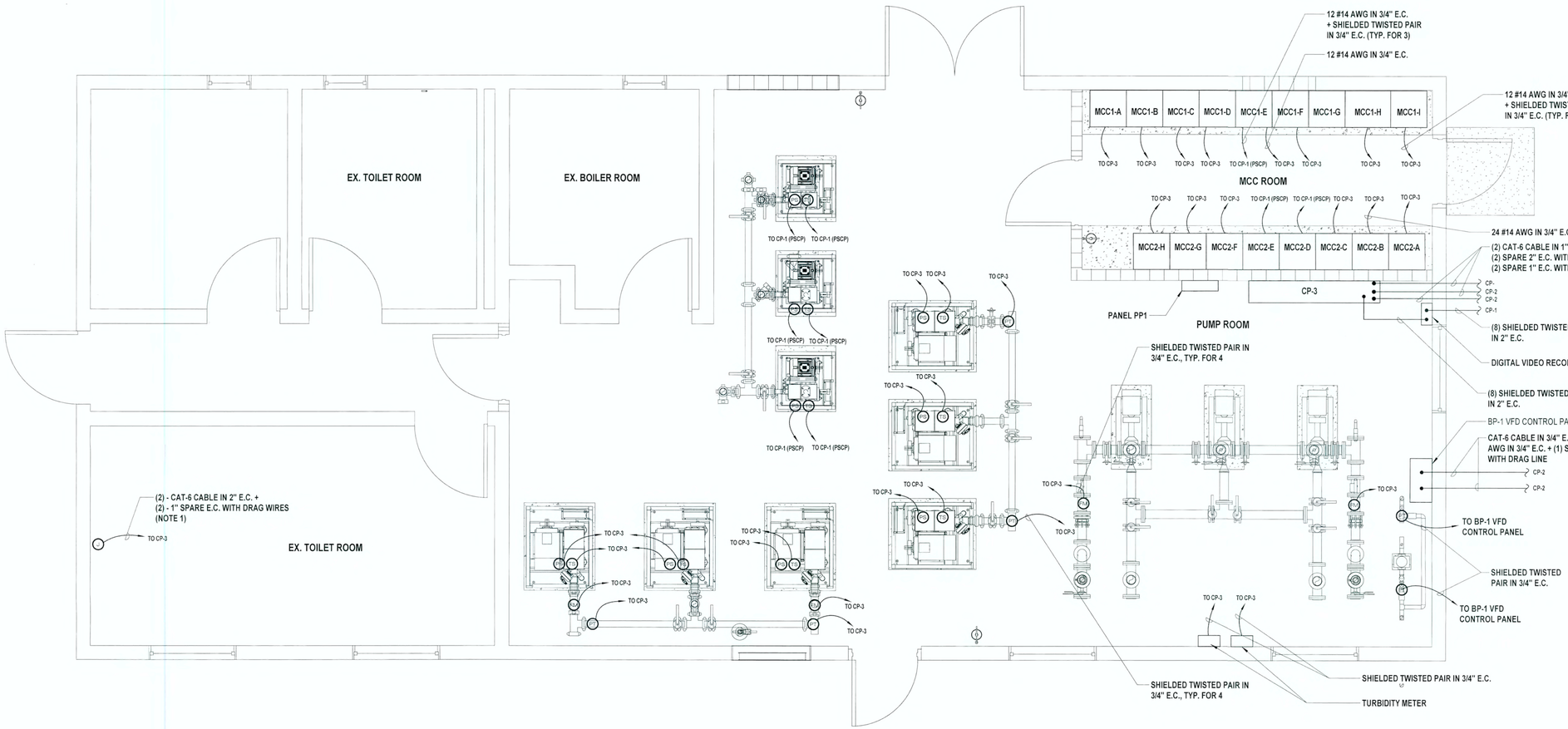

1 Control Building First Floor Electrical Control Plan

SCALE 3/8" = 1'-0"

NOTES:

1. PROVIDE CAT-6 CABLE WITH 15' OF SLACK FOR THE SCADA ROOM COMPUTER IN JUNCTION BOX.

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East
Melville, NY 11747

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STATE OF NEW YORK
JEFFREY L. OZAKA
No. 073522-1
LICENSED PROFESSIONAL ENGINEER

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TOWN OF RIVERHEAD 1792 PAX ET PROSPERITAS PER PROGRESSUM

CONTRACT

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STATUS

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SHEET TITLE

CONTROL BUILDING ELECTRICAL CONTROL PLAN

DRAWING # **E5.1**

SHEET # 25 OF 35

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LIGHTING GENERAL

G1. PROVIDE ALL REQUIRED WIRING NECESSARY BETWEEN SWITCHES, CONTROLLERS, AND/OR OCCUPANY SENSORS FOR COMPLETE LIGHTING CONTROL. WHERE 3 OR 4 WAY SWITCHES ARE USED, PROVIDE ALL REQUIRED WIRING BETWEEN SWITCHES. WIRE SIZE SHALL EQUAL POWER FEED SIZE.

G2. CONTRACTOR SHALL LOCATE AND INSTALL ALL LIGHT FIXTURES IN MECHANICAL ROOMS TO PROVIDE CLEARANCE FROM ALL MECHANICAL EQUIPMENT. COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLING FIXTURES, SWITCHES, CONDUIT, AND WIRING.

G3. FIXTURES INDICATED WITH CIRCUIT DESIGNATIONS SHALL BE CONNECTED TO LINE SIDE OF CIRCUIT.

G4. FIXTURES INDICATED WITH LETTER DESIGNATIONS SHALL BE CONNECTED TO THE SWITCH, OCCUPANCY SENSOR AND/OR POWER PACK WITH CORRESPONDING LETTER DESIGNATION.

G5. PROVIDE AND INSTALL A DEDICATED NEUTRAL FOR EACH CIRCUIT. CONTRACTOR IS NOT PERMITTED TO USE COMMON NEUTRALS.

G6. INTERFACE WITH EXHAUST FAN. COORDINATE WITH MECHANICAL CONTRACTOR.

G7. PROVIDE BOX AND ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION FOR ALL SWITCHES OCCUPANCY SENSORS, AND/OR POWER PACKS.

G8. VERIFY EXACT LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECT/ENGINEER IN FIELD.

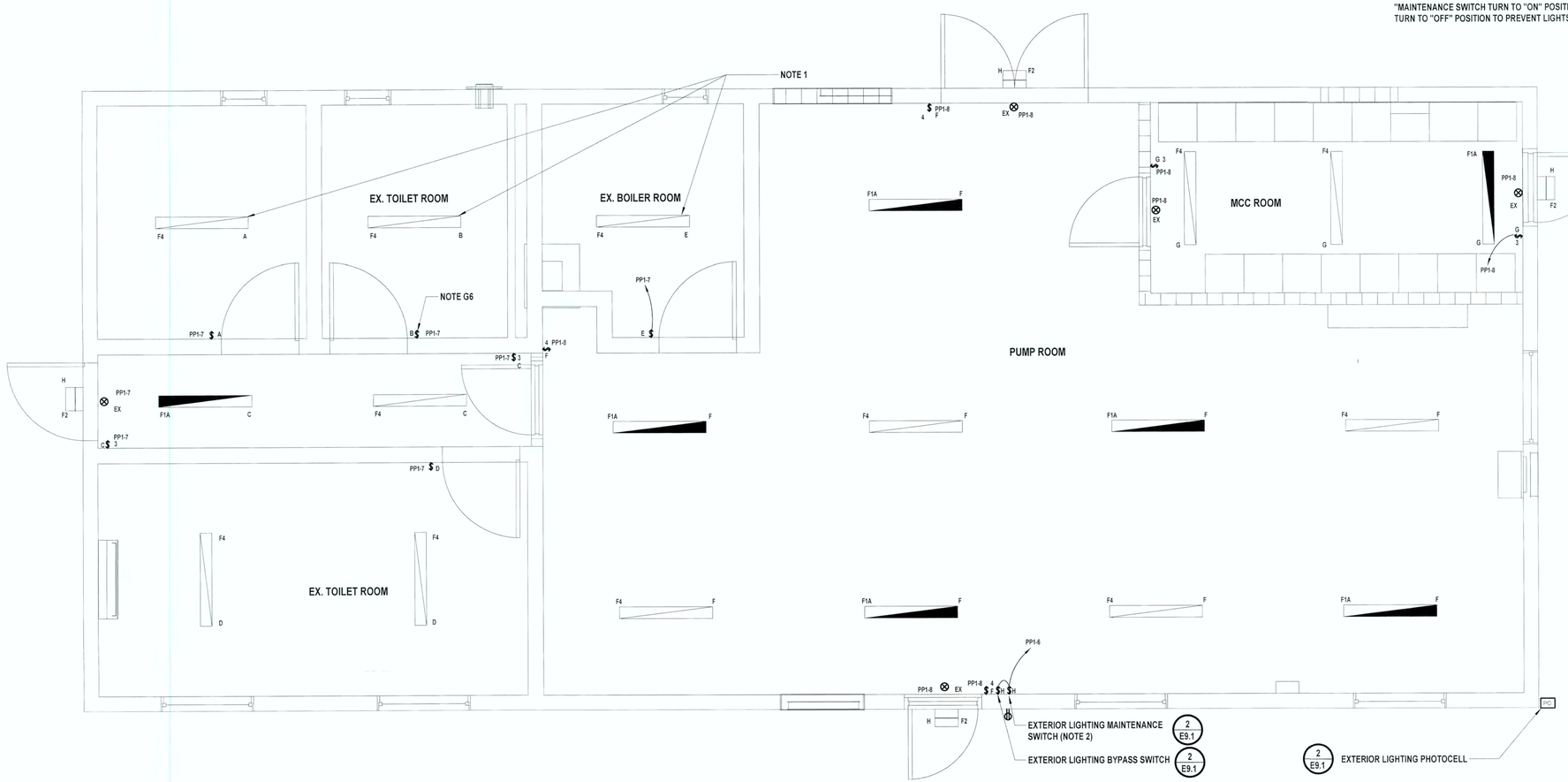
G9. PROVIDE AND INSTALL 10" X 8" PHENOLIC NAMEPLATE DESCRIBING SWITCH FUNCTION. PROVIDE ON/OFF LOCK FOR MAINTENANCE SWITCH.

G10. WIRING FOR EMERGENCY BALLAST IS NOT SHOWN ON PLANS. FIXTURES WITH EMERGENCY BALLASTS SHALL BE PROVIDED WITH AN UNSWITCHED POWER FEED FROM CIRCUIT FEEDING LIGHT POLE FIXTURE.

LIGHTING KEY

1. LIGHT FIXTURES INDICATED SHALL BE MOUNTED AT 9'-0" A.F.F.

2. CONTRACTOR SHALL PROVIDE 2" x 4" PHENOLIC NAME PLAT STATING "MAINTENANCE SWITCH TURN TO "ON" POSITION FOR NORMAL OPERATION. TURN TO "OFF" POSITION TO PREVENT LIGHTS FROM TURNING ON."



1 Control Building First Floor Lighting Plan
SCALE 3/8" = 1'-0"

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East
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No. 073522-1
LICENSED PROFESSIONAL ENGINEER

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SHEET TITLE
CONTROL BUILDING ELECTRICAL LIGHTING PLAN

DRAWING # E5.2

SHEET # 26 OF 35

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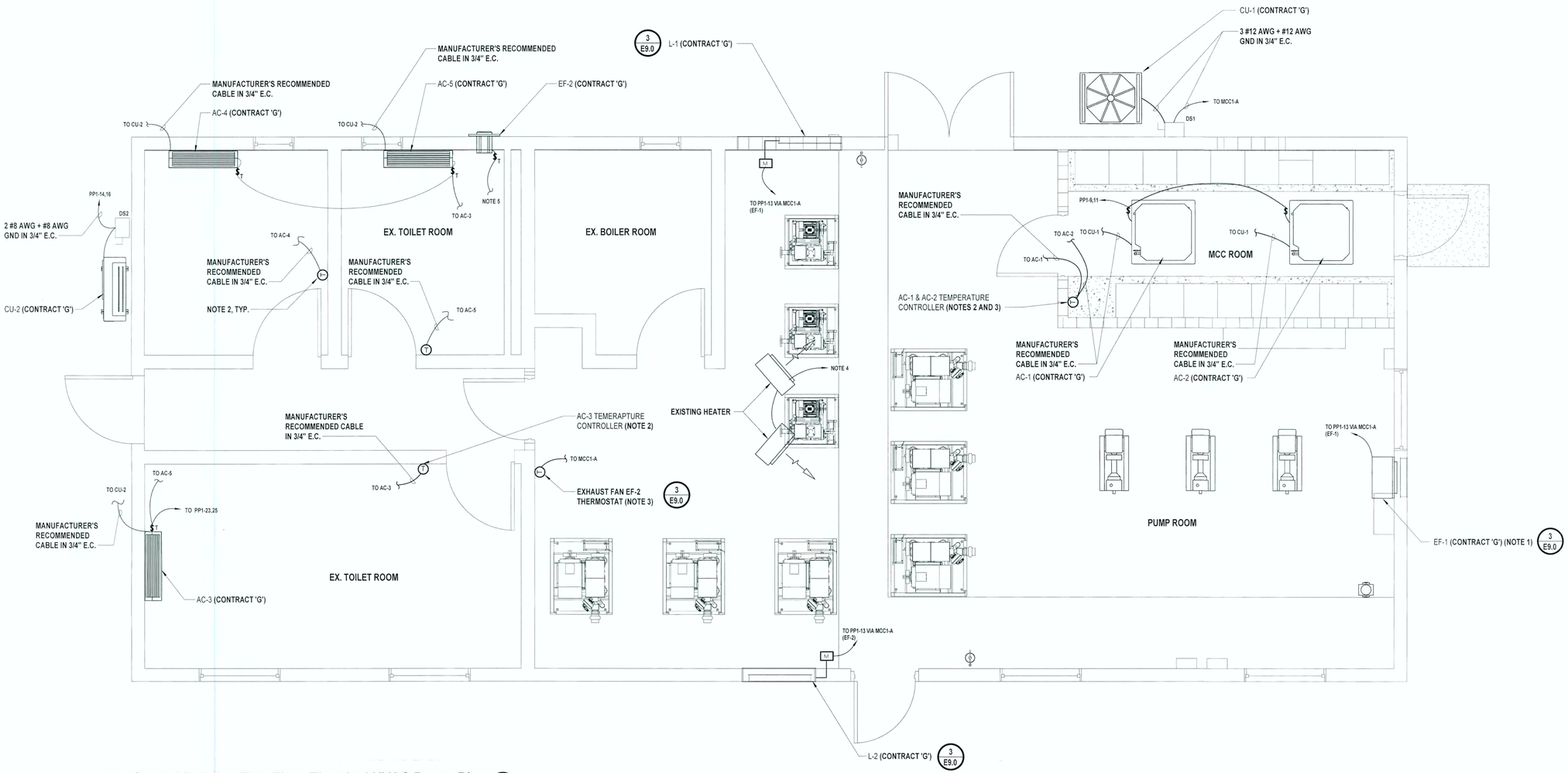

1 Control Building First Floor Electrical HVAC Power Plan

SCALE 3/8" = 1'-0"

NOTES:

1. DISCONNECT SWITCH INTEGRAL TO UNIT PROVIDED BY MANUFACTUER. CONTRACTOR IS RESPONSIBLE TO INSTALL/INTEGRATE WITH UNIT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. TEMPERATURE CONTROLLER SHALL BE PROVIDED BY CONTRACT 'G' AND INSTALLED ANDD WIRED BY CONTRACT 'E', AND PROGRAMMED BY CONTRACT 'G' IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. PROVIDE INSULATED BACKPLATE FOR THERMOSTAT/CONTROLLER INDICATED.
4. CONTRACTOR SHALL REFEED EXISTING HYDRONIC HEATERS FROM NEW PANEL PP1. CONTRACTOR SHALL FIELD VERIFY VOLTAGE AND PHASE OF EXISTING HEATERS.
5. CONTRACTOR SHALL INTERFACE EXHAUST FAN EF-2 WITH LIGHTING CIRCUIT. REFER TO DRAWING E5.2 FOR MORE DETAIL.

GENERAL NOTE:

G1. CONTRACTOR SHALL COORDINATE WITH MECHANICAL EQUIPMENT INSTALLED FOR EXACT LOCATION AND MOUNTING OF EQUIPMENT.

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East
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Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

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ELECTRICAL CONSTRUCTION

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SHEET TITLE

CONTROL BUILDING ELECTRICAL ELECTRICAL HVAC PLAN

DRAWING #

E5.3

SHEET # 27 OF 35

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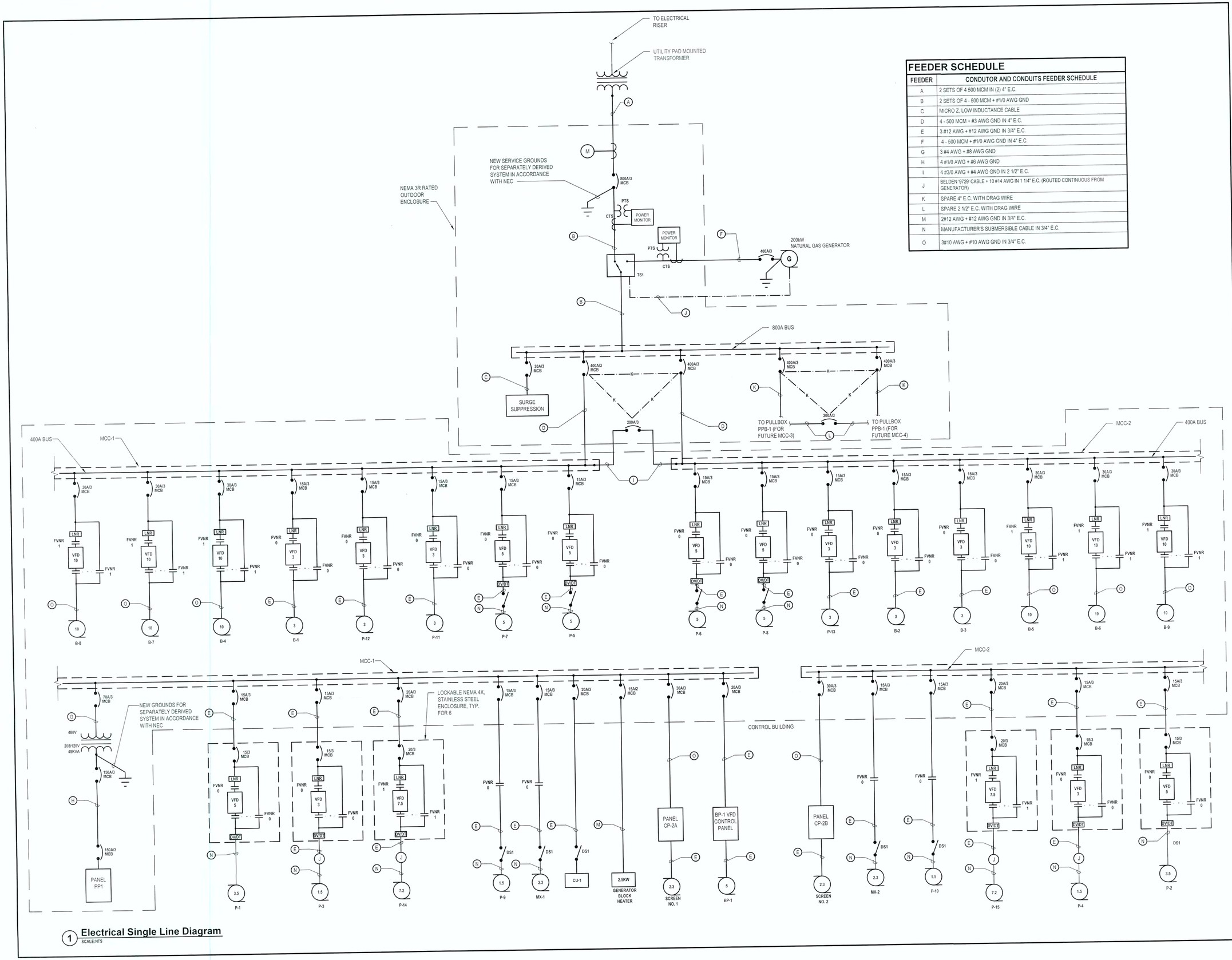

1 **Electrical Single Line Diagram**
SCALE:NTS

FEEDER SCHEDULE

FEEDER	CONDUTOR AND CONDUITS FEEDER SCHEDULE
A	2 SETS OF 4 500 MCM IN (2) 4" E.C.
B	2 SETS OF 4 - 500 MCM + #1/0 AWG GND
C	MICRO Z, LOW INDUCTANCE CABLE
D	4 - 500 MCM + #3 AWG GND IN 4" E.C.
E	3 #12 AWG + #12 AWG GND IN 3/4" E.C.
F	4 - 500 MCM + #1/0 AWG GND IN 4" E.C.
G	3 #4 AWG + #8 AWG GND
H	4 #1/0 AWG + #6 AWG GND
I	4 #3/0 AWG + #4 AWG GND IN 2 1/2" E.C.
J	BELDEN 9729 CABLE + 10 #14 AWG IN 1 1/4" E.C. (ROUTED CONTINUOUS FROM GENERATOR)
K	SPARE 4" E.C. WITH DRAG WIRE
L	SPARE 2 1/2" E.C. WITH DRAG WIRE
M	2#12 AWG + #12 AWG GND IN 3/4" E.C.
N	MANUFACTURER'S SUBMERSIBLE CABLE IN 3/4" E.C.
O	3#10 AWG + #10 AWG GND IN 3/4" E.C.

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538 Broad Hollow Road, 4th Floor East
Melville, NY 11747
631.756.8000 • www.h2m.com

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JEFFREY L. CZAJKA
No. 073522-1
LICENSED PROFESSIONAL ENGINEER

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Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

TOWN OF RIVERHEAD 1792 PAST PROSPERITY PER PROGRESSION

Suffolk County, NY

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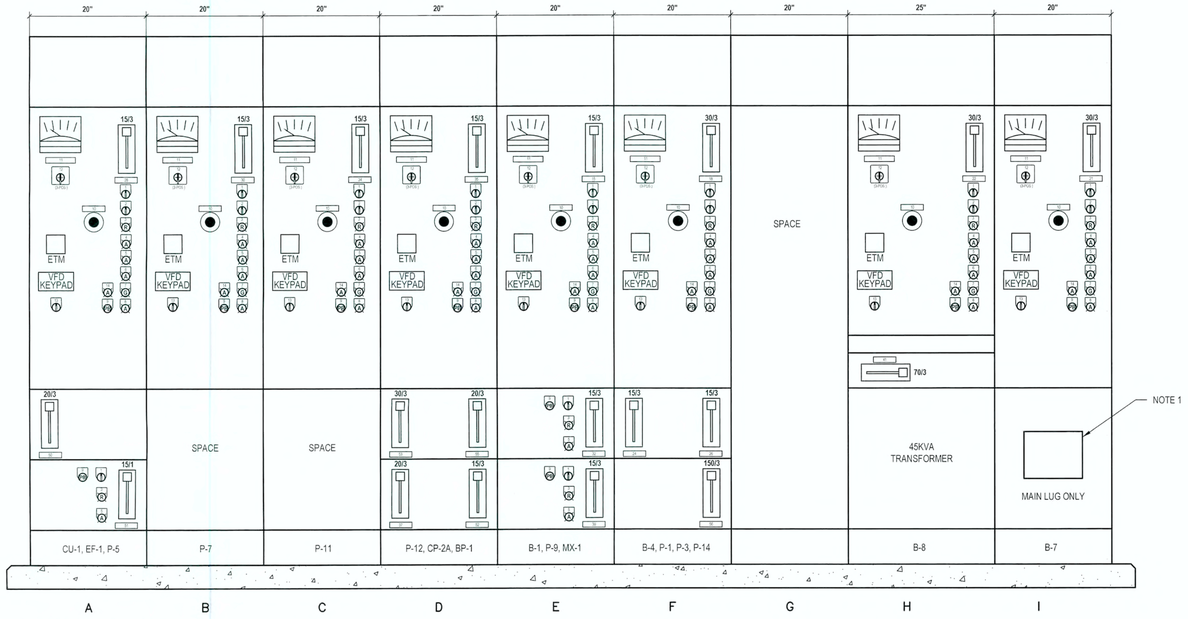
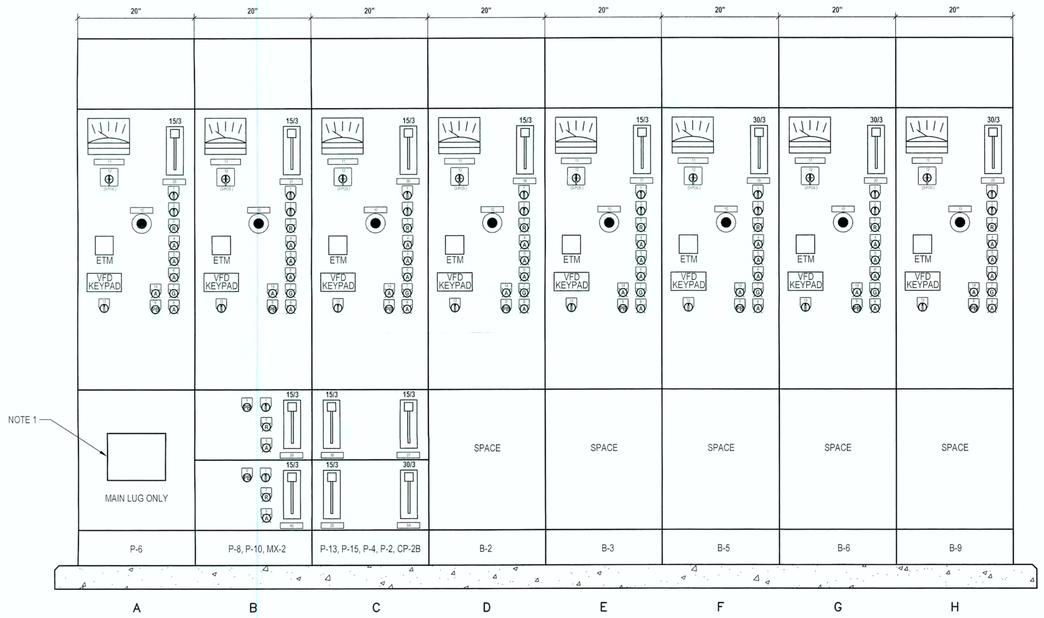
SHEET TITLE
ELECTRICAL SINGLE LINE DIAGRAM

DRAWING No.
E6.0

SHEET No.
28 OF 35



1 **MCC1 Elevation**
SCALE:1"=1'-0"



2 **MCC2 Elevation**
SCALE:1"=1'-0"

NOTE:

1. CONTRACTOR SHALL PROVIDE 8" x 10" NAME PLATE INDICATING THAT THE MCC IS FED FROM A REMOTE CIRCUIT BREAKER LOCATED IN THE OUTDOOR SWITCHGEAR.

CONTROL ELEVATION SCHEDULE

ITEM	DESCRIPTION	COLOR/TYPE
1	H-O-A SWITCH	SEL3
1A	H-O-A-R SWITCH	SEL4
2	NORMAL/BY-PASS SELECTOR SWITCH	SEL2
3	RUN	RED
4	BYPASS	RED
5	OVERLOAD	AMBER
6	FAULT	AMBER
7	OFF	GREEN
8	OVERTEMP	AMBER
9	RESET	PB
10	EMERGENCY STOP	PB-M
11	AMMETER	
12	A-B-C-OFF SELECTOR	SEL4
13	SPEED POT	
14	SEAL LEAK	AMBER
15	B-1	
16	B-2	
17	B-3	
18	B-4	
19	B-5	
20	B-6	
21	B-7	
22	B-8	
23	B-9	
24	P-1	
25	P-2	
26	P-3	
27	P-4	
28	P-5	
29	P-6	
30	P-7	
31	P-8	
32	P-9	

ITEM	DESCRIPTION	COLOR/TYPE
33	P-10	
34	P-11	
35	P-12	
36	P-13	
37	P-14	
38	P-15	
39	MX-1	
40	MX-2	
41	TRANSFORMER CIRCUIT BREAKER	
42	P-16	
43	MODE SWITCH	
44	NORMAL POWER AVAILABLE	GREEN
45	NORMAL POWER ON	GREEN
46	EMERGENCY POWER AVAILABLE	RED
47	EMERGENCY POWER ON	RED
48	AC POWER LOSS	RED
49	GENERATOR KILL SWITCH	PB-M
50	CU-1	
51	EF-1	
52	GENERATOR BLOCK HEATER	
53	CP-2A	
54	CP-2B	
55	BP-1	
56	PANEL PP1 MCB	

CONTROL PANEL LEGEND

SEL2	SELECTOR SWITCH - TWO POSITION
SEL3	SELECTOR SWITCH - THREE POSITION
SEL4	SELECTOR SWITCH - FOUR POSITION
PB	PUSH BUTTON SWITCH - MOMENTARY

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Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

TOWN OF RIVERHEAD 1792 · PAX ET PROSPERITAS · FIDE PROGRESSUM

Suffolk County, NY

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STATUS
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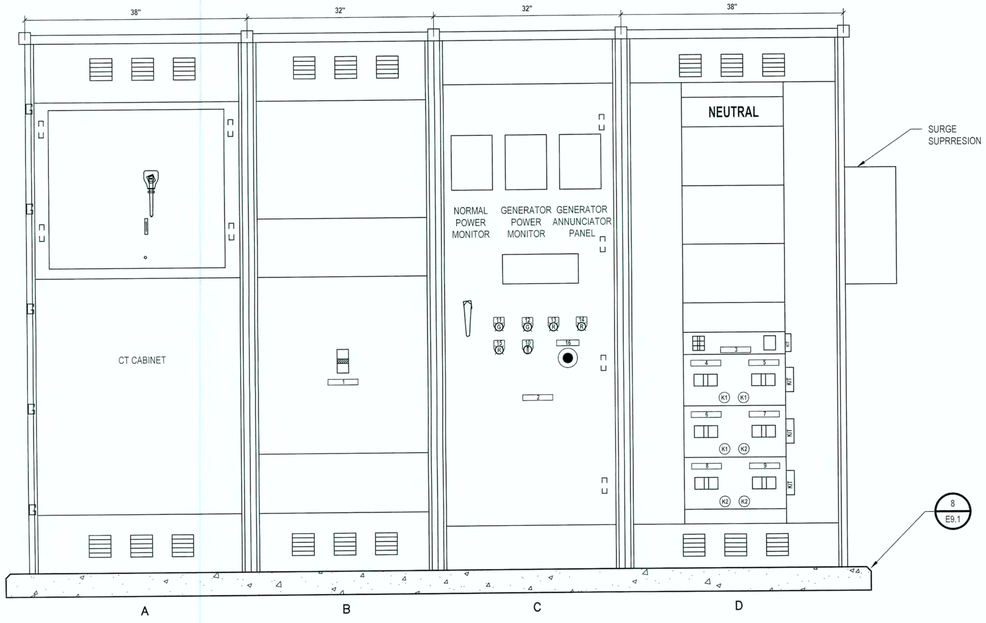
SHEET TITLE
MCC ELEVATION

DRAWING No.
E7.0

SHEET No.
29 OF 35



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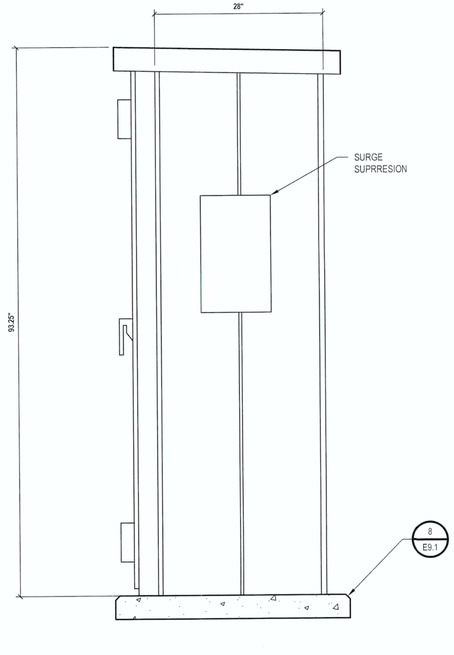

SIDE

1 Outdoor Switchboard Elevation

SCALE:1"=1'-0"

OUTDOOR SWITCHBOARD ELEVATION SCHEDULE		
ITEM	DESCRIPTION	COLOR/TYPE
1	MAIN SERVICE BREAKER	SEL3
2	ATS	SEL4
3	SURGE SUPPRESSION MAIN CIRCUIT BREAKER	SEL2
4	MCC-1 MAIN CIRCUIT BREAKER	RED
5	MCC-1 AND MCC-2 TIE BREAKER	RED
6	MCC-2 MAIN CIRCUIT BREAKER	AMBER
7	FUTURE MCC-3 MAIN CIRCUIT BREAKER	AMBER
8	FUTURE MCC-3 AND MCC-4 TIE BREAKER	GREEN
9	FUTURE MCC-4 MAIN CIRCUIT BREAKER	AMBER
10	MODE SWITCH	
11	NORMAL POWER AVAILABLE	GREEN
12	NORMAL POWER ON	GREEN
13	EMERGENCY POWER AVAILABLE	RED
14	EMERGENCY POWER ON	RED
15	AC POWER LOSS	RED
16	GENERATOR KILL SWITCH	PB-M
17		

CONTROL PANEL LEGEND	
SEL2	SELECTOR SWITCH - TWO POSITION
SEL3	SELECTOR SWITCH - THREE POSITION
SEL4	SELECTOR SWITCH - FOUR POSITION
PB	PUSH BUTTON SWITCH - MOMENTARY

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Melville, NY 11747
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JEFFREY L. CZAJKA
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CALVERTON SEWER DISTRICT

Upgrade of the Sewage Treatment Plant - Enterprise Park at Calverton Module No. 1 (0.100 MGD)

TOWN OF RIVERHEAD 1792 PAX ET PROSPERITAS PER PROGRESSUM

Suffolk County, NY

CONTRACT

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ELECTRICAL CONSTRUCTION

STATUS

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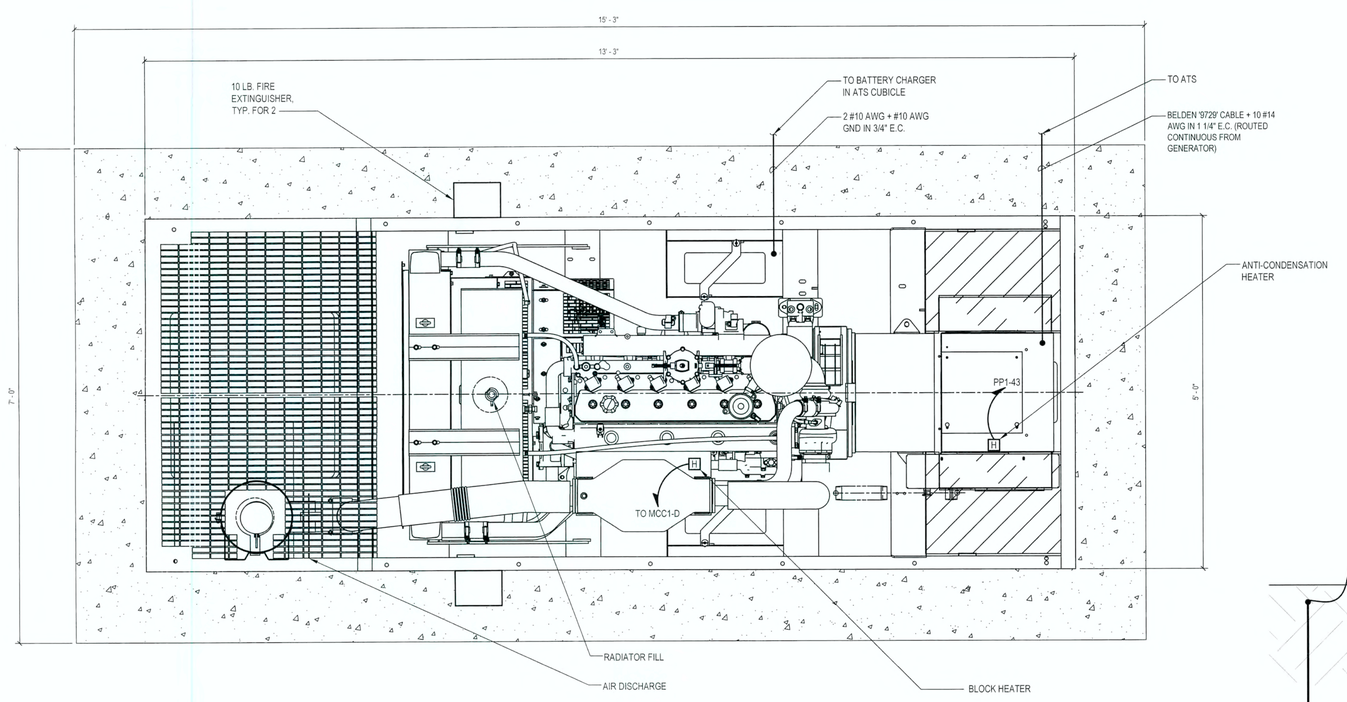
SHEET TITLE

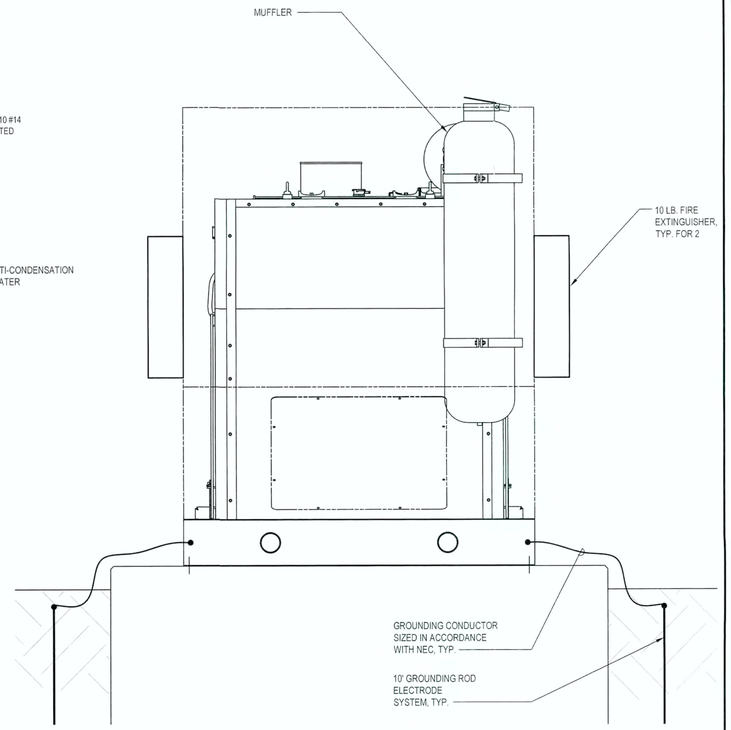
OUTDOOR SWITCHBOARD ELEVATIONS

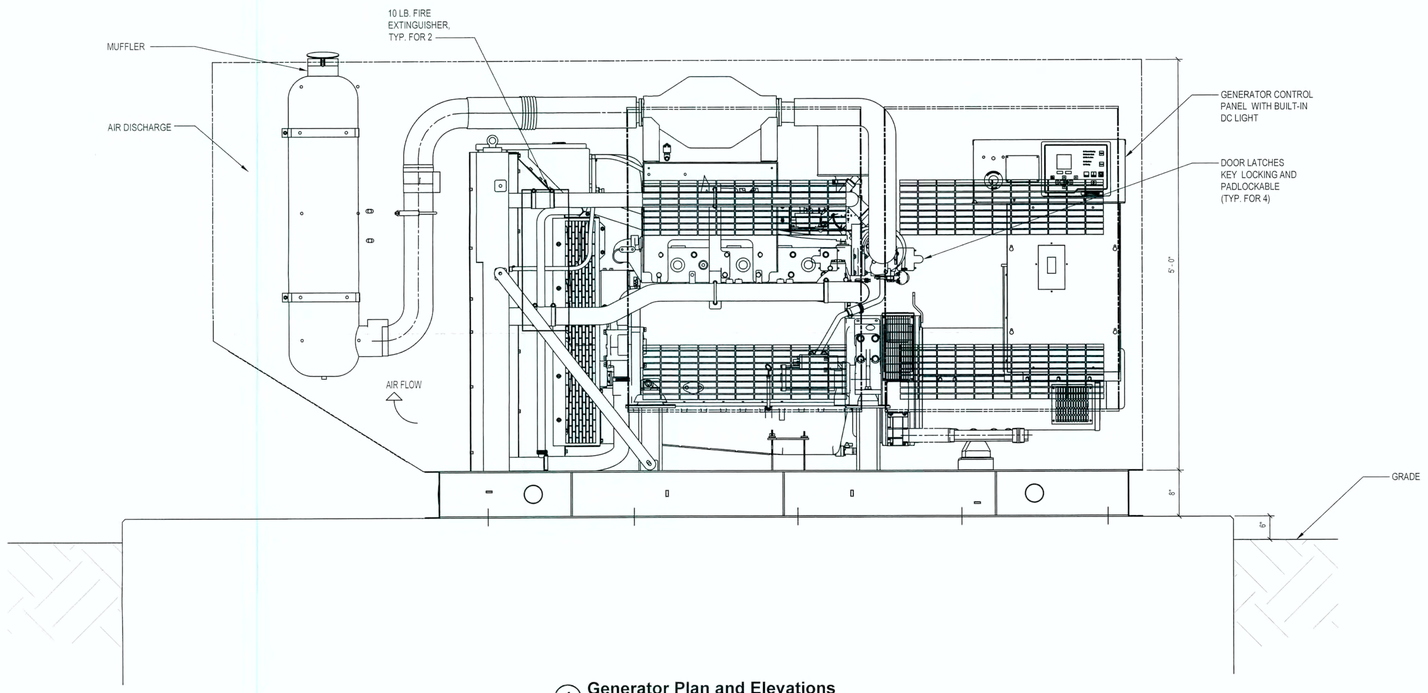
DRAWING No.

E7.1

SHEET No. 30 OF 35







1 **Generator Plan and Elevations**
SCALE: 1"= 1'-0"

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TOWN OF RIVERHEAD 1792 PAX IT PROSPERITAS PER PROGRESSUM

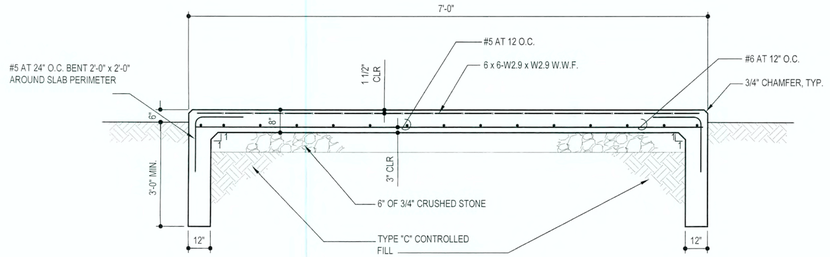
Suffolk County, NY

CONTRACT
CONTRACT E
ELECTRICAL CONSTRUCTION

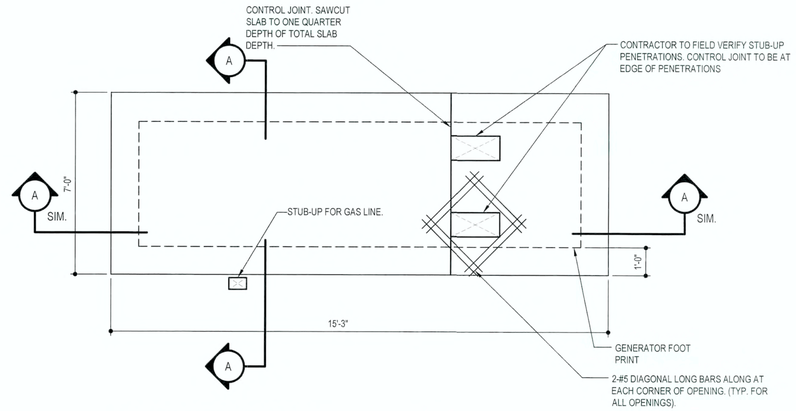
STATUS
FINAL BID DOCUMENT

SHEET TITLE
GENERATOR PLAN AND ELEVATIONS

DRAWING No.	SHEET No.
E8.0	31 OF 35



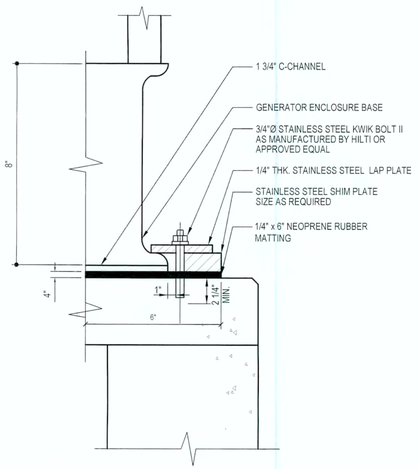
1 Section A-A
SCALE: NTS



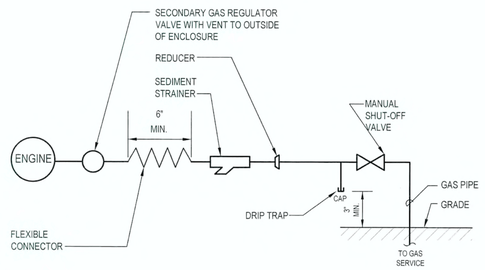
2 Generator Pad Plan
SCALE: NTS

NOTES:

1. PAD DIMENSION BASED ON SPECIFIED EQUIPMENT. 1'-0" MIN ALL AROUND



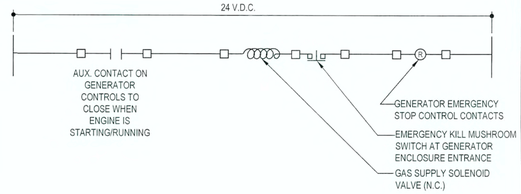
3 Generator Enclosure Anchoring Detail
SCALE: NTS



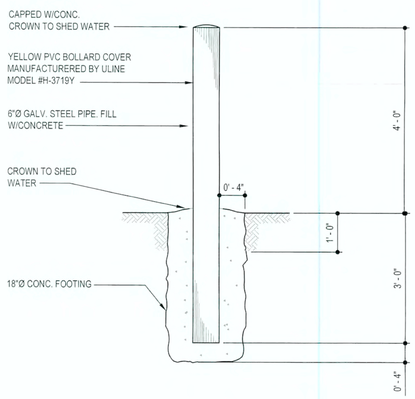
4 Fuel Supply Schematic
SCALE: NTS

NOTES:

1. NATURAL GAS PIPING TO GENERATOR, TO BE FURNISHED BY CONTRACT 'G'.



5 Generator Emergency Shutoff Control Circuit
SCALE: NTS



6 Bollard Detail
SCALE: NTS

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CONSULTANTS:

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PROJECT No.	DATE	SCALE
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CLIENT

CALVERTON SEWER DISTRICT

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TOWN OF RIVERHEAD 1792 — PAX ET PROSPERITAS PER PROGRESSUM

Suffolk County, NY

CONTRACT

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STATUS

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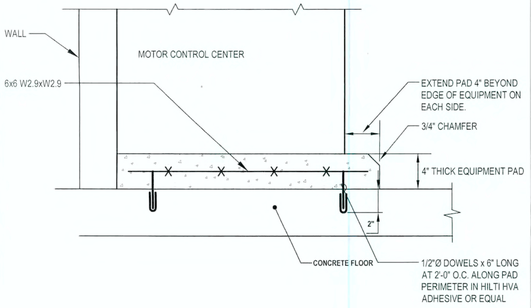
SHEET TITLE

GENERATOR DETAILS

DRAWING No.

E8.1

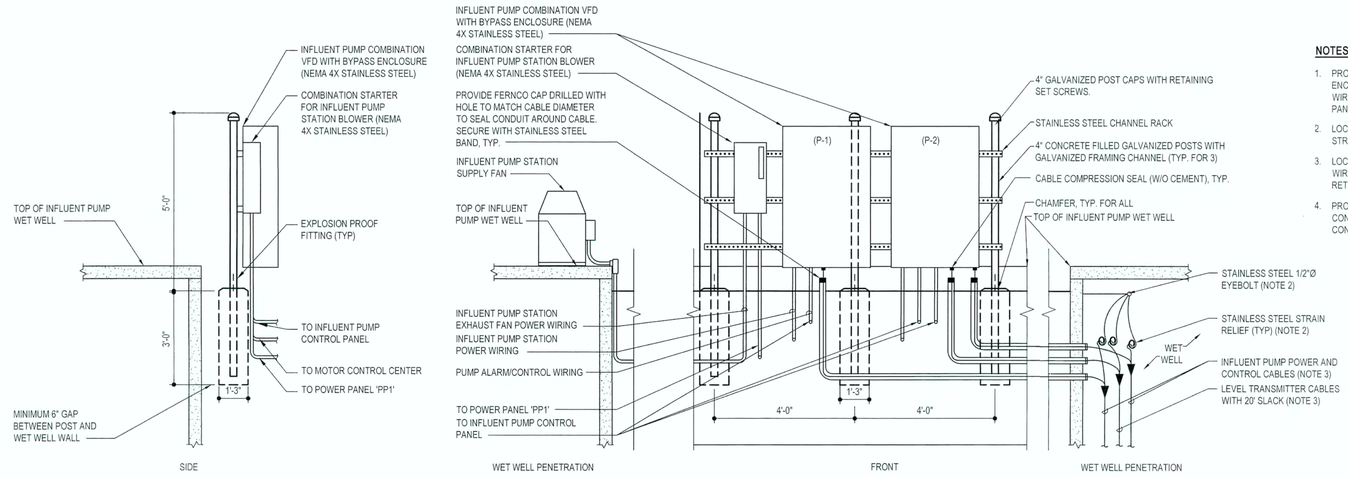
SHEET No. 32 OF 35



1 MCC Concrete Equipment Pad
SCALE:NTS

NOTE:

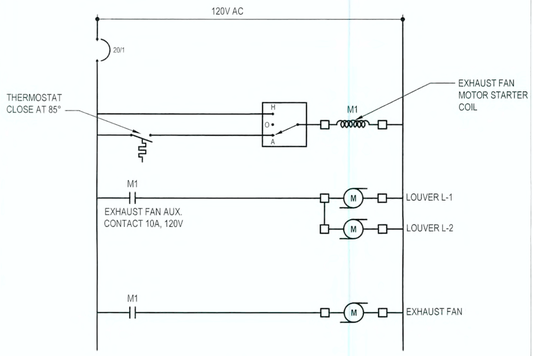
1. CONTRACT 'G' SHALL PRIME AND PAINT CONCRETE PAD BEFORE INSTALLATION SWITCHBOARD.



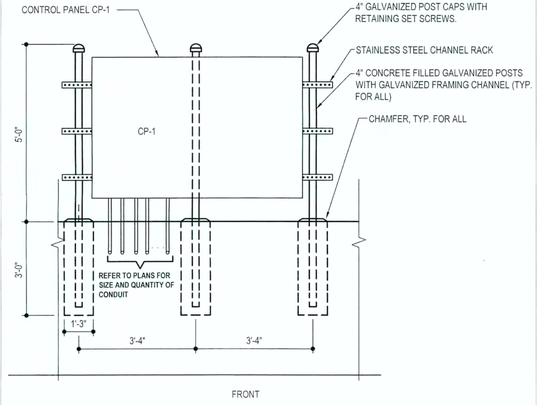
2 Wet Well Pump Cable and Float Cable Installation Detail
SCALE:NO SCALE

NOTES:

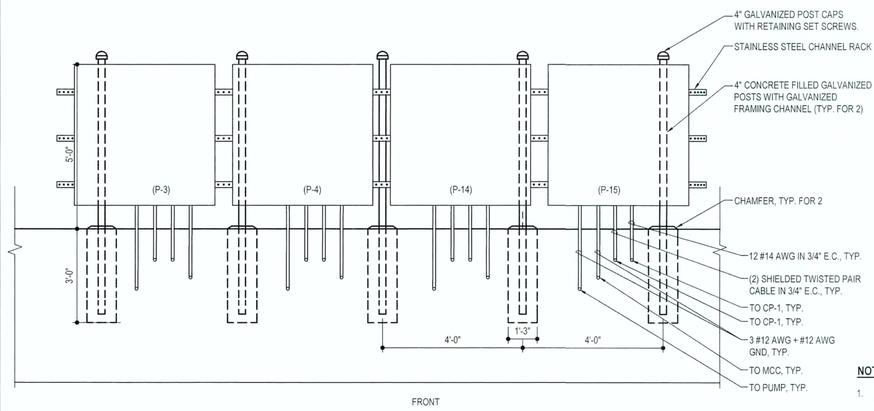
1. PROVIDE TERMINAL BLOCKS WITHIN VFD ENCLOSURE AS REQUIRED TO INTERFACE WIRING FROM THE INFLUENT PUMP CONTROL PANEL WITH SUBMERSIBLE CABLES.
2. LOCATE STAINLESS STEEL EYEBOLT AND STRAIN RELIEF NEAR ACCESS HATCHWAY.
3. LOCATE STAINLESS STEEL RETRIEVAL GUY WIRE BACK TO ACCESS HATCH FOR CABLE RETRIEVAL.
4. PROVIDE PB SERIES TERMINAL BLOCK FOR CONNECTION OF POWER AND CONTROL FOR CONDUCTORS IN VFD ENCLOSURE.



3 Blower Room EF-1 Control Diagram
SCALE:N.T.S.



6 Control Panel CP-1 Rack Detail
SCALE:N.T.S.



5 Pre-EQ and Effluent Pump VFD Rack Detail
SCALE:N.T.S.

NOTES:

1. PROVIDE TERMINAL BLOCKS WITHIN VFD ENCLOSURE AS REQUIRED TO INTERFACE WIRING FROM THE INFLUENT PUMP CONTROL PANEL WITH SUBMERSIBLE CABLES.
2. PROVIDE PB SERIES TERMINAL BLOCK FOR CONNECTION OF POWER AND CONTROL FOR CONDUCTORS IN VFD ENCLOSURE.

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Suffolk County, NY

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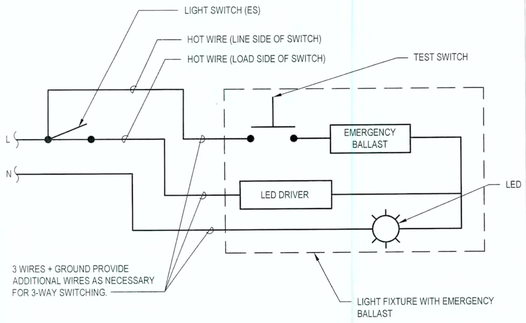
SHEET TITLE

ELECTRICAL DETAILS 1

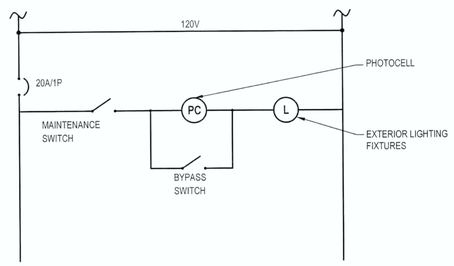
DRAWING No.

E9.0

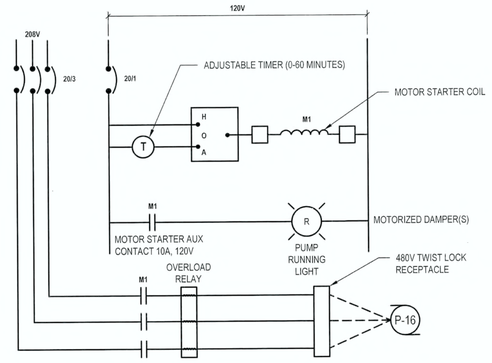
SHEET No. 33 OF 35



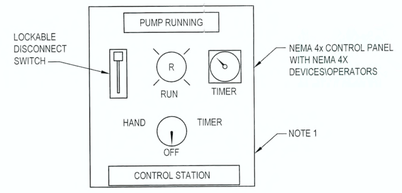
1 Light Fixture with Emergency Ballast Schematic
SCALE:NTS



2 Exterior Lighting Wiring Schematic
SCALE:N.T.S.



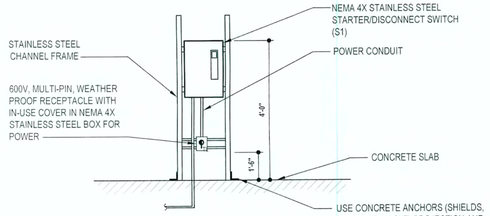
3 P-16 Starter Control Schematic
SCALE:NTS



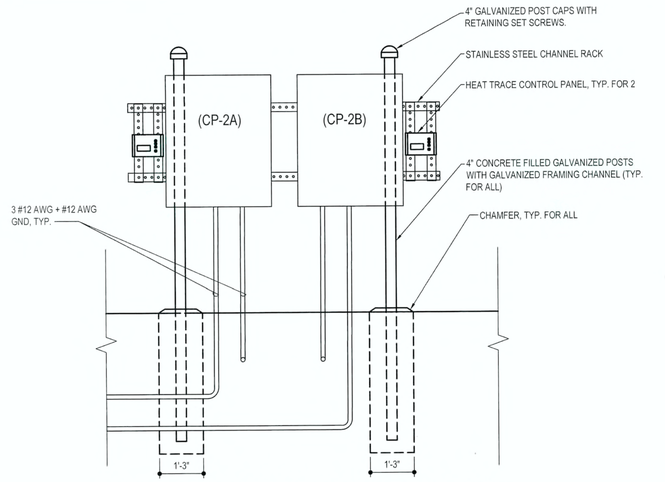
4 P-16 Starter Elevation
NO SCALE

NOTE:

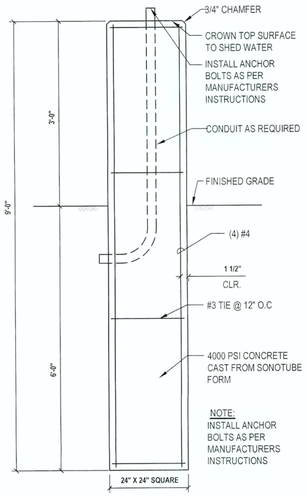
1. LOCATION SHALL BE DETERMINED IN THE FIELD BY ENGINEER.



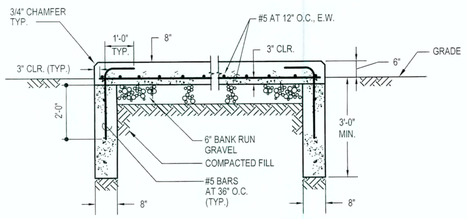
5 P-16 Mounting Detail
NO SCALE



6 Control Panel CP-2A and CP-2B Rack Detail
SCALE:N.T.S.



7 Light Pole Base Detail
SCALE:NTS



8 Outdoor Switchboard Concrete Pad Detail
SCALE:NTS

NOTE:

1. CONTRACTOR SHALL PRIME AND PAINT CONCRETE PAD BEFORE INSTALLING OUTDOOR SWITCHBOARD.

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CONSULTANTS:

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CALVERTON SEWER DISTRICT

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Suffolk County, NY

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SHEET TITLE
ELECTRICAL DETAILS 2

DRAWING No.
E9.1

SHEET No.
34 OF 35

Name

Panelboard:	PP1	Voltage:	208Y/120	Phase:	3	Wire	4
Manufacturer:	SIEMENS	Mains:	150A	Mains Rating:	225 A	A.I.C. Rating:	42,000
Panel Type:	P2	Mounting:	MCC	Options:		Notes:	
NEMA Type Enclosure	NEMA 1						

Load Description	Breaker Option	Trip	Poles	Circ No.	A	B	C	A	B	C	Circ No.	Poles	Trip	Breaker Option	Load Description
BATH RM/STOR. RM. REC.		20 A	1	1	1440 VA			1440 VA			2	1	20 A		BOILER RM/HALLWAY REC.
CONTROL ROOM RECEP.		20 A	1	3		900 VA			1080 VA		4	1	20 A		BLOWER RM. REC.
BLOWER RM. RECEP.		20 A	1	5			1080 VA			0 VA	6	1	20 A		EXTERIOR LIGHTING
LIGHTING AND EF-2		20 A	1	7	201 VA			356 VA			8	1	20 A		MCC & BLWR RM. LTG
AC-1 & AC-2		20 A	2	9		270 VA			0 VA		10	1	20 A		FLOW METER FM-1
				11			270 VA			0 VA	12	1	20 A		SF-1
EXHAUST FAN 1 (EF-1)		20 A	1	13	1246 VA			2550 VA			14	2	50 A		CU-2
EUH-1		20 A	2	15		1500 VA			2550 VA		16				
				17			1500 VA			0 VA	18	1	20 A		VALVE VAULT LIGHTING
SS2 - Heat Trace		20 A	1	19	640 VA			0 VA			20	1	20 A		CP-1 (PSCP)
AC-3, AC-4, AC-5		20 A	2	21		113 VA			2000 VA		22	1	20 A		CP-3
				23			113 VA			200 VA	24	1	20 A		TURBIDITY METER CTRL
Heat Trace		20 A	1	25	0 VA			640 VA			26	1	20 A		SS2 - Heat Trace
SCADA Computer Rec		20 A	1	27		540 VA			640 VA		28	1	20 A		SS2 - Heat Trace
SS2 - Heat Trace		20 A	1	29			640 VA			640 VA	30	1	20 A		SS2 - Heat Trace
SS2 - Heat Trace		20 A	1	31	640 VA			640 VA			32	1	20 A		SS2 - Heat Trace
SS2 - Heat Trace		20 A	1	33		640 VA			0 VA		34	1	20 A	--	SPARE
SS2 - Heat Trace		20 A	1	35			640 VA			1500 VA	36	2	20 A		EUH-2
Process Tank Receptacles		20 A	1	37	1468 VA			1500 VA			38				
Process Tank Flow Meters		20 A	1	39		0 VA			0 VA		40				
Digital Video Recorder		20 A	1	41			200 VA			0 VA	42	3	20 A		P-16 MOTOR STARTER
EXTERIOR RECEPTACLE		20 A	1	43	180 VA			0 VA			44				
Exist Boiler & Recirc Pumps	--	20 A	1	45		0 VA			0 VA		46	1	20 A	--	SPARE
SPARE	--	20 A	1	47			0 VA			0 VA	48	1	20 A	--	SPARE
SPARE	--	20 A	1	49	0 VA			0 VA			50	1	20 A	--	SPARE
SPARE	--	20 A	1	51		0 VA			0 VA		52	1	20 A	--	SPARE
SPARE	--	20 A	1	53			0 VA			0 VA	54	1	20 A	--	SPARE

Connected Totals: A 14.7 kVA; B 10.0 kVA; C 8.4 kVA

Total: 20.9 kVA

Amps: 58 A

(All Phases to be balanced to within 7% Actual Load Totals)

Breaker Option

AS - Powerlink AS Breaker
LO - Handle Lock-off Device
ST - Shunt Trip Type
AUX - Auxillary Contacts
PA - Handle Padlock Attchment
GFCI - Ground Fault Circuit Interrupter
HACR - Heating, A/C & Refrigeration
SF - Subfeed
TC - Time Clock Control

LIGHTING FIXTURE SCHEDULE

TYPE	MFG.	MODEL NO.	LAMPS NO. PER FIXTURE	LAMPS TYPE	LAMPS WATTS	VOLTAGE	MOUNTING	REMARKS	MOUNTING HEIGHT
F1	COLUMBIA LIGHTING	LLT22-40MLG-FSA12F-EU-G2	1	LED	27	120	CEILING	-	8' A.F.F.
F1A	COLUMBIA LIGHTING	LLT22-40MLG-FSA12F-EU-ELL14-G2	1	LED	27	120	CEILING	W/ 90 MIN BATTERY BACK-UP	8' A.F.F.
F2	SPAULDING LIGHTING	TRP-30L-4K-035-3-U-PC-BBU	1	LED	34	120	WALL	W/ 90 MIN BATTERY BACK-UP AND INTEGRAL PHOTOCELL	6" ABOVE DOOR
F3	CIMMERON LIGHTING	CL-1A-30L-U-4K-4	1	LED	70	120-277	POLE	AXM-CL-K-TA-BL POLE MOUNT ACCESSORY	-
F4	COLUMBIA LUGHTING	LXEM4-40ML-DFA-EU-ELL14	1	LED	42	120	SURFACE	W/ EMERGENCY BATTER BACK-UP	-
PC	INTERMATIC	K4221C	-	-	-	120	WALL		-
POLE	SPAULDING LIGHTING	SSS-S-10-40-A-1-S2-SL-UL	-	-	-	-	-	10' SQUARE STRAIGHT STEEL POLE	-
	COMPASS	CER	1	LED	1.78	120	SURFACE		-

MOTOR STARTER SCHEDULE

ID	NEMA SIZE	VOLTS / PHASE	ENCLOSURE TYPE	DISCONNECT AMPS / POLES	ACCESSORIES
S1	0	208V / 3	NEMA 4X S.S.	20 / 3	H-O-A SWITCH, RUN, TIMER AND OVERLOAD LIGHT

TRANSFER SWITCH SCHEDULE

ID	TYPE	ENCLOSURE	VOLTS	PHASE	POLES	AMPS
TS1	AUTOMATIC	OPEN	480V	3Ø	4	800

TRANSFORMER SCHEDULE

ID	SIZE	PRIMARY	SECONDARY	TYPE	ENCLOSURE	MOUNTING
T1	45KVA	480, 3Ø	208V, 3Ø, 4W	DRY	OPEN	MCC

H2M architects + engineers
538 Broad Hollow Road, 4th Floor
East
Melville, NY 11747

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ELECTRICAL SCHEDULES

DRAWING # E10.0

SHEET # 35 OF 35

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