REQUEST FOR PROPOSAL

CONSTRUCTION SERVICES FOR
PUBLIC WORKS FUEL PUMP STATION
TOWN OF HUDSON, NH

Prepared for

Town of Hudson
Engineering & Public Works Department
12 School Street
Hudson, NH 03051

JULY 2023

Prepared by

Town of Hudson
Engineering & Public Works Department
12 School Street
Hudson, NH 03051

Section		Total # of Pages
TOC	TABLE OF CONTENTS	1

TABLE OF CONTENTS

REQUEST FOR PROPOSAL

The Town of Hudson, New Hampshire wishes to engage the services of a qualified private firm to provide design and construction services of:

CONSTRUCTION SERVICES FOR PUBLIC WORKS FUEL PUMP STATION

The CONTRACTOR must be lawfully engaged in the service of construction of fuel pump stations work in the State of New Hampshire.

An overview and detailed specifications are provided later in the Request for Proposal (RFP).

Proposals must be received no later than **10:00 AM on July 27, 2023** from interested firms, to be eligible for consideration by the Town. Proposal shall follow the format listed below and be on the forms provided as required. Each statement shall be submitted in a sealed envelope, which is clearly marked,

"CONSTRUCTION SERVICES FOR PUBLIC WORKS FUEL PUMP STATION HUDSON, NEW HAMPSHIRE"

Requests may be issued only by the Town Engineer, or his designee, to authorized firms, and are not transferable unless authorized by the Town Engineer or his designee.

Complete copies of RFP are available from:

Mr. Elvis Dhima, P.E.
Town Engineer
Town Hall
12 School Street
Hudson, NH 03051
edhima@Hudsonnh.gov

All proposals received will be considered confidential and not available for public review until after a vendor has been selected.

The Town reserves the right to reject any or all proposals or any part thereof, to waive any formality, informality, information or errors in the proposal, to accept the proposal considered to be in the best interest of the Town, or to purchase on the open market if it is considered in the best interest of the Town to do so. Failure to submit all information called for and/or submission of an unbalanced proposal are sufficient reasons to declare a proposal as non-responsive and subject to disqualification.

Proposals which do not incorporate our requested format for providing CONSTRUCTION SERVICES FOR PUBLIC WORKS FUEL PUMP STATION will not be considered.

All proposals are advertised, at the Town's discretion, in various publications and are posted publicly as detailed below:

Name	Advertising Medium	Address	Phone/Fax	Email and Web Address
Town Hall Hudson, NH	Post at Town Hall	12 School Street, Hudson NH 03051	603.886.6008 603.594.1142(fax)	edhima@hudsonnh.gov

TOWN OF HUDSON, NEW HAMPSHIRE

_____

Mr. Elvis Dhima, PE, Town Engineer

Date:_____

PROPOSAL DUE DATE/TIME: JULY 27, 2023 NOT LATER THAN 10:00 AM AT THE TOWN HALL OFFICES, 12 SCHOOL STREET, HUDSON, NH.

A MANDATORY PRE-PROPOSAL MEETING WILL BE HELD AT THE TOWN HALL OFFICES ON JULY 13, 2023 AT 10:00 AM.

ALL QUESTIONS DUE BY JULY 20, 2023 AT 10:00 AM.

PREPARATION OF PROPOSALS:

Proposals shall be submitted on the forms provided and must be signed by the Proposer or the Proposer's authorized representative. The person signing the proposal shall initial any corrections to entries made on the proposal forms.

Proposers must quote on all items appearing on the proposal forms. Failure to quote on all items may disqualify the proposal.

Unless otherwise stated in the Request for Proposal (RFP), the Proposer agrees that the proposal shall be deemed open for acceptance for ninety (60) calendar days subsequent to submittal to the Town of Hudson or as modified by addendum.

Any questions or inquiries must be submitted in writing, and must be received by the Town Engineer, Elvis Dhima (edhima@hudsonnh.gov) no later than seven (7) calendar days before the Request for Proposals due date to be considered. Any responses to questions, clarifications, or changes to the Request for Proposals will be provided to all Proposers of record that attended the pre-proposal meeting.

The Proposer shall not divulge, discuss or compare this proposal with other Proposers and shall not collude with any other Proposers or parties to a proposal whatever.

MANDATORY PRE-PROPOSAL MEETING:

All Proposers must attend the pre-proposal meeting at the **Town Hall Offices at 10:00 AM on JULY 13, 2023**.

SUBMISSION OF PROPOSALS:

Proposals must be submitted at the Clerk's Office, Town Hall Offices, 12 School Street, Hudson NH **by 10:00 AM JULY 27, 2023** as directed in the Request for Proposals, and on the forms provided unless otherwise specified. Proposals must be typewritten or printed in ink. Proposals must be mailed or delivered in person. Proposals that are faxed or e-mailed will not be accepted.

BID BOND

Each Bidder shall accompany the proposal with a bid guarantee in the form of Cashier's Check, or a Certified Check payable to the Town of Hudson, or a Bid Bond secured by a guaranteed company or surety company licensed to operate in the State of New Hampshire in the amount of 5% of the Bid. (See Attached).

This bid guarantee shall ensure the execution of a Contract, which shall remain in effect for ninety (60) days after receipt of Bid by the Owner.

The bid guarantees of the unsuccessful Bidders shall be returned as soon as practicable.

Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their Power of Attorney.

AMENDMENTS TO PROPOSALS

If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

Proposers shall acknowledge receipt of any amendment to this solicitation (1) by identifying the amendment number and date on the Proposal form, or by letter. Proposals which fail to acknowledge the Proposer's receipt of any amendment will result in the rejection of the Proposal if the amendment(s) contained information which substantively changed the municipality's requirements.

Amendments will be on file in the offices of the municipality and the Engineer at least 1 day before Proposal opening.

WITHDRAWAL OF PROPOSALS:

Proposals may be withdrawn by written notice, telegram (including mailgram) or facsimile machine transmission received at any time before the exact time set for opening of proposals; provided that written confirmation of telegraphic or facsimile withdrawals over the signature of the proposer is mailed and postmarked prior to the specified proposal opening time. A proposal may be withdrawn in person by a proposer or its authorized representative if, before the exact time set for opening of proposals, the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal. Negligence on the part of the Proposer in preparing this proposal shall not constitute a right to withdraw a proposal subsequent to the proposal opening. Proposals may not be withdrawn for the period as indicated in this Request for Proposals or as modified by addenda.

RECEIPT AND OPENING OF PROPOSALS:

Proposals shall be submitted prior to the time fixed in the Request for Proposals. Proposals received after the time so indicated shall be returned unopened.

All qualified Bidders will receive consideration without regard to race, color, religion, creed, age, sex, or national origin.

PROPOSAL RESULTS:

All proposals received shall be considered confidential and not available for public review until after a contractor has been selected. All proposals may be subject to negotiations prior to the award of a contract.

NO TELEPHONE REQUESTS FOR RESULTS WILL BE ACCEPTED OR GIVEN.

TIE PROPOSALS:

When identical Proposals are received, with respect to price, delivery, financial resources, experience, ability to perform and quality, award may be made by a toss of a coin.

LIMITATIONS:

This Request for Proposal (RFP) does not commit the Town to award a contract, to pay any costs incurred in the preparation of a response to this request, or to procure or contract for services, supplies or equipment. The Town reserves the right to accept or reject any or all proposals received as a result of this request, or to cancel in part or in its entirety this RFP, if it is in the best interest of the Town to do so.

The OWNER reserves the right to waive any informalities, to negotiate with any Bidder and to reject any or all Bids. No Bidder may withdraw his Bid within ninety (60) days after the actual date of the opening thereof.

PROPOSAL EVALUATION:

In an attempt to determine if a Proposer is responsible, the Town, at its discretion, may obtain technical support from outside sources. Each Proposer will agree to fully cooperate with the personnel of such organizations.

PROJECT BACKGROUND

Hudson Public Works Department will be decommissioning the old fuel pump station and will construct a new fuel pump station that can meet current and future needs.

This project will be 100% funded by the Town of Hudson.

SCOPE OF SERVICES

The Town of Hudson Engineering Department is soliciting Contractor services for

CONSTRUCTION SERVICES FOR PUBLIC WORKS FUEL PUMP STATION

The work will include construction of retaining wall, concrete slab and grading, and involves the following:

- Grading of the site
- Minor drainage work
- Granite curb installation
- Installation of fuel pumps and fuel tanks
- Installation of the concrete slab and positive displacement barrier
- Installation of canopy
- Installation of drainage components and crushed gravel
- Installation of a fuel vending management system
- Final grading of the site prior to paving, while paving will be done by Town of Hudson.
- Loam and hydroseed

The Town reserves the right to perform the grading of the site, minor drainage work and loam and hydroseed. In addition, the Town shall be responsible for paving of the site.

Proposers shall demonstrate experience in the design and installation of projects.

1. Description of Services Requested

   The Contractor will need to provide the Town with a written description of the proposed work for review and approval.

   Work will include:

- Complete schedule of the work and fees for the proposed tasks

2. Time Frame for Performance of Services

A contract will be signed as soon as possible after the Proposal due date and completion of the Proposal evaluations, but no later than August 15, 2023 and the project will proceed immediately. **The Contractor will be able to start work as of August 15, 2023 and must be substantially complete no later than December 1, 2024**.

BUDGET FOR CONSTRUCTION SERVICES

The construction budget is $650,000.

TRAFFIC CONTROL/MAINTENANCE

The Town reserves the right to hire Hudson Police Department or Highway Department staff directly to reduce the cost of the traffic control/maintenance, if necessary or applicable.

PROPOSAL STATEMENT PREPARATION

In order to facilitate the evaluation of the Proposals, the Proposer is instructed to follow the outline below in responding. Proposals that do not follow the outline, or do not contain the required information may be considered as unresponsive Proposals. Additional or more detailed information may be annexed to the main body of the Proposal. Proposals shall be submitted in one (1) original and one (1) identical copies.

1. Company or Contractor Team Background Material

   The Proposer shall provide information concerning the background of the firm including a brief description of the firm's experience providing similar services. This shall include any proposed subcontractor or consultants that the Proposer plans to engage on this project.

2. Experience/References

   The Proposer shall provide a Client reference list, with names, addresses, and telephone numbers, especially for clients whom the Proposer has provided similar services in the past. The Proposer should be able to provide a list showing that they have worked on at least one similar project in the last FIVE (5) years that are of similar size and scope. References shall include a brief description of the project and the services provided. Contractor shall be familiar with the New Hampshire Department of Transportation specifications.

3. Project Approach

   The Proposer shall provide a cost estimate, including construction techniques and proposed construction materials for the construction. The Proposer shall also describe

recent similar work and any other information that the Proposer deems relevant to the project, and which the Proposer believes will further the competitiveness of the Proposal, including work samples, pictures, etc. from similar completed projects.

4. Schedule

   The Proposer shall provide a brief description of their ability to meet the construction schedule set forth in this Request for Proposal. In addition, the Proposer shall provide a proposed schedule of construction.

5. Cost Proposal

   Proposers shall submit a Cost Proposal in Lump Sum not to exceed format.

AWARD OF CONTRACT:

Any contract entered into by the Town shall be in response to the proposal and subsequent discussions. It is the policy of the Town that contracts be awarded, among other considerations, only to responsive and responsible Proposers. In order to qualify as responsive and responsible, a prospective Engineering Firm/Contractor must meet the following standards as they relate to this request:

- Have adequate financial resources for performance or have the ability to obtain such resources as required during performance;
- Have the necessary experience, organization, technical and professional qualifications, skills and facilities;
- Be able to comply with the proposed or required time of completion or performance schedule;
- Have a demonstrated satisfactory record of performance.
- Adhere to the specifications of this proposal and provide all documentation required of this proposal

The contract will be awarded to a responsive and responsible Proposer based on the evaluation criteria (design approach, experience of the engineering firm and contractor, cost and schedule), not be the lowest price.

The Town reserves the right to reject any or all proposals or any part thereof, to waive any formality, informality, information and/or errors in the proposal, to accept any proposal in part or in whole as may be in the best interest of the Town, or any other option if it is considered in the best interest of the Town to do so.

This solicitation requires proposing on all items, failure to do so will disqualify the proposal.

CONTRACT AWARD PROTEST POLICY AND PROCEDURE:

a. Definitions. As used in this provision:

"Interested party" means an actual or prospective bidder whose direct economic interest would be affected by the award of the contract.

"Protest" means a written objection by an interested party to this solicitation or to a proposed or actual award of a contract pursuant to this solicitation.

b. Protests shall be served on the Contracting Officer by obtaining written and dated acknowledgement from:

Steve Malizia, Town Administrator
Town of Hudson
12 School Street
Hudson, NH 03051

c. All protests shall be resolved in accordance with the municipality's protest policy and procedures, copies of which are maintained at the municipality.

MODIFICATIONS AFTER AWARD:

The Contract shall constitute the entire understanding between the parties, and it shall not be considered modified, altered, changed, or amended in any respect unless in writing and signed by the parties hereto. Such modification shall be in the form of a contract amendment executed by both parties.

CANCELLATION OF AWARD:

The Town reserves the right to cancel the award without liability to the Proposer at any time before a contract has been fully executed by all parties and is approved by the Town.

CONTRACT:

Any Contract between the Town and the Contractor shall consist of (1) the Request for Proposal (RFQ) and any amendments thereto and (2) the Contractor's proposal in response to the RFQ, (3) Form of Agreement. In the event of a conflict in language between documents (1), (2), and (3) referenced above, the provisions and requirements set forth and referenced in the RFB shall govern. However, the Town reserves the right to clarify any contractual relationship in writing and such written clarification shall govern in case of conflict. In all other matters, not affected by written clarification, if any, the RFQ shall govern. The Proposer is cautioned that this proposal shall be subject to acceptance without further clarification.

EXECUTION OF CONTRACT:

The successful Proposer shall sign (execute) the contract documents and shall satisfy all conditions set forth in the contract to enter into the contract and return such signed

documents to the Town, within ten (10) calendar days from the date mailed or otherwise delivered to the successful Proposer.

APPROVAL OF CONTRACT:

Upon receipt of the contract that has been fully executed by the successful Proposer, the Town shall complete the execution of the contract in accordance with local laws or ordinances and return the fully executed contract to the Contractor. Delivery of the fully executed contract, along with a Notice to Proceed and a Town purchase order, to the Contractor shall constitute the Town's approval of the contract with the Contractor.

FAILURE TO EXECUTE CONTRACT:

Failure of the successful Proposer to execute the contract within ten (10) calendar days from the date mailed or otherwise delivered to the successful Proposer shall be just cause for cancellation of the award.

DISQUALIFICATION:

Awards will not be made to any person, firm and/or corporation that has defaulted upon a contract with the Town, the State of New Hampshire or the Federal Government within the past 5 years. Awards will not be made to any principal owner or officers that have a 10% or greater interest in a firm or corporation that has defaulted upon a contract with the Town, the State of New Hampshire or the Federal Government within the past 5 years. Corporations must currently be in good standing with the Secretary of State's Office in the state of incorporation.

INSURANCE:

The successful Proposer shall procure and maintain insurance, in the amounts and coverage as set forth in this Request for Proposals, or otherwise required by the Town, at the Proposer's sole expense, with Town approved insurance companies, insuring against any and all public liability, including injuries or death to persons and damage to property, arising out of or related to the goods or Proposer's performance hereunder and shall furnish to the Town certificates of such insurance and renewals thereof signed by the issuing company or agent upon the Town's request. Such certificates shall name the Town of Hudson as an additional insured. Such policies shall provide for cancellation only subsequent to 30 days prior written notice to the Town and proof of subsequent insurance upon cancellation of prior policy.

The Town's examination of, or failure to request or demand, any evidence of insurance hereunder, shall not constitute a waiver of any requirement and the existence of any insurance shall not limit the Proposer's obligation under any provision hereof.

Except to the extent of comparable insurance acceptable to, or express waiver by the Town, the Proposer shall, or shall cause any carrier engaged by the Proposer, to insure all shipments of goods for full value.

If the contract with the Proposer involves the performance of work by the Proposer's employees at property owned or leased by the Town, the Proposer shall furnish such additional insurance as the Town may request in respect thereof, but in any event and without such request, workers' compensation insurance and unemployment compensation insurance as required by laws of the State of New Hampshire and public and automotive liability and property damage insurance. In no event shall such employees of the Proposer be deemed to be the employees of, or under the direction or control of the Town for any purpose whatsoever.

PERFORMANCE BOND

Unless specifically waived in the Proposal, upon execution of the Contract, the successful bidder shall furnish the Town with a surety bond or bonds equal to the sum of 100 percent of the Contract amount. If a bond is used, it shall meet the following requirements:

a. The form of the bond(s) shall be acceptable to the Town (See attached), and
b. The bonding company issuing the bond(s) shall be licensed to transact business in the State of New Hampshire, and
c. The bonding company issuing the bond(s) shall be listed on the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies," as published by the United States Department of the Treasury, Fiscal Service, Circular 570.

The Bonds shall guarantee the execution, faithful performance, and completion of the work to be done under the Contract, and payment in full of all bills and accounts for materials and labor used in the work. In the event the surety or bonding company fails or becomes financially insolvent, the Contractor shall file a new bond(s) in the amount designated by the Town, within 30 calendar days of such failure or insolvency.

Each bond shall clearly state the rate of premium and the total amount of premium charged. The current power of attorney for the person who signs for the surety company must be attached to the bond. The effective date of the power of attorney shall not precede the date of the bond. The effective date of the bond shall be on or after the execution date of the contract.

Failure by the successful bidder to obtain the required assurance of completion within the time specified, or within such extended period as the municipality may grant based upon reasons determined adequate by the municipality, shall render the bidder ineligible for award. The municipality may then either award the contract to the next responsible bidder or solicit new bids. The municipality may retain the ineligible bidder's bid guarantee.

DISAGREEMENTS AND DISPUTES:

All disagreements and disputes, if any, arising under the terms of any contract, either by law, in equity, or by arbitration, shall be resolved pursuant to the laws and procedures of the State of New Hampshire, in which state any contract shall be deemed to have been executed. No action at law, or equity, or by arbitration shall be commenced to resolve any disagreements or disputes under the terms of any contract, in any jurisdiction whatsoever other than the State of New Hampshire and Hillsborough County.

TERMINATION OF CONTACT FOR CAUSE:

If the Contractor shall violate any provision of the Contract, the Town shall have the right to terminate the Contract. To terminate the Contract, the Town shall provide written notice to the Contractor of such termination. Such written notice shall state the Contract violation(s) and be delivered to the Contractor's address as identified in the Contract Documents. This notice shall provide the Contractor with fifteen (15) calendar days from the date of delivery, to correct the violation(s) to the Town's satisfaction. Should the Contractor fail to satisfactorily correct all violations within (15) fifteen calendar days, the Town may terminate the contract immediately upon delivery of a Notice of Termination to the Contractor. Such termination shall become effective immediately or as otherwise determined by the Town. Upon termination, all finished or unfinished work, services, plans, data programs and reports prepared by the Contractor under the Contract shall become the Town's property. The Town may also terminate this Contract in accordance with any other applicable Contract provision.

Notwithstanding the above, the Contractor shall not be relieved of liability to the Town for damages sustained by the Town by virtue of any breach of any contract, and the Town may withhold any payments until such time as the exact amount of damages due the Town is determined.

TERMINATION FOR THE CONVENIENCE OF THE TOWN:

The Town may terminate any contract at any time by giving written notice to the Vendor of such termination and specifying the effective date thereof, at least fifteen (15) days before the effective date of such termination.

In that event, all finished or unfinished work, services, documents and materials shall become the Town's property. If any Contract is terminated by the Town as provided herein, the Vendor will be paid an amount which bears the same ratio to the total compensation as the services covered by any contract, less payments of compensation previously made.

PATENT PROTECTION:

The successful Proposer agrees to indemnify and defend the Town of Hudson from all claims and losses resulting from alleged and actual patent infringements and further agrees to hold the Town of Hudson harmless from any liability arising under RSA 382-A, 2-312 (3). (Uniform Commercial Code).

OWNERSHIP OF REPORTS:

All data, materials, plans, reports and documentation prepared pursuant to any contract between the Town of Hudson and the successful Proposer shall belong exclusively to the Town.

ASSIGNMENT PROVISION:

The successful Proposer hereby agrees that it will assign to the Town of Hudson all cause of action that it may acquire under the anti-trust laws of New Hampshire and the United States as the result of conspiracies, combination of contracts in restraint of trade which affect the price of goods or services obtained by the Town under this contract if so requested by the Town of Hudson.

PAYMENT:

Payment will be made within thirty (30) days of the completion of the work based upon the payment schedule listed in the Supplementary Conditions after receipt of invoice by the Town.

TAX:

The Town is exempt from all sales and Federal excise taxes. The Town's tax exemption certificate will be provided to the successful Contractor upon request. Please bill less these taxes.

FUNDING OUT:

The Town of Hudson's obligations to pay any amount due under a contract are contingent upon availability and continuation of funds for the purpose. The Town may terminate the contract at any time, due to the non-appropriation of funds, and all payment obligations of the Town cease on the date of termination.

ASSIGNMENT OR SUB-CONTRACTING:

None of the work or services covered by the contract shall be assigned in full or in part, or sub-contracted without the prior approval of the Town.

PRICING:

Unless otherwise specified all prices listed are firm for the term of the contract. All prices should include all labor, material and transportation costs, and any discounts offered. No fuel surcharges shall be allowed at any time.

AUDIT:

For a period of at least three (3) years after completion of any contract, it is the responsibility of the Contractor to make available at the Contractor's place of business, upon demand, all

price lists, documents, financial records and other records pertaining to purchases made and /or work performed under contract for the purposes of audit by the Town of Hudson.

INSPECTION & EVALUATION:

The Town of Hudson reserves the right to inspect the Contractor's facilities during operating hours to determine that the level of inventory is adequate for the Town's needs. The conditions and operations of the facility shall be taken into consideration in making the award of this contract.

FUGITIVE NOISE ORDINANCES

All work shall be conducted in conformance with the Town's Code Part II General Legislation

1. Chapter 249-4, Prohibited Noise Emissions and Conditions

The Town Code can be viewed on-line at http://ecode360.com/HU1110

GUARANTEES & WARRANTY:

All parts and labor related to contracts must be guaranteed and include a 12 month warranty from the date of acceptance by the Town. If any work is unable to be guaranteed, the contractor must inform the Town, in writing, prior to the delivery of an item or any work being performed. Non-guaranteed work must be offered at a discount rate from the proposal prices. **Inspection, testing and final determination of non-warranty work shall be performed at no cost to the Town.**

FORCE MAJEURE:

Neither party shall be liable for any inability to perform its' obligations under any subsequent contract due to war, riot, insurrection, civil commotion, fire, flood, earthquake, storm or other act of God.

SEVERABILITY:

If any of this Request for Proposals or subsequent contract are held to be invalid or unenforceable, it will be construed to have the broadest interpretation which would make it valid and enforceable under such holding. Invalidity or the inability to enforce a term or condition will not affect any of the other this Request for Proposals or subsequent contract.

PROVISION REQUIRED BY LAW DEEM INSERTED

Each and every provision and clause required by law to be inserted in this Request for Proposals and any subsequent Contract shall be deemed to be inserted herein and this Request for Proposals and Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not

correctly inserted, then upon the application of either party, the Request for Proposals and/or Contract shall forthwith be physically amended to make such insertion or correction.

DISADVANTAGED BUSINESS ENTERPRISES

The Town hereby notifies all Contractors that it will affirmatively insure that in any contract entered into pursuant to this Request for Proposals, disadvantaged business enterprises will be afforded full opportunity to submit proposals in response to this request and will not be discriminated against on the grounds of race, color, national origin, religion, sex, age or disability in consideration for an award.

NON-DISCRIMINATION

Contracts for work resulting from this Request for Proposals shall obligate the Contractor and the Contractor's subcontractors not to discriminate in employment practices on the grounds of race, color, national origin, religion, sex, age or disability. Statements as to non-discriminatory practices may be requested from the successful Vendor(s).

DEFINITIONS:

Proposal shall also mean quotation, bid, offer and qualification/experience statement.

Vendors shall also mean Proposers, offerors, bidders, contractors or any person or firm responding to a Request for Proposals.

Contract shall also mean agreement.

GOVERNING LAW:

The Laws of the State of New Hampshire shall govern all contracts entered into by the Town of Hudson. Any disputes shall be resolved within the venue of the State of New Hampshire and Hillsborough County.

FAILURE TO ACKNOWLEDGE THIS REQUEST FOR PROPOSALS MAY RESULT IN WITHDRAWAL FROM THE PROPOSAL LIST FOR THIS COMMODITY OR SERVICE.

FAILURE TO COMPLY WITH THESE REQUIREMENTS COULD RESULT IN THE CANCELLATION OF AN ORDER OR CONTRACT.

PROPOSAL SUBMISSION CHECKLIST

In order to be considered responsive, each prospective vendor must submit the following documents, in **one (1) original and one (1) identical copies** as part of its proposal:

1. Proposal Document as outlined above
2. Specifications Exception Form
3. Alternate Form W-9
4. Town of Hudson Indemnification Agreement

The successful contractor must submit, prior to contract signing, its insurance certificate (naming the Town of Hudson) that meets the minimum required types and levels of coverage. In addition, as noted in the RFP the Contract will be required to provide and Performance bond to the Town.

PROPOSAL FORM

CONSTRUCTION SERVICES FOR
PUBLIC WORKS FUEL PUMP STATION
TOWN OF HUDSON, NEW HAMPSHIRE

THE UNDERSIGNED HEREBY OFFERS TO PROVIDE CONSTRUCTION SERVICES FOR THE FOLLOWING PRICES

1. Construction Services :

Construction services for the project listed above.

$_____

Length of the warranty for labor shall be one year from the date of Project acceptance

Length of the warranty for materials shall be one year from the date of Project acceptance

The warranty shall include parts, labor, and travel to and from the site to remedy any warranty repairs.

The undersigned acknowledges:

1. That he/she is an authorized agent of the vendor submitting this proposal
2. The receipt of the following addenda:

   _____

3. The firm submitting this bid has never defaulted on any municipal, state, federal or private contract
4. The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work.
5. The undersigned hereby certifies that he (has) (has not) (CIRCLE ONE) performed work subject to the President's Executive Order No. 11246 entitled "Equal Employment Opportunity."
6. The undersigned hereby acknowledges that he has read this proposal in its entirety and understands and agrees to all provisions contained herein.

Company: _____

Signed by: _____

Printed or typed name: _____

Address: _____

Telephone number: _____**fax number:** _____

Toll free number: _____**e-mail:** _____

Cell phone number:_____

Primary point of contact:_____

Payment terms and conditions:_____

Please fill out, sign and return to:

Christine Strout- Lizotte
Town Clerk's Office
12 School Street, Hudson, NH 03051
603-886-6003; 603-594-1142 (Fax)
cstrout-lizotte@hudsonnh.gov

Due Date/Time: JULY 27, 2023 Not Later Than 10:00 AM

SPECIFICATIONS EXCEPTION FORM

CONSTRUCTION SERVICES FOR
PUBLIC WORKS FUEL PUMP STATION
TOWN OF HUDSON, NEW HAMPSHIRE

In the interest of fairness and sound business practice, it is mandatory that you state any exceptions taken by you to our specifications.

It should not be the responsibility of the Town of Hudson to ferret out information concerning the materials, which you intend to furnish.

If your bid/quotation does not meet all of our specifications, you **must** so state in the space provided below:

_____

_____

_____

_____

Proposals on equipment, vehicles, supplies, service and materials not meeting specifications may be considered by the Town, however, all deviations must be listed above.

If your proposal does not meet our specifications, and your exceptions are not listed above, the Town of Hudson may claim forfeiture on your proposal bond, if submitted.

Signed:_____
I DO meet specifications

Signed: _____
I DO NOT meet specifications as listed in this bid; exceptions are in the space provided.

Failure to submit this form with your RFP response may result in your Proposal being rejected as unresponsive.

Alternate Form W-9 (rev 01/2011)	**Request for Taxpayer Identification Number and Certification**	Give form to the requester. Do not send to the IRS.

Name (as shown on your income tax return)

Business name/disregard entity name, if different from above

Check appropriate box for federal tax classification (required): ☐ Individual/ Sole proprietor ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate ☐ Limited Liability Company – Enter the tax classification (C= Corporation, S-S Corporation, P= Partnership)_ _ _ _ _ _ ☐ Other (see instructions)

☐ Exempt payee

Address (number, street, and apt. or suite no.)

City, state, and ZIP code

Requester's name and address (optional)
City of Concord
41 Green Street
Concord NH 03301

List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3. **Note.** If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Social Security number –	**Employer identification number** –

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. citizen or other U.S. person (defined below).

Certification instructions: You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 4.

Sign Here	**Signature of U.S. Person**	**Date:**

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA. Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to: 1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued), 2. Certify that you are not subject to backup withholding, or 3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income. **Note.** If a requester give you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9. Pursuant to IRS Regulations, you must furnish your Taxpayer IRS Identification Number (TIN) to the City whether of not you are required to file tax returns. If this number is not provided, you may be subject to required withholding on each payment made to you. To avoid this withholding & to ensure that accurate tax information is reported to the IRS, **A RESPONSE IS REQUIRED.**

CONSTRUCTION SERVICES FOR
PUBLIC WORKS FUEL PUMP STATION
TOWN OF HUDSON, NEW HAMPSHIRE

THE FOLLOWING INDEMNIFICATION AGREEMENT SHALL BE, AND IS HEREBY A PROVISION OF ANY CONTRACT

The successful contractor agrees to indemnify, defend and save harmless the Town, its officials, officers, agents and employees from any and all claims and losses accruing or resulting to any and all contractors, subcontractors, suppliers, laborers and any other person, firm, or corporation furnishing or supplying work, services, materials or supplies in connection with the performance of this contract, and from any and all claims and losses accruing or resulting to any person, firm or corporation which may be injured or damaged by the contractor in the performance of this contract. In any case, the foregoing provisions concerning indemnification shall not be construed to indemnify the Town for damage arising out of bodily injury to persons or damage to property caused by or resulting from the sole negligence of the Town or its employees. This indemnification shall survive the expiration or early termination of this contract.

Company_____

Taxpayer identification number_____

Authorized signature_____

Date_____

Address_____

Telephone_____

Toll-free number_____

Fax number_____

E-mail address_____

CONSTRUCTION SERVICES FOR
PUBLIC WORKS FUEL PUMP STATION
Town of Hudson
Insurance Requirements for <u>All Contractors</u>

Additional Coverage is Required if Checked	***Minimum Limits Required***
<u>Commercial General Liability</u>	
General Aggregate	$2,000,000
Products-Completed Operations Agg.	$2,000,000
Personal and Advertising	$1,000,000
Each Occurrence Injury	$1,000,000
Fire Damage (Any One Fire)	$ 50,000
Medical Expense (Any One Person)	$ 5,000
☐ Occurrence	
☐ Claims Made	
Additional Coverage to Include	
☐ Owners & Contractors' Protective – Limit	NA
☐ Underground/Explosion and Collapse	NA
<u>Commercial Automobile Liability</u>	
Combined Single Limit	$1,000,000
☐ Any Auto, Symbol 1	
☐ Include Employees as Insured	
Additional Coverage to include:	
☐ Garage Liability	NA
☐ Garage Keepers Legal Liability	NA
<u>Workers Compensation</u>	
NH Statutory including Employers Liability	
- Each Accident/Disease-Policy Limit/Disease-Each Employee	$100,000/$500,000/$100,000
<u>Commercial Umbrella</u>	
May be substituted for higher limits required above	$<u>1,000,000</u>_____
☒Follow Form Umbrella on ALL requested Coverage	
<u>Other</u>	
☐ 1. Professional/Errors & Omissions	NA
☐ 2. Builders Risk – Renovation Form	
All Risk completed value form including Collapse	NA
Sublimit for Soft Cost Coverage	NA
☐ 3. Installation Floater (Equipment)	NA
☐ 4. Riggers Liability	NA
☐ 5. Environmental – Pollution Liability	NA
☐ 6. Aviation Liability	NA
☐ 7. Watercraft – Protection & Indemnity	NA

(X) **<u>The Town of Hudson must be named as Additional Insured with respect to general, automobile and umbrella liability.</u>**

NOTICE OF AWARD

Dated _____ , 20

TO: _____
(BIDDER)

ADDRESS: _____

OWNER'S PROJECT NO: _____

PROJECT: Construction Services for PUBLIC WORKS FUEL PUMP STATION

OWNER'S CONTRACT NO: _____

CONTRACT FOR: Construction Services for PUBLIC WORKS FUEL PUMP STATION

(Insert name of contract as it appears in the Bid Documents)

You are notified that your Bid dated _____ for the above Contract has been considered. You are the apparent successful bidder and have been awarded a contract for:

Hudson – RFP 23

Construction Services for PUBLIC WORKS FUEL PUMP STATION

(Indicate total Work, alternates or sections of Work awarded)

The Contract Price of your contract is _____

_____ Dollars ($ _____).

4 (four) copies of each of the proposed Form of Agreement, and Performance and Payment Bond forms accompany this Notice of Award.

You must comply with the following conditions precedent within **five** days of receiving this Notice of Award.

1. You must deliver to the OWNER all of the fully executed counterparts of the Agreement.

2. You must deliver with the executed Agreement the Contract Security (Bonds) as specified in the Information for Bidders and General Provisions.

3. (List other conditions precedent).

List of suppliers

Performance and Payment Bonds (2 copies)

Insurance Certificates (2 copies) **- Please note that in accordance with General Condition 2.1.2 of the Contract Documents, the Municipality must be named as additional insureds.**

Failure to comply with these conditions within the time specified will entitle **OWNER** to consider your bid abandoned, to annul this Notice of Award and to declare your Bid Security forfeited.

Within ten days after receipt of acceptable performance BOND, payment BOND and agreement signed by the party to whom the Agreement was awarded, the **OWNER** will return to you one fully signed counterpart of the Agreement with the Contract Documents attached.

Town of Hudson
(OWNER)

By _____
(Authorized Signature)

_____
(TITLE)

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged

By _____

The _____ day of _____ , 20 _____

By _____

Title _____

Copy to ENGINEER
(Use Certified Mail, Return Receipt Requested)

GENERAL CONDITIONS OF THE

CONTRACT FOR CONSTRUCTION

CONSTRUCTION SERVICES FOR
PUBLIC WORKS FUEL PUMP STATION
TOWN OF HUDSON, NH

JULY 2023

Prepared by:

Engineering & Public Works Department
12 School Street
Hudson, NH 03051

General Conditions

Table of Contents

Page

GENERAL CONDITIONS TO THE CONTRACT

Dated this _____ day of _____ Two Thousand and Twenty One

By and Between:

Municipalities: Town of Hudson, New Hampshire

and

General Contractor: _____
(Company)
_____
(Address)
_____
(City, State, Zip Code)

Engineer:

ARTICLE 1 – DEFINITIONS

1.1 GENERAL

The most recent date of issue of publications referenced by the contract documents, including interim publications, that precedes the date of receipt of bid for the Project shall apply unless stated otherwise in the contract documents.

1.1.1 Acceptance. The formal written acceptance by the Municipalities of the contract work as described herein which has been completed in all respects in accordance with the Plans and Specifications and any modifications previously approved.

1.1.2 Addendum (addenda). Contract revisions developed after advertisement and before opening Bids.

1.1.3 Advertisement. A public announcement, inviting Bids for work to be performed or materials to be furnished.

1.1.4 Agreement. The written instrument which is evidence of the agreement between the Municipalities and Contractor.

1.1.5 Approved Material. 1. Material obtained from within the limits of the Project or from outside sources suitable for the intended use and approved by the Engineer. 2. Manufactured material approved by the Engineer for use in the work.

1.1.6 Award The acceptance of a proposal by the Municipalities.

1.1.7 Bid. The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

1.1.8 Bid Bond. A proposal guarantee as outlined in the Instructions to Bidders for Contracts.

1.1.9 Bidder. The individual, partnership, firm, corporation, or any combination thereof, or joint venture, submitting a Bid in accordance with the bidding requirements.

1.1.10 Bidding Requirements. The advertisement or invitation to Bid, instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

1.1.11 Change Order. A document recommended by the Engineer, signed by the Contractor and Municipalities authorizing changes in the plans or quantities or both, within the scope of the Contract, and establishing the basis of payment and time adjustments for the Work affected by the changes.

1.1.12 Completion. Completion of the Project occurs when the Contractor has completed all work required by the Contract and has satisfactorily executed and delivered

to the Engineer all documents, certificates and proofs of compliance required by the Contract.

1.1.13 Construction Zone. The area shown on the plans in which the contract work is to be performed.

1.1.14 Contract. The written agreement between the Municipalities and the Contractor setting forth the obligations of the parties there under, including, but not limited to the performance of the Work and the basis of payment.

1.1.15 Contract Bonds: The approved form of security including a Performance Bond and a Labor and Materials Payment Bond executed by the Contractor and his Surety or Sureties, guaranteeing complete execution of the Contract and all supplemental agreements pertaining thereto, including the payment of all legal debts pertaining to the construction of the project.

1.1.16 Contract Documents. Those items so designated in the Agreement. Including but not limited to information supplied to bidders, bid, bid bond, Agreement, payment bond, performance bond, notice of award, notice to proceed, change orders, drawings, specifications and addenda.

1.1.17 Contract Administrator/Project Engineer. The field representative of the Engineer having direct supervision of the administration of the Contract.

1.1.18 Contract Price. Those monies payable to the Contractor pursuant to the Contract terms for completion of the Work as stated in the Agreement.

1.1.19 Contract Time. The time allowed for completion of the contract, including authorized time extensions.

1.1.20 Contractor/Prime Contractor. The individual or entity with whom the Municipalities has entered into Agreement.

1.1.21 Day. Unless otherwise indicated, this term will mean a calendar day.

1.1.22 Delay. Any event, action, force, or factor that causes the established Contract Time to be exceeded for performance of the Contract.

1.1.23 Department/Municipalities/Owner. The Municipalities designated as the party of the first part to the Contract .

1.1.24 Differing Site Conditions. Subsurface or latent physical conditions that, (1) differ materially from those indicated in the Contract, or (2) differ materially from conditions normally encountered or those conditions generally recognized as inherent in the nature of the Work required in the Contract, or (3) are unknown conditions of an unusual nature.

1.1.25 Engineer. The New Hampshire licensed Engineering Firm or Engineer with whom the Municipalities has contracted, who is responsible for engineering supervision of the work, acting directly or through his duly authorized representatives.

1.1.26 Expression. By or to the Engineer. In order to avoid cumbersome and confusing repetition of expressions in these specifications, it is hereby provided that any and all of the following words or any form of such words, unless clearly indicated otherwise, shall be understood to be followed by the words "by the Engineer" or "to the Engineer": Accepted, approved, authorized, condemned, considered, or deemed necessary, contemplated, designated, determined, directed, disapproved, established, given, indicated, insufficient, ordered, permitted, rejected, required, reserved, satisfactory, specified, sufficient, suitable, suspended, unacceptable or unsatisfactory.

1.1.27 Extra Work. Work performed by the Contractor not originally specified in the Contract, but found essential to the satisfactory completion of the project.

1.1.28 Force Account. A basis of payment for the directed performance of Work with payment based on the actual cost for labor, materials, and equipment with consideration for overhead and profit.

1.1.29 Hazardous Material (toxic waste). Shall mean material as defined by RSA 147-A.

1.1.30 Major and Minor Contract Items. Any contract item having an original value in excess of five percent of the original Contract total for contracts of $1,000,000.00 or less, or three percent of the original Contract total for contracts greater than $1,000,000.00 shall be considered as a major item or items. All other contract items are considered as minor.

1.1.31 Notice to Proceed. Written notice to the Contractor to proceed with the Contract work, including the beginning of Contract time when applicable.

1.1.32 Project. The specific section(s) of the Municipal facilities together with all appurtenances to be constructed under the Contract.

1.1.33 Proposal Form. The prescribed form on which the Municipalities requires the Bid be submitted.

1.1.34 Prosecution of Work. A document included in the Contract which gives the Contractor specific requirements and information unique to the Project, allowing for the satisfactory performance of the Work. It also includes the final and any intermediate completion dates.

1.1.35 Qualified Products List (QPL). A list of products prequalified by the Engineer as meeting the Contract requirements for specified materials to be incorporated into the Work. The list is maintained and updated yearly by the NHDOT Bureau of Materials and Research.

1.1.36 Site. The Project area provided to perform the Work.

1.1.37 Solid Waste. Shall mean material as defined by RSA 149-M.

1.1.38 Special Attentions. Notices calling bidders' attention to issues applicable to an individual project.

1.1.39 Special Provisions. Additions and revisions to the Standard and Supplemental Specifications applicable to an individual project.

1.1.40 Specifications. The compilation of Standard Specifications (including these Municipal General Conditions), Supplemental Specifications, Special Provisions, Special Attentions and other requirements for the performance of prescribed work.

1.1.41 Specified Completion Date. The date on which the Contract work is specified to be completed.

1.1.42 Storm Water Pollution Prevention Plan, (SWPPP). Per Environmental Protection Agency requirements.

1.1.43 Subcontractor. An individual, partnership, firm, corporation, or any combination thereof, or joint venture, to which the Contractor sublets any part of the Contract.

1.1.44 Subsidiary and Subsidiary Item. These terms are used to indicate work for which no direct payment will be made. Such work is considered to be incidental to items having contract prices, and the bid prices submitted by the Contractor shall be sufficient to absorb the cost of all work designated as subsidiary or as subsidiary items.

1.1.45 Superintendent. The Contractor's authorized representative in responsible charge of the work.

1.1.46 Supplementary Agreement. A written agreement recommended by the Engineer, between the Contractor and the Municipalities, for the performance of work by the Contractor at agreed prices under items not originally included in the Contract.

1.1.47 Surety. The corporation, partnership, or individual, other than the Contractor, executing a bond furnished by the Contractor.

1.1.48 Traffic Control Plan (TCP). A document included in the Contract which gives the Contractor specific requirements and procedures for controlling traffic during the course of construction. It also allows the Contractor to submit for approval variations of such plan.

1.1.49 Wetland. "An area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support and that under normal conditions does support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wetlands include, but are not limited to swamps, marshes, bogs, and similar areas." (NH Code of Administrative Rules, Chapter Wt 101.87, 1997)

1.1.50 Work. The furnishing of all labor, materials, equipment, and incidentals necessary or convenient to the successful completion of the Project, and the carrying out of the duties and obligations imposed by the Contract.

1.1.51 Working Drawings. Temporary bridge plans, cofferdam plans, water diversion structure plans, plans of precast elements to be designed by the Contractor, shop fabrication drawings, erection plans, falsework plans, temporary support systems, bending diagrams when required for reinforcing steel, scaffolding plans and bridge analysis, detour plans, sign structure plans, traffic signal poles and mast arm plans, Storm water Pollution Prevention Plan (SWPPP), erosion control plans, or any other supplementary plans or similar data required of the Contractor to control the Work and its prosecution.

ARTICLE 2 - PRELIMINARY MATTERS

2.1 DELIVERY OF BONDS AND EVIDENCE OF INSURANCE

2.1.1 Concurrent with the execution of the Construction Contract, Contractor shall deliver to the Municipality such bonds as may be required by the Contract. Performance and Labor and Material Payment Bonds will be provided, unless specifically deleted by the Invitation for Bids.

2.1.2 Prior to the start of Work, the Contractor shall deliver to the Municipality proof of insurance as required under the Contract including but not limited to certificates of insurance naming the Municipality and its agents/consultants as additional insureds.

2.1.3 The Contractor shall indemnify, defend and save-harmless the Municipality and their officers, agents, and employees from and against any and all claims, liabilities, suits or penalties arising out of (or which may be claimed to arise out of) negligent acts or omissions of the Contractor or Subcontractors in the performance of Work covered by the Contract. This responsibility shall survive the termination of the Contract. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the Municipality, which immunity is hereby reserved by the Municipality.

2.1.4 Liability insurance for damages imposed by law of the kinds and amounts specified herein shall be obtained and maintained by the Contractor. The insurance obtained shall cover all operations under the Contract whether performed by the Contractor or Subcontractor of any tier and shall be maintained until Acceptance.

2.1.5 Each policy shall contain a clause prohibiting cancellation or modifications of the policy earlier than 30 days, or 10 days in cases of non-payment of premium, after written notice thereof has been received by the Municipality.

2.1.6 All insurance requirements shall be the responsibility of the Contractor. The Contractor shall require Subcontractors to maintain similar coverage.

2.1.7 It is specifically agreed between the parties executing this Contract that it is not intended by the Contract provisions to make the public or any member thereof a third party beneficiary hereunder, or to authorize anyone not a party to the Contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of the Contract. The duties, obligations, and responsibilities of the parties to this Contract with respect to third parties shall remain as imposed by law.

2.1.8 Insurance coverage shall be consistent with limits outlined in Subsection 107.11 of the NHDOT Standard Specifications for Road and Bridge Construction.

2.2 HAZARDOUS MATERIALS

2.2.1 . The Contractor shall also be aware of laws and regulations relating to hazardous materials which may be encountered during construction operations, either within project limits or at material sites off the project. The health and safety of employees, the general public, and the potential of damage to the overall environment is possible if hazardous materials are not recognized, reported, and the appropriate action taken to dispose of, remove from the site, or otherwise contain the possible contaminants.

2.2.2 State laws such as RSA 141-E, Asbestos Management and Control RSA 147-A, Hazardous Waste Management, and RSA 149-M, Solid Waste Management identify the major areas of concern. Parts Env-Wm 100-110, Env-Wm 101-300, 2100-3700, and Env-Wm 3900 of the New Hampshire Code of Administrative Rules identify various contaminants related to hazardous waste, solid waste, solid waste and asbestos and their management, respectively.

2.2.3 If any abnormal condition is encountered or exposed that indicates the presence of a hazardous material or toxic waste, construction operations shall be immediately suspended in the area and the Engineer notified. No further work shall be conducted in the area of the contaminated material until the site has been investigated and the Municipalities have given approval to continue the work in the area. The Contractor shall fully cooperate with the Engineer and perform any remedial work as directed. Work shall continue in other areas of the Project unless otherwise directed.

2.2.4 Exposure to hazardous materials may result from contact with, but not necessarily limited to, such items as drums, barrels, other containers, waste such as cars, batteries, and building construction debris. Containers leaking unknown chemicals or liquids, abandoned cars leaking petroleum products, batteries leaking acid, construction debris which may include asbestos, or any other source of suspected hazardous material found within excavation areas or stockpiled on land within construction limits shall be referred to the Department of Environmental Services so that a proper identification of the materials may be made and disposal procedures initiated as required.

2.2.5 Disposition of the hazardous material or toxic waste shall be made under the requirements and regulations of the Department of Environmental Services. Work required to dispose of these materials shall be performed under a Supplemental Agreement or Contract item, if included in Contract. If the waste material disposal requires special procedures, the Municipalities will make arrangements to dispose of the material, either by the Contractor or by other parties.

2.3 COMMENCEMENT OF CONTRACT TIMES

2.3.1 Execution and Approval of Contract. The signed Contract, together with the Contract Bond, certificate of insurance and the Disadvantaged Business Enterprise forms, if required, shall be returned to the Municipalities within 10 days after the date of notice that the Proposal has been accepted. The Contract will not be considered approved until it has been fully executed by all of the parties to the Contract.

2.3.2 Failure to Execute Contract. If the successful bidder fails to execute the Contract and file acceptable bond within 5 days after the date of notice of acceptance of the Proposal, the Municipalities may cancel the notice of award and retain the bidder's Proposal Guarantee which shall become the property of the Municipalities, not as a penalty, but in liquidation of damages sustained. Contract award may then be made to the next lowest responsible bidder or the Work may be readvertised.

2.3.3 Contract Time/Notice to Proceed. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the 90^{th} day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.3.4 Starting the Work. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.4 BEFORE CONSTRUCTION BEGINS

2.4.1 Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2.4.2 Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

2.4.3 A preconstruction conference shall be held by the Contractor prior to the Work commencing. At this time the Contractor shall submit to the Engineer and Municipalities

for approval a Progress Schedule outlining the intended schedule of the Work. All parties of interest including but not limited to utilities, Municipal officials, sub-contractors, etc. shall be invited to attend.

ARTICLE 3 - CONTRACT DOCUMENTS

3.1 INTENT OF CONTRACT

3.1.1 The intent of the Contract is to provide for the construction and completion in every detail of the work it describes. The Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the Work under the Contract.

3.1.2 Clarifications and/or interpretations of the Contract Documents shall be at the discretion of the Engineer. All requests by Contractor for same shall be made in writing to the Engineer.

3.1.3 The Specifications, Supplemental Specifications, Plans, Special Provisions, other special Contract requirements and all supplemental documents are essential parts of the Contract and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete Contract. In case of discrepancy between these Contract documents, calculated dimensions, unless obviously incorrect, will govern over scaled dimensions and the parts of the Contract will prevail in the following descending order:

> Municipal General Conditions; Special Contract Requirements; Special Provisions; Plans; Supplemental Specifications; Standard Specifications including Standard Details, Standard Plans; Including, but not limited to, Special Attentions in the mentioned descending order.

3.1.4 To the extent applicable no Local, State or Federal code and/or regulation will be deemed waived as a result of the conditions and /or specifications contained herein.

3.1.5 Conflicts between the requirements of these General Conditions and specifications incorporated herein including but not limited to the NHDOT Standard Specifications for Road and Bridge Construction as it may be amended shall be interpreted to the benefit of the Municipalities at its sole discretion unless the Contractor notifies Municipalities of said conflict prior to submission of bids. If notified in writing of a conflict in specifications prior to bid the Municipalities shall take such action as it deems appropriate.

ARTICLE 4 - SUSPENSION OF WORK

4.1 MUNICIPALITIES MAY SUSPEND WORK

4.1.1 Municipalities may suspend all or any portion of the Work for any reason during performance of the Contract. Suspension of all or any portion of the Work will be done by written notice to the Contractor.

4.1.1.1 If the suspension or delay resulting from the written order is considered unreasonable, or not customary, or inherent to the construction industry; the Contractor shall submit a written request providing the reasons and justification for any Contract adjustment considered necessary as a result of the suspension or delay. The written request for Contract adjustment must be submitted to the Engineer in writing within seven days following receipt of the notice to resume work. A Contract adjustment will not be made unless the request for adjustment has been submitted within the prescribed time.

4.1.1.2 There will be no Contract adjustment under the provisions of this Subsection if the Work would have been suspended or delayed by any other cause, or for which an adjustment is provided for, or excluded under any other term or condition of the Contract.

4.1.1.3 The request for a Contract adjustment will be reviewed by the Engineer. If there is agreement that, (1) there has been an increase in the Contract performance cost or time as a result of such suspension and (2) the suspension was caused by conditions beyond the control of and not the fault of the Contractor, Contract suppliers, or subcontractors at any approved tier; and not caused by weather, an adjustment will be made to the Contract by Change Order.

ARTICLE 5 - CHANGES IN THE WORK

5.1 DIFFERING SITE CONDITIONS

5.1.1 If differing site conditions are encountered at the work site, the Contractor shall promptly notify the Municipalities and Engineer in writing. No further disturbance of the site or performance of the affected work is to be done after the alleged differing site conditions are noted unless directed otherwise in writing by the Engineer. If the Municipalities and Engineer determine the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the Contract, an adjustment, excluding loss of anticipated profits, will be made and the Contract modified in writing accordingly. The Engineer will notify the Contractor whether or not an adjustment in the Contract is warranted.

5.1.2 After receipt of written notice as required by paragraph 5.1.1, Engineer will promptly review the pertinent condition, determine the necessity of obtaining additional exploration or tests with respect thereto, and advise Municipalities in writing (with a copy to Contractor) of Engineer's findings and conclusions.

5.2 EXTRA WORK

5.2.1 Extra Work shall be performed by the Contractor in accordance with the Specifications and as directed, and will be paid for as provided herein. When the Contract provides for payment of certain work under Extra Work, no further order from the Engineer will be necessary for such work; otherwise, when the Engineer determines that Extra Work is to be performed, an Extra Work Order will be issued.

5.2.2 The Contract Price or the Contract Times, or both, may be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

5.2.2.1 Contractor knew or should have known of the existence of such conditions at the time Contractor made a final commitment to Municipalities respect of Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

5.2.2.2 The existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

5.2.2.3 Contractor failed to give prompt written notice as required by paragraph 5.1.

5.2.3 If Municipalities and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefore as provided herein. However, Municipalities, Engineer, and Engineer's Consultants shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

5.3 CHANGES IN CHARACTER OF WORK

5.3.1 The Engineer reserves the right to provide written notice to the Contractor at any time during the Contract to change Major Item quantities or make other alterations considered necessary to satisfactorily complete the Contract.

5.3.2 Such changes in quantities and alterations do not invalidate the Contract nor release the Contract Surety.

5.3.3 If the directed changes require additional time to complete the Contract, adjustments in the Contract Time shall be determined by the Engineer.

5.3.4 Payments for the alterations in the Work or changed Major Item quantities will be made as provided under Article 9.

5.3.5 The basis of the Contract adjustment shall be agreed upon before the performance of the Work. If a basis cannot be agreed upon, prosecution of the Work may be ordered by the Municipalities under the Force Account provisions of Subsection 9.4.3.3.

ARTICLE 6 - SCOPE OF WORK

6.1 MAINTENANCE OF TRAFFIC

6.1.1 The Contractor shall keep all roads open to all traffic during construction. The Contractor shall keep the signals operational during construction. Where provided in the Contract, or approved by the Engineer, traffic may be bypassed over an approved detour route. In the event a Contractor proposes to construct detours not shown on the Plans, the Contractor shall submit proposed detour plans for documentation, showing the proposed location, alignment, grade, cross section, and signing. All detours shall be kept in a safe and adequate condition. The Contractor shall furnish, erect, and maintain barricades, warning signs, delineators, striping, flaggers, and pilot cars in accordance with the MUTCD and Sections 618, 619 and 632 of the New Hampshire Department of Transportation Standard Specifications for Road and Bridge Construction. The Contractor shall bear all expense of maintaining the section of road undergoing improvement including all temporary approaches or crossings and intersections with trails, roads, streets, abutters, and other features as may be necessary. Payment for the furnishing, installation, and maintenance of traffic control will be as provided in the Agreement. No other additional compensation for maintenance will be made.

6.1.2 The Contractor shall make passable and open to traffic the sections of the project and temporary roadways as agreed upon between the Contractor and the Engineer for the accommodation of necessary traffic during the anticipated period of suspension. During this suspension period the maintenance of the temporary roadway and sections of the Project will be the responsibility of the Contractor.

6.1.3 When Work is suspended due to seasonal or climatic conditions or, for failure to correct conditions unsafe for the workers or the general public, for failure to carry out orders of the Engineer or for other reasons caused by the Contractor, all costs for maintenance of the roadway to accommodate traffic during the suspended period shall be borne by the Contractor.

6.2 CONTRACTOR'S RESPONSIBILITIES

6.2.1 Until Acceptance of the project by the Engineer, the Contractor is responsible for and shall protect the Work against injury or damage from all causes whether arising from the execution or the nonexecution of the Work except as provided herein.

6.2.2 The Contractor, at his or her expense, shall rebuild, repair, restore, and make good all losses, injuries, or damage to any portion of the Work from any cause before Acceptance, except for loss, injury or damage due to causes not under the control and without the fault or negligence of the Contractor. Such causes include, but are not restricted to, natural disasters such as earthquake, tidal wave, tornado, hurricane, or other cataclysmic phenomenon of nature; acts of a public enemy; acts of governmental authorities; and errant vehicles. The Contractor shall repair damage due to such excepted causes and shall be paid at the contract prices or in the same manner as Extra Work as determined and ordered by the Engineer. Causes under the control of the Contractor shall be any cause that he or she could have prevented by reasonable and foreseeable action and shall include damage caused by normal weather conditions.

6.2.3 In case of suspension of the Work from any cause, the Contractor is responsible for the Work under the Contract and shall prevent damage to the project, provide for normal drainage, and erect necessary temporary structures, signs, or other facilities. The Contractor shall also maintain in an acceptable growing condition all living material in newly established plantings, seedings, and soddings furnished under the Contract, and protect new tree growth and other designated vegetative growth against injury. When work is suspended for reasons of differing site conditions, the costs during the period of suspension shall be borne by the Contractor.

6.2.4 The Contractor shall comply with all Federal, State, and local laws and regulations controlling pollution of the environment. Pollution of streams, lakes, ponds and reservoirs with fuels, oils, bitumens, chemicals, or other harmful materials and pollution of the atmosphere from particulate and gaseous matter shall be avoided to the extent practicable.

6.2.5 Work performed and materials furnished shall be uniform in character and meet the Contract dimensions and material requirements according to tolerances specified in the Contract. If tolerances are specified, deviations beyond the specified limits will be unacceptable. When tolerance limits are not specified, and only single dimensions are indicated, such dimensions are to be regarded as nominal dimensions. If the materials furnished, work performed, or the finished product does not conform to the Contract, but adequately addresses the design purpose, the Engineer will determine the conditions under which the Work will be accepted and allowed to remain in place unless there are other provisions in the Contract that provide for this determination. Where this determination is made by the Engineer rather than Contract provisions, the Engineer will document the basis of acceptance by Contract modification. The modification will provide for an appropriate adjustment in the Contract price for such work or materials as necessary to support the Engineer's determination.

6.3 SUPERVISION OF WORK

6.3.1 Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor

shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but Contractor shall not be responsible for the negligence of Municipalities or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. Contractor shall be responsible to see that the completed Work complies accurately with the Contract Documents.

6.3.2 At all times during the progress of the Work, Contractor shall assign a competent resident superintendent thereto who shall not be replaced without written notice to Municipalities and Engineer except under extraordinary circumstances. The superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or received from the superintendent shall be binding on Contractor.

6.4 LABOR

6.4.1 Contractor shall provide competent, suitably qualified personnel to survey, layout, and construct the Work as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

6.4.2 Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and Contractor will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without Municipalities' written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.5 SERVICES, MATERIALS, AND EQUIPMENT

6.5.1 Unless otherwise specified in the General Requirements, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

6.5.2 All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of Municipalities. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.6 SCHEDULE OF WORK

6.6.1 Contractor shall adhere to the progress schedule established in accordance with Article 2.4.3 as it may be adjusted from time to time as provided below.

6.6.1.1 Contractor shall submit to Engineer for acceptance proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

6.6.1.2 Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 2. Such adjustments may only be made upon written approval of the Engineer.

6.7 SUBSTITUTES AND "OR - EQUALS"

6.7.1 Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

6.7.1.1 "Or – Equals": If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:

6.7.1.1(a) in the exercise of reasonable judgment the Engineer determines that: (i) it is at least equal in quality, durability, appearance, strength, availability, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole; (iii) it has a proven performance record; and

6.7.1.1(b) Contractor certifies that: (i) there is no increase in cost to the Municipalities or increase in Contract Times; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

6.7.1.2 Substitute Items:

6.7.1.2(a) If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under paragraph 6.7.1, it will be considered a proposed substitute item.

6.7.1.2(b) Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefore. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

6.7.1.2(c) The procedure for review by Engineer will be as set forth in paragraph 6.7.1.2.(d), as supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.

6.7.1.2(d) Contractor shall first make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Municipalities for work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by Engineer in evaluating the proposed substitute item. Engineer may require Contractor to furnish additional data about the pro-posed substitute item.

6.7.2 If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is

equivalent to that expressly called for by the Contract Documents. The procedure for review by Engineer will be similar to that provided in subparagraph 6.7.1.2(d).

6.7.3 Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraph 6.7. Engineer will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

6.7.4 Special Guarantee: Municipalities may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

6.7.5 Engineer's Cost Reimbursement: Engineer will record time required by Engineer and Engineer's Consultants in evaluating substitute proposed or submitted by Contractor pursuant to paragraphs 6.7.1.1 and 6.7.1.2 and in making changes in the Contract Documents (or in the provisions of any other direct contract with Municipalities for work on the Project) occasioned thereby. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor may reimburse Municipalities for the charges due Engineer and Engineer's Consultants for evaluating each such proposed substitute.

6.7.6 Contractor's Expense: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.8 CONCERNING SUBCONTRACTORS, SUPPLIERS, AND OTHERS

6.8.1 Contractor shall not employ any Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, against whom Municipalities may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

6.8.2 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Municipalities in advance for acceptance by Municipalities by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Municipalities' acceptance (either in writing or by failing to make written objection thereto) by the date indicated for of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by Municipalities of any such Subcontractor, Supplier, or other

individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Municipalities or Engineer to reject defective Work.

6.8.3 Contractor shall be fully responsible to Municipalities and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Municipalities or Engineer and any such Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of Municipalities or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

6.8.4 Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

6.8.5 Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

6.8.6 The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

6.8.7 All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Municipalities and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance required herein, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Municipalities, Contractor, Engineer, Engineer's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.9 PATENT FEES AND ROYALTIES

6.9.1 Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention,

design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Municipalities or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Municipalities in the Contract Documents. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Municipalities, Engineer, Engineer's Consultants, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.10 PERMITS

6.10.1 Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Municipalities shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Municipalities shall pay all charges of utility owners for connections providing permanent service to the Work.

6.11 LAWS AND REGULATIONS

6.11.1 Contractor shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Municipalities nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

6.11.2 If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work; however, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations herein.

6.11.3 Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Times. If Municipalities and Contractor are unable to agree on entitlement to or

on the amount or extent, if any, of any such adjustment, a Claim may be made therefore as provided herein.

6.12 TAXES

6.12.1 Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.13 USE OF SITE AND OTHER AREAS

6.13.1 Limitation on Use of Site and Other Areas

6.13.1.1 Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

6.13.1.2 Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

6.13.1.3 To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Municipalities, Engineer, Engineer's Consultant, and the officers, directors, partners, employees, agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Municipalities, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

6.13.2 During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

6.13.3 Prior to Substantial Completion of the Work Contractor shall clean the Site and make it ready for utilization by Municipalities. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

6.13.4 Loading Structures: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.14 RECORD DOCUMENTS

6.14.1 Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Municipalities.

6.15 SAFETY

6.15.1 Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

6.15.1.1 all persons on the Site or who may be affected by the Work;

6.15.1.2 all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

6.15.1.3 other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated-for removal, relocation, or replacement in the course of construction.

6.15.2 Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Municipalities of adjacent property and of Underground Facilities and other utility Municipalities when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to herein, caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Municipalities or Engineer or Engineer's Consultant, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual

or entity directly or indirectly employed by any of them). Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Municipalities and Contractor as required herein that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.16 SAFETY REPRESENTATIVE

6.16.1 Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.17 HAZARD COMMUNICATION PROGRAMS

6.17.1 Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.18 EMERGENCIES

6.18.1 In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Change Order will be issued.

6.19 SHOP DRAWINGS AND SAMPLES

6.19.1 Contractor shall submit Shop Drawings to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. All submittals will be identified as Engineer may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by paragraph 6.19.5

6.19.2 Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, supplier, pertinent data such as catalog numbers, and the use for which intended, and otherwise as Engineer may require to enable Engineer to review the submittal for the limited purposes required by paragraph

6.19.5. The numbers of each Sample to be submitted will be as specified in the Specifications.

6.19.3 Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to Engineer as required herein, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

6.19.4 Submittal Procedures

6.19.4.1 Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:

6.19.4.1(a) all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

6.19.4.1(b) all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

6.19.4.1(c) all information relative to means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto; and

6.19.4.1(d) Contractor shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

6.19.4.2 Each submittal shall bear a stamp or specific written indication that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.

6.19.4.3 At the time of each submittal, Contractor shall give Engineer specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to Engineer for review and approval of each such variation.

6.19.5 Engineer’s Review

6.19.5.1 Engineer will timely review and approve Shop Drawings and Samples in accordance with the Contractor’s schedule of Shop Drawings and Sample submittals acceptable to Engineer (expected review time shall never be less than 10 days). Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work,

conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

6.19.5.2 Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

6.19.5.3 Engineer's review and approval of Shop Drawings or Samples shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has in writing called Engineer's attention to each such variation at the time of each submittal as required by paragraph 6.19.4 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by Engineer relieve Contractor from responsibility for complying with the requirements of paragraph 6.19.4.

6.19.6 Resubmittal Procedures

6.19.6.1 Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.20 CONTINUING THE WORK

6.20.1 Contractor shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with Municipalities. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted herein or as Municipalities and Contractor may otherwise agree in writing.

6.21 GENERAL WARRANTY AND GUARANTEE

6.21.1 Contractor warrants and guarantees to Municipalities, Engineer, and Engineer's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

6.21.1.1 abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

6.21.1.2 wear and tear under normal usage.

6.21.2 Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

6.21.2.1 observations by Engineer;

6.21.2.2 recommendation by Engineer or payment by Municipalities of any progress or final payment;

6.21.2.3 the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Municipalities;

6.21.2.4 use or occupancy of the Work or any part thereof by Municipalities;

6.21.2.5 any acceptance by Municipalities or any failure to do so;

6.21.2.6 any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

6.21.2.7 any inspection, test, or approval by others; or

6.21.2.8 any correction of defective Work by Municipalities.

6.22 INDEMNIFICATION

6.22.1 To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Municipalities, Engineer, Engineer's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

6.22.1.1 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

6.22.1.2 is caused in whole or in part by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of an individual or entity indemnified hereunder or

whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the .negligence of any such individual or entity.

6.22.2 In any and all claims against Municipalities or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.22.1 shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

6.22.3 The indemnification obligations of Contractor under paragraph 6.22.1 shall not extend to the liability of Engineer and Engineer's Consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them arising out of:

6.22.3.1 the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

6.22.3.2 giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.23 LAYOUT OF THE WORK

6.23.1 CONTRACTOR shall be solely responsible for layout of all Work.

ARTICLE 7 - CONTROL OF THE WORK

7.1 AUTHORITY OF THE ENGINEER

7.1.1 The Engineer, acting as Municipalities's representative, shall decide all questions regarding the quality and acceptability of materials furnished, work performed, the rate of progress of the Work, the interpretation of the Contract, and the acceptable fulfillment of the Contract by the Contractor.

7.1.2 If directed by the Municipalities, the Engineer will suspend the Work, wholly or in part, for such periods as may be necessary for the Contractor's failure to correct conditions unsafe for the Project personnel or general public, or carry out provisions of the Contract, or carry out orders of the Engineer. Notwithstanding the foregoing, action on the part of the Municipalities and/or Engineer pursuant to this section shall NOT be deemed to constitute a waiver of the sovereign immunity of the Municipalities, which immunity is hereby expressly reserved by the Municipalities nor shall any such action be claimed to and/or constitute a waiver of the CONTRACTOR's indemnification obligations specified elsewhere herein.

7.1.3 Work may also be wholly or partially suspended for periods necessary due to existing or forecasted unsuitable weather, or for conditions considered unsuitable for the prosecution of the Work such as hazardous materials, directives of the New Hampshire Department of Environmental Services, implementing emergency episode procedures, or any other condition or reason deemed to be in the Municipalities's interest.

7.2 VISITS TO SITE

7.2.1 Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Municipalities, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Municipalities a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Municipalities informed of the progress of the Work and will endeavor to guard Municipalities against defective Work.

7.2.2 Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Article 7, and particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

7.3 AUTHORIZED VARIATIONS IN WORK

7.3.1 Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Municipalities and also on Contractor, who shall perform the Work involved promptly. If Municipalities and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of a Field Order, a Claim may be made therefore as provided herein.

7.4 INTERPRETATION OF CONTRACT DOCUMENTS AND ACCEPTABILITY OF WORK

7.4.1 Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and

other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred initially to Engineer in writing, with a request for a formal decision.

7.4.2 When functioning as interpreter and judge under the contract, Engineer will not show partiality to Municipalities or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by Engineer pursuant to the contract with respect to any such Claim, dispute, or other matter will be a condition precedent to any exercise by Municipalities or Contractor of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

7.5 ENGINEER'S AUTHORITY AND RESPONSIBILITIES

7.5.1 Neither Engineer's authority nor responsibility under any provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

7.5.2 Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

7.5.3 Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

7.5.4 Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation, required to be delivered will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

7.5.5 The limitations upon authority and responsibility set forth in this paragraph shall also apply to Engineer's Consultants, Resident Project Representative, and assistants.

7.5.6 The Contractor shall perform all necessary layout work not specified above in order to construct all elements of the Project as shown on the Plans and specified in the

Contract. This work shall include, but shall not be limited to stakeout necessary for re-establishment of line and grade as earthwork operations progress; stakeout, layout, and elevations as required for structures, forms, pile layouts, and paving. Prior to paving, the Contractor shall perform all work necessary to set the blue top stakes for fine grading.

ARTICLE 8 - TESTS AND INSPECTIONS

8.1 DEFECTS

8.1.1 Prompt notice of all defective Work of which Municipalities or Engineer has actual knowledge will be provided to Contractor in writing. All defective Work may be rejected, corrected, or accepted as provided in this Article 8.

8.2 ACCESS TO WORK

8.2.1 Municipalities, Engineer, Engineer's Consultants, other representatives and personnel of Municipalities, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

8.3 TESTS AND INSPECTIONS

8.3.1 Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

8.3.2 Municipalities shall employ and pay for the services of any additional independent testing laboratory required to perform inspections, tests, or approvals as directed by the Municipalities to confirm the Work is in compliance with the specifications unless results of said testing proves non-compliant Work. Then all costs shall be borne by the Contractor.

8.3.3 Municipalities shall not be responsible for testing/inspection costs associated with the following:

8.3.3.1 for inspections, tests, or approvals covered by paragraphs 8.3.4 and 8.3.5 below;

8.3.3.2 those costs incurred in connection with tests or inspections conducted pursuant to paragraph 8.4.2 shall be paid as provided in said paragraph 8.4.2; and

8.3.3.3 as otherwise specifically provided in the Contract Documents.

8.3.4 If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other

representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

8.3.5 Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Municipalities' and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Municipalities an, Engineer.

8.3.6 If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.

8.3.7 Uncovering Work as provided in paragraph 8.3.6 shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

8.4 QUALITY ASSURANCE/QUALITY CONTROL

8.4.1 The CONTRACTOR shall be responsible for assuring that all work and materials, complete and in-place, meet or exceed the standards of quality specified or implied in the Contract Documents.

8.4.2 The ENGINEER will employ an independent testing agency to conduct construction quality control testing for earthwork and cast-in-place concrete. Agency name and contact person will be provided to the CONTRACTOR upon Notice to Proceed.

8.4.3 The CONTRACTOR shall adhere to certain general testing and quality control requirements under this Contract. The CONTRACTOR shall:

8.4.3.1 Schedule and coordinate all testing and inspections and notify the testing agency and the ENGINEER sufficiently in advance of operations to allow for the proper assignment of personnel and scheduling of tests.

8.4.3.2 Cooperate with testing agency and the ENGINEER and provide access to the work for testing.

8.4.3.3 Provide representative samples of materials to be tested, in required quantities.

8.4.3.4 Furnish labor and facilities:

(1) To provide access to work to be tested.

(2) To obtain and handle samples at the site.

(3) To facilitate inspections and tests.

(4) For storage and curing of test samples.

8.4.3.5 Assure that required inspection, sampling and testing has been conducted prior to commencement of any work which would alter or cover the work to be inspected, sampled and/or tested.

8.4.4 All work under this Contract shall be subject to inspection and observation by representatives of the Municipalities and the ENGINEER.

8.4.5 In the event that any quality control testing, inspection or observation results in any indication that any material or portion of the work does not meet Contract requirements, the CONTRACTOR shall, at his sole expense, undertake remedial work and/or repeat testing to the satisfaction of the ENGINEER.

8.4.6 QUALITY CONTROL TESTING FOR EARTHWORK (DELETED)

8.4.7 QUALITY CONTROL TESTING FOR CAST-IN-PLACE CONCRETE (DELETED)

8.5 UNCOVERING WORK

8.5.1 If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

8.5.2 If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, Contractor shall, pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Municipalities shall be entitled to an appropriate decrease in the Contract Price. If such Work is not found to be defective, Contractor shall be allowed an extension of the Contract Times (or Milestones), directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefore as provided herein.

8.6 MUNICIPALITY RIGHT TO STOP WORK

8.6.1 If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Municipalities may order Contractor to stop the Work, or any portion thereof, until the cause for such order has

been eliminated; however, the Municipalities' right to stop the Work shall not give rise to any duty on the part of Municipalities to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

8.7 CORRECTION OR REMOVAL OF DEFECTIVE WORK

8.7.1 Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

8.8 CORRECTION PERIOD

8.8.1 If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Municipalities or permitted by Laws and Regulations as contemplated herein is found to be defective, Contractor shall promptly, without cost to Municipalities and in accordance with Municipalities's written instructions: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by Municipalities, remove it from the Project and replace it with Work that is not defective, and (iii) satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom. If Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, Municipalities may have the defective Work corrected or repaired or may have the rejected Work removed and replaced, and all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

8.8.2 In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

8.8.3 Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph 8.7, the correction period

hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

8.8.4 Contractor's obligations under this paragraph 8.7 are in addition to any other obligation or warranty. The provisions of this paragraph 8.7 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

8.9 ACCEPTANCE OF DEFECTIVE WORK

8.9.1 If, instead of requiring correction or removal and replacement of defective Work, Municipalities (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Municipalities may do so. Contractor shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Municipalities's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Municipalities shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Municipalities.

8.10 MUNICIPALITIES RIGHT TO CORRECT DEFECTIVE WORK

8.10.1 If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with paragraph 8.6, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Municipalities may, after seven days written notice to Contractor, correct and remedy any such deficiency.

8.10.2 In exercising the rights and remedies under this paragraph, Municipalities shall proceed expeditiously. In connection with such corrective and remedial action, Municipalities may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Municipalities has paid Contractor but which are stored elsewhere. Contractor shall allow Municipalities, Municipalities's representatives, agents and employees, Municipalities's other contractors, and Engineer and Engineer's Consultants access to the Site to enable Municipalities to exercise the rights and remedies under this paragraph.

8.10.3 All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Municipalities in exercising the rights and remedies under this paragraph 8.9 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Municipalities shall be entitled to an appropriate decrease in the Contract Price. Any claims by the Municipalities resulting from the parties' inability to agree will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removals or replacement of Contractor's defective Work.

8.10.4 Contractor shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by Municipalities of Municipalities's rights and remedies under this paragraph 8.9.

ARTICLE 9 - PAYMENTS TO CONTRACTOR AND COMPLETION

9.1 MEASUREMENT AND PAYMENT

9.1.1 Measurement of Quantities. Work completed under the Contract will be measured by the Engineer according to the United States customary measure.

A station, when used as a definition or term of measurement, will be 100 linear feet measured horizontally.

The method of measurement and computations to be used in determination of quantities of material furnished and work performed will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual objects having an area of 9 square feet or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing.

Structures will be measured according to neat lines shown on the plans or as ordered to fit field conditions.

Items which are measured by the linear foot, such as pipe culverts, guardrail, curb, underdrains, etc., will be measured parallel to the base or foundation upon which such structures are placed.

In computing volumes of excavation, embankment, and borrow, the average end area method will be used. Where it is impracticable to measure material by the cross-section method due to irregular, isolated deposits, acceptable methods involving three-dimensional measurement may be used. When measurement of materials in vehicles is permitted, the quantity will be determined as 80 percent of the loose volume.

In computing volumes of concrete and masonry, the prismoidal method will be used.

The space occupied by pipe will not be included in the volume of headwalls. In the case of pipe having a wall thickness of 2 inches or more, the area of the pipe will be based on the manufacturer's nominal dimensions, outside to outside, or the shell of the pipe. In the case of pipe having a wall thickness of less than 2 inches, the area of the pipe will be based on the nominal inside diameter of the pipe.

The thickness of plates and galvanized sheets used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fractions of inches.

The term "ton" will mean the short ton consisting of 2,000 pounds. Except as specified below, materials which are measured of proportioned by weight shall be weighed on scales which the Contractor has had sealed by the New Hampshire Department of Agriculture or by a company approved by that Department. All weighing shall be performed in a manner prescribed under the Rules and Regulations of the Bureau of Weights and Measures of the New Hampshire Department of Agriculture. Weighing of materials on scales located outside New Hampshire will be permitted for materials produced or stored outside the State, when requested by the Contractor. Out-of-state weighing, in order to be approved, must be performed on scales sealed by the appropriate governmental authority.

If material is shipped by rail, the car weight may be accepted, provided that payment is made only for the actual weight of material. Car weights will not be acceptable for material to be passed through mixing plants.

Trucks used to haul material being paid for by weight shall be weighed empty daily at times directed by the Engineer. Each truck shall bear a plainly legible identification mark.

When material is weighed, the individual weight slips, which shall be furnished by the Contractor, for trucks, trailers, or distributors, shall show the following information: the date, the project name and number; slip number; the material or commodity; the dealer of vendor; the Contractor or Subcontractor; the location of the scales; the time of loading; the vehicle registration number or other approved legible identification mark; the tare and net weights, with gross weights when applicable; and the weigher's name, signature, or signed initials.

The right is reserved to weigh any truck, trailer, or distributor, at locations designated, before and after making deliveries to the Project.

When requested by the Contractor and approved or ordered by the Engineer in writing, material specified to be measured by the cubic yard may be weighed and converted to cubic yards. Factors for conversion from weight measurement to volume measurement will be determined by the Engineer and agreed to by the Contractor before this method of measurement of pay quantities is used.

Bituminous materials will be measured by the gallon.

Timber will be measured by the thousand feet board measure (MBM) actually incorporated in the structure. Measurement will be based on nominal widths, thicknesses, and the extreme length of each piece.

The term "lump sum," when used as an item of payment, will mean complete payment for the Work described in the Contract.

When a complete structure of structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit includes all necessary fittings and accessories.

Except as may be otherwise provided, partial payments for lump sum items will be made approximately in proportion to the amount of the work completed on those items.

Rental of equipment will be measured in hours of actual working time and necessary travel time of the equipment within the limits of the Project. If special equipment has been ordered by the Engineer in connection with force account work, travel time and transportation to the project will be measured. If equipment is ordered held on the property on a standby basis by the Engineer, payments will be made as provided herein.

When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe, conduit, etc. and these items are identified by gauge, unit weight, section dimensions, etc., the identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

Material wasted without authority will not be included in the final pay quantity.

When the estimated quantities for a specific portion of the Work are designated as final pay quantities in the Contract, they shall be the final pay quantities for which payment will be made in accordance with 9.14.

9.1.2 Scope of Payment. The Contractor shall receive and accept compensation provided for in the Contract as full payment for furnishing all materials; for performing work under the Contract in a complete and acceptable manner; and for all risk, loss, damage, or expense arising out of the nature or prosecution of the work, subject to the provisions contained herein.

9.1.3 Compensation for Altered Quantities. When the accepted quantities of work vary from the quantities in the Contract, the Contractor shall accept payment at the original Contract unit prices for the accepted quantities of work done.

9.1.4 Differing Site Conditions, Changes, Extra Work, and Force Account Work. Differing Site Conditions, changes and Extra Work performed under Article 5.2 will be paid for using the following methods as appropriate:

- Contract unit prices.
- Unit prices agreed upon in the order authorizing the work.
- An agreed upon lump sum amount.
- If directed by the Department, on a force account basis to be compensated in the following manner:

9.1.4.1 Labor. For all labor, including equipment operators, and foremen in direct charge of the specific operation, the Contractor shall receive the rate of wage agreed to in writing for each and every hour that the labor and foreman are actually engaged in the work. In case the Contractor is required to pay overtime pay or holiday pay to labor engaged in the Work, such rate will be the rate reimbursed. When the Contractor is ordered to return to the project solely to perform Extra Work, labor will be considered as being actually engaged in the Work during the hours while traveling.

No part of the salary or expenses of anyone connected with the Contractor's forces above the grade of foreman and having general supervision of the Work will be included in the labor item as specified above, except under any of the following conditions: (1) The work ordered is of an emergency nature or is ordered too late to be done before all work shown on the Plans or provided for in the Proposal has been substantially accomplished, (2) the Contractor's organization is entirely occupied with Extra Work, or (3) the nature of the work is such that the services of superintendents and timekeepers may be included in the classification of labor. In order to determine the allowable rate of pay of eligible superintendents, foremen, and timekeepers, a notarized statement shall be furnished to the Engineer. In case no documentary evidence of the actual rate of pay is furnished for such superintendents, foremen and timekeepers, no reimbursement will be allowed. Transportation for a superintendent will be paid for as equipment in the manner specified in (3) below.

The Contractor will also receive an additional amount (i.e. a labor burden rate) equal to 50 percent of the actual hourly rate paid to, or in behalf of workers, for costs of health and welfare benefits, taxes, insurances, retirement (including social security taxes), union benefits, and unemployment insurance premiums.

The unemployment insurance rate shall be the lesser of the Contractor's current unemployment insurance rate or the Unemployment Insurance Rate for New Employer established by the New Hampshire Department of Employment Security. The worker's compensation rate shall be the National Council on Compensation Insurance published rates approved by the New Hampshire Department of Insurance. All rates paid will be the Contractor's policy rate in effect at the time work is performed. For work outside the State of New Hampshire, the rates paid shall be the rates established by the

appropriate agency of the State in which the work is performed. The Contractor shall furnish evidence of the rate or rates paid for such insurance, and taxes.

A Contractor can request a different labor burden rate be used if an independently audited breakdown of the actual aforementioned costs, prepared by a Certified Public Accountant, is provided. The audit of the burden rate shall be prepared on current financial data and in conformity with the accounting practices prescribed by the Federal Acquisition Regulations 48 CFR, Part 31.

An amount equal to ten percent of the sum of the above labor-related items will also be paid the Contractor.

Subsistence and travel expenses paid by the Contractor will be reimbursed only when the Engineer orders Extra Work and in order to perform such work, it is necessary to move workers to the project particularly for that operation. Such subsistence and travel expenses allowed shall be carried on the daily report form under the classification of "Material," without, however, being subject to the added percentage for materials. If work other than such Extra Work is performed by the individuals during or in connection with that operation, no subsistence or travel expenses will be allowed.

9.1.4.2 Materials and Specialized Work. When the Engineer directs special work not included in the Contract, requiring skills, tools, and equipment unlike those used by the Contractor, payment may be made for such work performed by a specialist. For specialist services, and materials accepted by the Engineer whether furnished by a specialist or by the Contractor, the Contractor will receive the actual cost, including transportation charges paid (exclusive of equipment rentals and hereinafter set forth), to which cost 15 percent will be added. Invoices not exceeding a value of two thousand dollars per work event for specialist services on the basis of the current market price thereof may be accepted without complete itemization of labor, material, and equipment rental costs when it is impracticable and not in accordance with the established practice of the special service industry to provide such complete itemization. If specialized work is carried out by a subcontractor, provisions of paragraph 5 herein shall apply.

The cost of materials will be the cost to the purchaser, whether Contractor, Subcontractor, or other, from the supplier thereof, except as the following are applicable:

a. If materials are procured by the purchaser by any method which not a direct purchase is from and a direct billing by the actual supplier to such purchaser, the cost of such materials will be deemed to be the price paid to

the actual supplier as determined by the Engineer. No markup except for actual costs incurred in the handling of such materials will be permitted.

b. If the materials are obtained from a supply or source owned wholly or in part by the purchaser, payment will not exceed the price paid by the purchaser for similar materials furnished from said source on contract items or the current wholesale price for such materials delivered to the job site, whichever price is lower.

c. If, in the opinion of the Engineer, the cost of such materials is excessive, then the cost of such material will be deemed to be the lowest current wholesale price at which such materials are available in the quantities concerned delivered to the job site.

d. If the Contractor does not furnish satisfactory evidence of the cost of such materials from the actual supplier, the cost will then be determined in accordance with paragraph (c).

9.1.4.3 Equipment and Plant. For any Contractor-owned machinery or special equipment (other than small tools), the use of which is approved by the Engineer, the hourly rate will not exceed that determined from the latest edition of the "Rental Rate Blue Book for Construction Equipment" published by Dataquest, Inc. used in the following manner.

a. The hourly equipment rental rate (R) will be determined by formula as follows:

R = (A x B x C) + D

Where

A = Monthly rate divided by 176. The listed weekly, hourly, and daily rates will not be used.
B = Average regional adjustment factor for New Hampshire.
C = Factor from Rate Adjustment Table for the year of equipment manufacture.
D = Estimated operating costs per hour.

b. The number of hours to be paid for will be the number of hours that the equipment or plant is actually used on a specific Force Account activity and in addition, shall include the time required to move the equipment to the location of such force account activity and return it to the original location or to another location requiring no more time than that required to return it to its original location, except that moving time will not be paid for if the equipment is used during the move on work other than the specific Force Account activity.

c. The current revision of the "Blue Book" applicable to the specific Force Account work is as of the beginning of the calendar year in which Extra Work is being performed. Revised sections published during the year will

not be incorporated in the "Blue Book" until the beginning of the next calendar year.

d. The average regional adjustment factor applicable for this Contract will be specified in the Supplemental Specification for this Subsection. The average regional adjustment factor will be reviewed and revised annually subsequent to revisions of "Blue Book" sections. Equipment life adjustments will be made using the rate adjustment tables.

e. Overtime shall be charged at the same rate indicated in subparagraph (a) above.

f. The estimated operating costs per hour will be used for each hour that the equipment or plant is in operation on the Force Account work. Such costs do not apply to idle time regardless of the idleness.

g. The maximum rental period to be paid for per day shall not exceed eight hours unless the equipment operates for eight or more hours.

h. The rates established above shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs, overhauls and maintenance of any kind, depreciation, storage, overhead, profits, insurance and all incidentals.

The Contractor shall provide the Engineer with the following: the manufacturer's name, equipment type, year of manufacture, model number, type of fuel used, horsepower rating, attachments required, together with their size or capacity, and any further information necessary to ascertain the proper rate. Unless otherwise specified, manufacturer's ratings and manufacturer approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer. The Contractor shall have available for the Engineer's use a revised copy of the "Blue Book" as referenced in above.

Equipment used by the Contractor shall be in good working condition and shall be of suitable size and suitable capacity required for the work to be performed. The rate for the basic equipment with the appropriate attachments shall include only the rate for the combined equipment necessary to perform the extra work. In case the Contractor elects to use equipment of a higher rental value than that suitable for the work, payment will be made at the rate applicable to the suitable equipment. The equipment actually used and the suitable equipment to be paid for will be recorded as a part of the record for Extra Work. The Engineer will determine the suitability of the equipment. If there is a differential in the rate of pay of the operator of oversize or higher rate equipment, the rate paid for the operator will likewise be that for the suitable equipment.

Payable time periods will not include: (1) time elapsed while equipment is inoperative due to breakdowns, (2) time spent repairing equipment, or (3) time elapsed 24 hours after the Engineer has advised the Contractor that the equipment is no longer needed.

If a piece of equipment is needed that is not listed in the above stated rental rate guide, a rate will be established by the Engineer in writing before the equipment is used. The Contractor may furnish any cost data which might assist the Engineer in the establishment of such rate.

If the Contractor does not own a specific type of equipment and must obtain it by rental, the Contractor shall inform the Contract Administrator of the need to rent the equipment and of the rental rate for that equipment before using it on the work. The Contractor will be paid the actual rental for the equipment for the time that the equipment is actually used to accomplish the work provided that the rate is reasonable, plus the cost of moving the equipment onto and away from the job. The Contractor shall provide a copy of the paid receipt or canceled check for the rental expense incurred.

Transportation charges for each piece of equipment, whether owned or rented, moved to and from the site of the work will be paid provided: (1) the equipment is obtained from the nearest approved source, (2) the return charges do not exceed the delivery charges, (3) haul rates do not exceed the established rates of licensed haulers, (4) charges are restricted to those units or equipment not already available and not on or near the Project, and (5) equipment is not used elsewhere on the project.

9.1.4.4 Miscellaneous. No additional allowance will be made for general superintendence, the use of small tools, or for other costs for which no specific allowance is provided.

9.1.4.5 Subcontracting. For administration costs in connection with approved subcontract work, the Contractor shall receive an amount equal to five percent of the total cost of work computed as set forth above, except that no percentage will be allowed for equipment rented from the Contractor. In the event lower tier subcontracting is required, the administration cost shall not exceed a combined total of 20% of the actual cost of the work as computed above.

9.1.4.6 Bond. The Contractor will receive the actual costs for bond premium as a percentage of the total cost of the Work computed as set forth above for work paid under items not originally in the contract. The Contractor shall furnish evidence of the rate paid for such bond.

9.1.4.7 Compensation. The compensation herein provided shall be accepted by the contractor as payment in full for Force Account work, including

superintendence (except as provided in (1) above), subcontracting, taxes, bond, overhead, profit, and other costs in connection with the Work which are not provided for.

9.1.4.8 Statements. The Contractor's representative and the Engineer each day shall compare records of the cost of work completed on a Force Account basis. These daily records shall be set forth on the forms provided by the Engineer and shall thereafter be considered to be the basis for payment of the work performed, but shall not preclude subsequent adjustment based on a late audit by the Department.

No payments will be made for work performed on a Force Account basis until the Contractor has furnished the Engineer with a statement of the cost of the Force Account work showing the following:

a. Name of subcontractor, if appropriate.

b. Name, classification, date, daily hours, total hours, rate, and extension for each laborer, operator, and foreman.

c. Quantities of materials, prices, and extensions.

d. Charges for transportation of materials.

e. Specialized work charges.

f. Designation, dates, daily hours, total hours, rental rate, and extension for each unit of equipment or plant.

The Contractor shall certify that the labor, materials, and equipment listed were actually used on the Force Account Extra Work described, that the labor and equipment were used for the hours indicated and that the rates for labor do not exceed those for comparable labor currently employed on the project.

Statements shall be accompanied and supported by certified copies of the appropriate payrolls, and invoices for all materials and specialized work and for transpiration charges. If materials used on the Force Account work are not specifically purchased for the work but are taken from the Contractor's stock, the Engineer shall be furnished an affidavit certifying that the materials were taken from stock, that the quantity claimed was actually used, and that the price and transportation claimed represents the Contractor's actual cost.

During the life of the contractor and for a period of not less than three years after the date of Acceptance thereof, the Contractor's cost records pertaining to work paid for on an Extra Work basis shall be open to inspection or audit by representatives of the Department, and the Contractor shall retain such records for that period. Where payment for materials or labor is based on the cost thereof to forces other than the Contractor, the Contractor shall make every reasonable effort to ensure that the cost records of such other forces will

be open to inspection and audit by representatives of the Municipalities on the same terms and conditions as the cost records of the Contractor.

9.1.4.9 Final Pay Quantity. When an item of work is designated as a final pay quantity in the Method of Measurement, or Basis of Payment, or Bid Schedule as (F), the estimated bid quantity for that item of work shall be the final pay quantity, unless the dimensions of any portion or the quantity of that item are revised by the Engineer, or the item or any portion of the item is eliminated. If the dimensions of any portion or the quantity of the item are revised, and the revision results in an increase or decrease in the estimated quantity of that item of work, the final pay quantity for the item will be revised in the amount represented by the changes in the dimensions or the quantity. If a final pay item is eliminated, the estimated quantity for the item will be eliminated. If a portion of a final pay item is eliminated, the final pay quantity will be revised in the amount represented by the eliminated portion of the item of work.

The estimated quantity for each item of work designated as a final pay quantity in the Method of Measurement or Basis of Payment or Bid Schedule shall be considered as approximate only, and no guarantee is made that the quantity which can be determined by computations, based on the details and dimensions shown on the plans, will equal the estimated quantity. No adjustment will be made in the event that the quantity based on computations does no equal the estimated quantity except under the following conditions:

a. A quantity adjustment (increase or decrease) to the estimated bid quantity will be made if either the actual quantity is more than 125 percent or less than 75 percent of the estimated bid quantity for roadway items, or the value of the actual quantity is more than or less than $10,000.00 of the estimated bid quantity value.

b. A quantity adjustment (increase or decrease) to the estimated bid quantity will also be made if either the actual quantity per bridge structure is more than 125 percent or less than 75 percent of the estimated bid quantity for that bridge item or the value of the actual quantity is more than or less than $10,000.00 of the estimated bid quantity value.

In case of discrepancy between the quantity shown in the Bid Schedule for a final pay item and the quantity or summation of quantities for the same item shown on the plans or in the proposal, payment will be based on the quantity shown in the Bid Schedule.

9.2 SCHEDULE OF VALUES AND PARTIAL PAYMENT APPLICATIONS

9.2.1 The schedule of values established as provided herein shall serve as the basis for progress payments and will be incorporated into a form of Application for Payment

acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

9.2.2 At least 5 days before the date established for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitable stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Municipalities has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Municipalities' interest therein, all of which must be satisfactory to Municipalities.

9.2.3 Unless specifically waived by a Special Provision or Supplemental Condition, the Municipalities shall retain ten (10) percent of the amount of progress payments until completion and acceptance of all Work under the Contract; except, that if upon completion of 50 percent of the Work, the Contracting Officer, after consulting with the Engineer, determines that the Contractor's performance and progress are satisfactory, the Municipalities may make the remaining payments in full for the Work subsequently completed. If the Contracting Officer subsequently determines that the Contractor's performance and progress are unsatisfactory, the Municipalities shall reinstate the ten (10) percent retainage until such time as the Contracting Officer determines that performance and progress are satisfactory.

9.2.4 The Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration when computing progress payments. Material delivered to the Contractor at locations other than the site may also be taken into consideration if the Contractor furnishes satisfactory evidence that (1) it has acquired title to such material; (2) the material is properly stored in a bonded warehouse, storage yard, or similar suitable place as may be approved by the Contracting Officer; (3) the material is insured to cover its full value; and (4) the material will be used to perform this Contract. Before any progress payment which includes delivered material is made, the Contractor shall furnish such documentation as the Contracting Officer may require to assure the protection of the Municipalities' interest in such materials. The Contractor shall remain responsible for such stored material not withstanding the transfer of title to the Municipalities.

9.2.5 All material and work covered by progress payments made shall, at the time of payment become the sole property of the Municipalities, but this shall not be construed as (1) relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or (2) waiving the right of the Municipalities to require the fulfillment of all of the terms of the contract. In the event the work of the Contractor has been damaged by other contractors or persons

other than employees of the Municipalities in the course of their employment, the Contractor shall restore such damaged work without cost to the Municipalities and to seek redress for its damage only from those who directly caused it.

9.2.6 Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

9.2.7 Within 10 days after receipt of each Application for Payment, the Engineer shall either indicate in writing a recommendation of payment and present the Application to Municipalities or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

9.2.8 Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Municipalities, based on Engineer's observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief that:

9.2.8.1 The quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work, and to any other qualifications stated in the recommendation); and

9.2.8.2 The conditions precedent to Contractor being entitled to such payment appears to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

9.2.8.3 By recommending any such payment Engineer will not thereby be deemed to have represented that: (i) inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or (ii) that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Municipalities or entitle Municipalities to withhold payment to Contractor.

9.2.9 Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer to supervise, direct, or control the Work or for the

means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work. Additionally, said review or recommendation will not impose responsibility on Engineer to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to Municipalities free and clear of any Liens.

9.2.10 Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Municipalities referred to herein Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Municipalities from loss because:

9.2.10.1 the Work is defective, or completed Work has been damaged, requiring correction or replacement;

9.2.10.2 the Contract Price has been reduced by Written Amendment or Change Orders;

9.2.10.3 Municipalities has been required to correct defective Work or complete Work in accordance with the Specifications; or

9.2.10.4 Engineer has actual knowledge of the occurrence of any of the events warranting Contractor's termination for cause.

9.3 PAYMENT TO THE CONTRACTOR

9.3.1 Payment to the Contractor shall become to due in accordance with the Municipalities' approval and payment schedule, but not later than thirty (30) days after presentation of the Application for Payment to Municipalities with Engineer's recommendation of the amount for payment (subject to the provisions contained herein) and will be paid by Municipalities to Contractor.

9.4 REDUCTION IN PAYMENTS

9.4.1 Reduction in payments recommended by the Engineer may be made by the Municipalities when:

9.4.1.1 Claims have been made against Municipalities on account of Contractor's performance or furnishing of the Work;

9.4.1.2 Liens have been filed in connection with the Work, except where Contractor has delivered a specific Bond satisfactory to Municipalities to secure the satisfaction and discharge of such Liens;

9.4.1.3 there are other items entitling Municipalities to a set-off against the amount recommended; or

9.4.1.4 Municipalities have actual knowledge of the occurrence of any of the events enumerated in Article 9.1.

9.4.2 Liquidated Damages.

9.4.2.1 If the Contractor fails to complete the Work within the time specified in the Contract, or any extension, the Contractor shall pay to the Municipalities liquidated damages, as indicated in the contract for each day of delay. If different completion dates are specified in the Contract for separate parts or stages of the Work, the amount of liquidated damages shall be assessed on those parts or stages which are delayed. To the extent that the Contractor's delay or nonperformance is excused under another clause in this Contract, liquidated damages shall not be due the Municipalities. The Contractor remains liable for damages caused other than by delay.

9.4.2.2 If the Municipalities terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the Municipalities work together with any increased costs occasioned the Municipalities in completing the Work.

9.4.2.3 If the Municipalities do not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the Work is completed or accepted.

9.5 PAYMENT FOR ALTERATIONS TO THE CONTRACT

9.5.1 The Contractor shall receive and accept compensation provided for in the Contract as full payment for furnishing all materials; for performing work under the Contract in a complete and acceptable manner; and for all risk, loss, damage, or expense arising out of the nature or prosecution of the work, subject to the provisions contained herein.

9.5.2 When final approved quantities of work vary from the Contract quantities, the Contractor shall accept payment at the original Contract unit prices for the accepted quantities of work done, unless specified otherwise in this Contract.. No additional allowance will be considered unless approved by the Engineer.

9.5.3 Differing Site Conditions, changes, and Extra Work approved in accordance with the terms herein will be paid as stipulated in 9.1.4 herein.

9.6 UNJUSTIFIED WITHHOLDING OF PAYMENT

9.6.1 If it is subsequently determined that Municipalities' refusal of payment was not justified, the amount previously withheld shall become due with the subsequent request for payment

9.6.2 The Municipalities and/or Engineer shall not be liable to the Contractor for damages resulting from the incorrect withholding of a payment

9.7 WRITTEN NOTICE TO CONTRACTOR

9.7.1 If Municipalities refuses to make payment of the full amount recommended by Engineer, Municipalities must give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Municipalities shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Municipalities and Contractor, when Contractor corrects to Municipalities' satisfaction the reasons for such action.

9.8 CONTRACTOR REPRESENTATIONS

9.8.1 Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Municipalities no later than the time of payment free and clear of all Liens.

9.9 SUBSTANTIAL COMPLETION

9.9.1 When substantially complete the Contractor shall notify Municipalities and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Promptly thereafter, Municipalities, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefore. If Engineer considers the Work substantially complete, Engineer will prepare and deliver to Municipalities a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Municipalities shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Municipalities notify Contractor in writing, stating the reasons therefore. If, after consideration of Municipalities' objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Municipalities and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Municipalities. At the time of delivery of the tentative certificate of Substantial Completion Engineer will deliver to Municipalities and Contractor a written recommendation as to division of responsibilities pending final payment between Municipalities and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Municipalities and Contractor agree otherwise in writing

and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Municipalities and Contractor until final payment.

9.10 FINAL INSPECTION

9.10.1 A final inspection shall be performed by the Engineer upon written notice from Contractor that the entire Work or an agreed portion thereof is complete. The Municipalities and Contractor shall attend the Engineer's inspection and Engineer shall promptly notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

9.11 FINAL PAYMENT

9.11.1 Final payment shall be made to the Contractor after, in the opinion of Engineer, the Contractor has satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents, and other documents.

9.12 PROGRESS PAYMENTS

9.12.1 Contractor may make application for final payment in accordance with the procedure for progress payments:

9.12.2 The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required herein; (ii) consent of the surety, if any, to final payment; and (iii) complete and legally effective releases or waivers (satisfactory to Municipalities) of all Lien rights arising out of or Liens filed in connection with the Work.

9.12.3 In lieu of the releases or waivers of Liens specified herein and as approved by Municipalities, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Municipalities or Municipalities' property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a Bond or other collateral satisfactory to Municipalities to indemnify Municipalities against any Lien.

9.13 ACCEPTANCE OF WORK BY ENGINEER

9.13.1 If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Municipalities for payment. At the same time Engineer will also give written notice to Municipalities and Contractor that the Work is acceptable subject to the provisions contained herein. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

9.14 ADJUSTMENTS TO FINAL PAYMENT

9.14.1 When an item of work is designated as a final pay quantity in the Method of Measurement, Basis of Payment, and Bid Schedule (F), the estimated bid quantity for that item of work shall be the final pay quantity, unless the dimensions of any portion or the quantity of that item are revised by the Engineer, or the item or any portion of the item is eliminated. If the dimensions of any portion or the quantity of the item are revised, and the revision results in an increase or decrease in the estimated quantity of that item of work, the final pay quantity for the item will be revised in the amount represented by the changes in the dimensions or the quantity. If a final pay item is eliminated, the estimated quantity for the item will be eliminated. If a portion of a final pay item is eliminated, the final pay quantity will be revised in the amount represented by the eliminated portion of the item of work.

The estimated quantity for each item of work designated as a final pay quantity in the Method of Measurement and Basis of Payment shall be considered as approximate only, and no guarantee is made that the quantity which can be determined by computations, based on the details and dimensions shown on the plans, will equal the estimated quantity. No adjustment will be made in the event that the quantity based on computations does not equal the estimated quantity.

The Contractor may review the computations of final pay quantity items on record at the Municipalities. The computations requested will be available within one week after a request is received by the contact person stated in the Invitation for Bids. In case of discrepancy between the quantity shown in the Bid Schedule for a final pay item and the quantity or summation of quantities for the same item shown on the plans, payment will be based on the quantity shown in the Bid Schedule.

ARTICLE 10 - MISCELLANEOUS

10.1 WRITTEN NOTICE

10.1.1 Whenever any provision of the Contract requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

10.1.2 When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

10.2 CUMULATIVE REMEDIES

10.2.1 The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

10.3 SURVIVAL OBLIGATIONS

10.3.1 All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Agreement.

10.4 CONTROLLING LAW

10.4.1 This Contract is to be governed by the laws of the state in which the Project is located.

10.5 PROJECT VISITATION BY THIRD PARTY

10.5.1 Non-emergency visits by third party requires 24-hour notice to Contractor and Engineer. The Contractor must provide applicable contact name and phone number of desired point of contact. If the primary contact is unavailable, an appropriate voice message must be provided describing an alternate contact person and phone number.

SUPPLEMENTARY TO THE GENERAL CONDITIONS

SUPPLEMENTARY CONDITIONS

1. The 2016 edition of the State of New Hampshire Department of Transportation Standard SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, and any Addenda, shall apply but without regard to Division 100 “General Provisions” of those Standard Specifications (unless specifically referenced in a contract bid item) and without regard to any of those NHDOT provisions that allow for an adjustment for changing fuel and asphalt prices. All other work not described in the contract documents shall be performed in accordance with the Standard Specifications.

2. These Supplementary Conditions amend, revise, supplement and/or otherwise modify the New Hampshire Department of Transportation’s STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2016 edition), includes the NHDOT Supplemental Specifications updated through July 6, 2018.

SECTION 101 – DEFINITION AND TERMS

Amend Section 101 to include and/or revise the following definitions:

- The "Contractor" shall mean the person or entity identified as such in the Notice of Award to be issued by the Town of Hudson.

- The "Engineer", “Architect”, and “Owner’s Representative” shall mean Greenman-Pedersen, Inc., 44 Stiles Road, Suite One, Salem, NH 03079.

- The "Municipality", the “Town”, and the “Owner” shall mean the Town of Hudson, the local government in which the Contract work is to be performed.

- The "NHDOT" shall mean the New Hampshire Department of Transportation.

SECTION 104 – SCOPE OF WORK

The work under these items shall conform to the relevant provisions of Section 104 of the Standard Specifications and the following amendments, revisions, supplements, or modifications.

Amend Subsection 104.01, Intent of Contract, to include the following:

1. RELATED DOCUMENTS

A. All work under this title, on the construction drawings or specified, is subject to the general and supplemental contract conditions as supplied by the Town of Hudson.

2. SCOPE OF WORK

A. The following is a general listing of work items to be provided under this Contract. Work indicated is not necessarily all inclusive, nor shall it limit the extent of the work or exclude any work shown or specified and not listed.

B. Contractor shall furnish all materials, equipment and labor to make the following complete installations:

1. This project generally consists of providing a new vehicle fueling facility at the Hudson Public Works Department facility at 2 Constitution Drive in Hudson, NH. The existing fueling facility will be decommissioned in accordance with the NH Department of Environmental Services (NHDES) regulations. However, this decommissioning will be coordinated by the Town under a separate Contract.

2. This work will consist of furnishing and installing one (1) 14,000 gallon above ground storage tank (AST) with two tank compartments. The compartments will consist of storing 8,000 gallons of diesel fuel and 6,000 gallons of gasoline. Work shall include all tank work, piping work, electrical work, earthwork, concrete work, fine grading, gravel, crushed gravel, and drainage work per the construction drawings.

3. All demolition work as indicated on the construction drawings and as specified including, but not limited to, the complete removal and proper disposal of material and equipment from the site.

4. Cutting and patching as required to accomplish the work indicated including all site work. However, the Town will perform all paving that is required for this project. The contractor will need to coordinate schedule with the Town as required.

5. Excavation, backfill and site restoration for all new exterior underground conduits for fuel systems.

6. Fuel dispensing system of capacity as indicated on drawings and as specified

including, but not limited to, above ground steel tanks, pumps, aboveground piping, underground piping, sumps, dispensers, leak detection and inventory system, and all other items not listed but required for a complete working system

7. This work includes utilizing a private utility location service to verify the location of the various utilities on the project site.

8. The Town will be responsible for relocating the existing hydrant as noted in the Construction Drawings, including cap and installation of a thrust block as required.

9. Testing, start-up and balancing of all fueling installations to include but not limited to pumps, dispensers, and leak detection system.

10. Servicing of fueling equipment installed as required during guarantee period for a minimum of 1 year at Owner's acceptance.

11. Provide competent factory-trained personnel at site for the purpose of instructing Owner's personnel in proper operation and maintenance of all new fueling facilities.

3. CONFLICTS

A. If, in the interpretation of contract documents, it appears that the drawings and specifications are not in agreement, the Contractor is to contact the Engineer. The Engineer shall be the final authority. Addenda supersede the provisions which they amend.

B. In the absence of a written clarification by the Engineer, the Contractor must install his work in accordance with the more stringent and/or costly condition. Contractor assumes full responsibility for any and all items furnished and installed without the written approval by the Engineer. Under no circumstances will a change order be accepted for work installed that was not approved by the Engineer.

4. REVIEW OF MATERIALS

A. Equipment manufacturer and model numbers as specified in the construction drawings are specific to the approved permit from the NH Department of Environmental Services. Any requested substitutions by the Contractor must be approved by the Engineer prior to installation. Any proposed equipment substitution may also need to be approved by the NH Department of Environmental Services. The Contractor will be responsible for any fines resulting from unauthorized changes.

5. DELIVERY, STORAGE, AND HANDLING

A. Delivery of Materials: Make provisions for delivery and safe storage of all materials. Check and properly receipt of any material to be "furnished by others" to contractor and assume full responsibility for all materials while in storage with full visible

identification and information.

6. PROJECT CONDITIONS

A. Existing Conditions: Field verify existing conditions that will determine exact locations, distances, levels, dimensions, elevations, etc. Review all drawings of other trades and report any conflicts to the Engineer which will affect the project cost. Lack of field verification does not constitute a basis for additional monies during construction. Contractor assumes full responsibility for completeness of installation including coordination of work with other trades.

B. The existing facility will be occupied and functioning during the entire duration of construction. Care shall be taken when working in or around occupied spaces. Temporary safety fencing shall be provided as required.

7. CONSTRUCTION REQUIREMENTS

A. Prior to starting any AST construction at the site, the contractor shall provide written notice to the NHDES as required by Env-Or 307.03(n).

B. The Contractor shall be a certified AST installer as required by Env-Or 300, and be certified by the tank, piping, monitoring system, and fuel management system manufacturer as approved and certified installers. The contractor will be responsible to install all equipment and provide documentation in a manner which allows the Owner to obtain the maximum manufacturer warranties.

C. After contract award, the Contractor, in consultation with the Engineer shall schedule a pre-construction meeting. The Contractor shall provide copies of the certificate or wallet card for the following certifications at the pre-construction meeting:
   - ICC Tank Installer Certification
   - NH Licensed electrician
   - APT Piping Installer
   - Veeder Root Technician Certification

D. The Contractor shall notify the NHDES and Engineer for notifications of required inspections in accordance with Env-Or 300. In addition, the Contractor shall notify the Hudson Public Works Department and the Engineer at least 3 days prior to the following key construction milestones:
   1. Tank Installation
   2. Pre-NHDES Backfill of Piping
   3. Pre-NHDES Operational Inspection
   4. Final Inspection

E. The Engineer will obtain the AST Conditional Construction Approval issued by the NHDES and provide it to the Contractor prior to the construction period. The Contractor shall be responsible for including a copy of this document as part of the closeout documentation submitted at the end of the project. The contractor is responsible for compliance with all conditions of approval as noted in the NHDES Permit.

F. The Contractor shall submit all closeout documentation at the completion of the project, in accordance with Attachment C.

G. The Contractor shall calibrate and “seal” new dispensing meters in accordance with State of New Hampshire Weights and Measures regulations. Set the delivery calibration as close to “zero” as possible. The contractor must return all motor fuel used in the calibration of the dispensing pump meters back to the appropriate storage tank. The contractor must provide written documentation on the flow rate of each nozzle. The contractor shall complete and submit to the Bureau of Weights and Measures a Placed In Service/Inspection Report Form and provide a weights and measures certification sticker on each dispenser. The yellow owner/operator copy of the Placed In Service/Inspection Report form shall be submitted as part of the closeout documentation.

H. A permit to temporarily discharge groundwater, pursuant to Env-Wq 402 may be required prior to dewatering necessary for the installation of the underground system component. Applications and permitting information can be obtained by calling the NHDES call at (603) 271-2513.

I. Purusant to Env-Or 306.02, a **spill prevention, control, and countermeasure (SPCC) Plan** prepared in accordance with the code of federal regulations 40 CFR Part 112 by a NH P.E. shall be implemented prior receiving operational approval of the new AST systems. The Town will be responsible for providing the SPCC Plan under a separate contract. The contractor shall be responsible for coordinating this effort with the Town as required.

END OF SECTION

SECTION 106 – CONTROL OF MATERIAL

Amend Subsection 106.06, Storage and Handling of Materials, with the following:

1. The Contractor shall not store equipment, construction vehicles, and materials within the clear zone of the traveled way. Location of storage areas will be subject to the approval by the Town Public Works Department. The Contractor shall maintain a clear travel-way for emergency vehicles.

2. The Contractor shall determine the storage and stockpiling areas required to support the project and identify these areas on the Site Plan for approval by the Town upon award.

SECTION 108 – PROSECUTION AND PROGRESS

The work under these items shall conform to the relevant provisions of Section 108 of the Standard Specifications and the following:

Replace Subsection 108.03A, Progress Schedule, with the following:

1. The Contractor shall provide the Town and Engineer with a proposed schedule of operations. The schedule of operations shall include a plan of his construction procedures and the safety measures he will use during the prosecution of the work. The Town and/or the Engineer shall review the schedule for general Contract compliance but will not be responsible for the Contractor's operations or safety procedures. The schedule also shall include the time the Contractor proposes to complete the various items of work. **The schedule of operations shall be submitted five (5) days after the award of the contract.**

2. No work is to be performed in the immediate vicinity of any electric or telephone company utility poles, structures or wires without prior notice (at least 48 hours) to the affected company.

The following section should be added to the Standard Specifications:

SECTION 670 – MISCELLANEOUS INCIDENTALS

Item 670.111 – AST System Installation

1. RELATED DOCUMENTS

A. SECTION 104 – Scope of Work
B. Technical Specification Section 230411 – Liquid Fuel Piping (Attachment A)
C. Technical Specification Section 230486 – Above Ground Fuel Storage Tanks and Fuel Systems (Attachment A)
D. Technical Specification Section 260501 – Electrical Materials and Equipment (Attachment A)
E. Construction Drawings (Attachment B)

2. SCOPE OF WORK

A. This work generally consists of furnishing and installing one (1) 14,000 gallon above ground storage tank (AST) with two tank compartments, and furnishing and installing all associated tank appurtenances. Work under this Supplementary Condition shall include all earthwork, tank work, piping work, electrical work, bollards, crushed stone, concrete work, and steel reinforcement required for one (1) complete and operating motor fueling system at this location. Note: excavation, fine grading, gravel, crushed gravel, and saw cutting should not be included in the pricing for this Supplementary Condition but should be priced separately as part of the appropriate unit items.

B. This work includes utilizing a private utility location service to verify the location of the various utilities on the project site.

3. MATERIALS

A. Earthwork

i. The following materials shall be used for earthwork activities conducted under this Contract:
- Structural Fill. Per NHDOT Standard Specifications Section 508 – Structural Fill.
- Crushed Stone, Crushed Gravel, Gravel. Per NHDOT Standard Specifications Section 304 – Aggregate Base Course
- Pea Gravel. As specified by the tank manufacturer.

B. Aboveground Storage Tanks (AST)

i. All Materials for the AST installation shall be as specified on the Construction Drawings and the Related Documents as noted herein.
ii. The Contractor shall provide one (1) 14,000-gallon AST with two compartments (6,000 gallon/8,000 gallon). The tank shall be a double

wall steel Protected Fire Rated tank (Type UL 2085) with secondary containment in accordance with F921 STI Standards. The approved tank is Fireguard as Manufactured by Highland Tanks.

4. CONSTRUCTION REQUIREMENTS

A. Dewatering

i. In the event that groundwater is encountered during earthwork activities, the contractor shall provide dewatering services in accordance with the following specifications:

- Prevent surface and subsurface water from flowing into excavations and trenches and from flooding the site and surrounding areas.
- Do not allow water to accumulate in excavations or trenches. Remove water from all excavations immediately to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to the stability of subgrades and foundations. Furnish and maintain pumps, sumps, suction and discharge piping systems, and other system components necessary to convey the water away from the excavation. If groundwater is uncontaminated, all dewatering is included in this item. It is assumed that groundwater treatment is not required for the purposes of this contract.

B. Lighting

i. The Contractor shall furnish, install, startup, and commission the under canopy lighting system depicted on the Construction Drawings. In the presence of the Owner's Representative, the Contractor, in dark, night-time conditions, shall demonstrate the proper operation of the lighting system, and make adjustments to lighting levels at the direction of the Owner's Representative.

C. Commissioning

i. The Contractor shall commission the AST system and all other systems and equipment installed under this project. Commissioning shall include the startup, calibration, operational testing and verification of all systems.

D. Training

i. The Contractor shall provide a minimum of 2 hours of training to field operating personnel, including the fuel management system, the leak detection system, and the dispenser operation. Additionally, the Contractor shall provide a detailed system "walk thru" to fuel distribution maintenance personnel. The Contractor shall supply, as part of the closeout documentation, a list of individuals/personnel trained at each location, signed by each individual

E. Closeout Documentation

i. The Contractor shall provide the Owner's Representative with one (1) electronic copy of the following closeout documentation within 30 days of the project completion. Closeout documents shall be organized into

appropriate folders and in Portable Document Format (PDF) format. Index all documents. Include folders to accommodate folded or oversized sheets, CD's. Each CD shall be labeled on the cover and spine with the printed title "Closeout Documents", Project Name, Number and Date. The Owner reserves the right to withhold final payment to the Contractor until the Owner is in receipts of all required documentation.

ii. A checklist of all required closeout documents is included as Attachment C. Note: Hard copies shall be provided of all manufacturer hard copy operating manuals (leak detection console, dispenser, etc.). When bound books are provided, they need not be provided electronically.
    - AST installation/warranty checklist with proof of delivery to manufacturer.
    - APT piping installation checklist with proof of delivery to manufacturer.
    - Veeder Root installation checklist with proof of delivery to manufacturer.
    - Veeder Root final setup printout.
    - NHDES Conditional Construction Approval.
    - NHDES backfill authorization.
    - NHDES authorization to operate system.
    - NHDES Annual Line Leak Detector Test Form with proof of delivery to NHDES.
    - NHDES Annual Leak Monitoring and Overfill Protection Test Form with proof of delivery to NHDES.
    - NHDES Tank and Piping Tightness Testing Form with proof of delivery to NHDES.
    - Results of all data wiring passing the appropriate line tests to the specification of the installation, i.e. CAT-5, CAT-5e, etc.
    - A minimum of fifty (50) photographs of key phases of the project such as; foundation and bollard installation, system component and equipment installation (i.e. tank placement, conduit runs and connections, etc.).
    - As-Built Construction Drawings. All sheets shall be submitted, even if there are no changes, each signed and dated by the Contractor. If any sheets do not require editing, the Contractor shall indicate "No changes this sheet" then sign and date the notation.
    - Primary and Piping Test Results and Test Results for all secondary containment structures and all containment sumps.
    - Final NHDES Registration Form (signed by installer), including proof of submission to NHDES.
    - Warranties for all equipment and apparatus not listed above. In general, any product/manufacturer documentation that was provided with the equipment shall be provided as part of the closeout documents.

- Training certification for Petro Vend, Veeder Root, and dispenser operation signed by the individuals trained on these systems.
- All instruction bulletins, preventative maintenance schedules, operational instructions, and parts list provided with the tanks, dispensers, and Veeder Root system (only **1 copy** of owner operating manuals required).
- General Release Liens.
- Release of Liens for all subcontractors.
- Waste disposal documentation (if any).
- Other environmental information (if any).
- Copies of receipts for any keys, locks, or other equipment turned over to the Engineers. Signatures of recipient and printed names required.

5. METHOD OF MEASUREMENT

A. This Contract defines Aboveground Storage Tank System Installation as a unit. The unit shall consist of all materials, equipment, and labor required for complete fueling facility installation including, but not limited to: dewatering, installation of tanks, piping, dispensers, monitoring system, fuel management system, backfill, concrete pads, and concrete curbing. Note: excavation, fine grading, saw cutting, gravel, and crushed gravel are not included in this item.

6. BASIS OF PAYMENT

A. The accepted quantity of Aboveground Storage Tank System Installation will be paid at the contract lump sum price complete in place for this item 670.111. Progress payments, in accordance with NHDOT Standard Specification 109.06, will be allowed.

B. Pay item and unit:

670.111	AST System Installation	Unit

The following section should be added to the Standard Specifications:

SECTION 670 – MISCELLANEOUS INCIDENTALS

Item 670.121 – Fueling Canopy Installation

1. RELATED DOCUMENTS

A. SECTION 104 – Scope of Work
B. Technical Specification Section 230500 – Fueling Canopy (Attachment A)
C. Construction Drawings (Attachment B)

2. SCOPE OF WORK

A. The Contractor shall design, furnish, assemble and install a fueling canopy, including concrete footings and lighting, in accordance with the size and lines indicated on the Construction Drawings for this location and in strict accordance with the manufacturer's specifications.

B. The gross dimensions of the canopy, including length, width, overhead clearance, and number of columns, shall be in accordance with the Construction Drawings.

3. MATERIALS

A. All materials for the Fueling Canopy Installation shall be as specified on the Construction Drawings and the Related Documents as noted above.

4. METHOD OF MEASUREMENT

A. This Contract defines Fueling Canopy Installation as a unit. The unit shall consist of furnishing all equipment and materials, lighting, electrical, concrete reinforced foundations, canopy assembly, and canopy installation is accordance with the construction drawings and manufacturer's requirements.

5. BASIS OF PAYMENT

A. The accepted quantity of the Fueling Canopy Installation will be paid for at the contract lump sum price for this Item 670.121. Progress payments, in accordance with NHDOT Standard Specification 109.06, will be allowed.

B. Pay Item and unit:

670.121	Fueling Canopy Installation	Unit

ATTACHMENTS

ATTACHMENT A

TECHNICAL SPECIFICATIONS FOR VEHICLE FUELING FACILITY

ATTACHMENT A

TECHNICAL SPECIFICATIONS
FOR
VEHICLE FUELING FACILITY

HUDSON PUBLIC WORKS
DEPARTMENT ASSESSORS MAP 17
LOT 30
2 CONSTITUTION DRIVE
HUDSON, NH 03051

GPI

44 Stiles Road, Suite One
Salem, NH 03079
(603) 893-0720

Prepared For:

TOWN OF HUDSON
12 School Street
Hudson, NH 03051

May 1, 2023

Hudson Public Works Department
Vehicle Fueling Facility
Technical Specifications

(GPI Project No.: NEX-2300001)

TECHNICAL SPECIFICATIONS
TABLE OF CONTENTS

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data:
   1. Catalog sheets and specifications indicating manufacturer's name, type, applicable reference standard, schedule, or class for specified pipe and fittings.
   2. Material Schedule: Itemize pipe and fitting materials for each specified application in Pipe and Fittings Schedule in Part 3 of this Section. Where optional materials are specified indicate option selected.

PART 2 PRODUCTS

2.01 STEEL PIPE AND FITTINGS

A. Steel Pipe for Threading: Standard Weight, Schedule 40, black or galvanized; ASTM A 53, or ASTM A 135.

B. Malleable Iron, Steam Pattern Threaded Fittings:
   1. 150 lb Class: ASME B16.3.

C. Unions: Malleable iron, 250 lb class, brass to iron or brass to brass seats.

D. Couplings: Same material and pressure rating as adjoining pipe, conforming to standards for fittings in such pipe. Use taper tapped threaded type in screwed pipe systems operating in excess of 15 psig.

E. Nipples: Same material and strength as adjoining pipe, except nipples having a length of less than one inch between threads shall be extra heavy.

2.02 JOINING AND SEALANT MATERIALS

A. Fuel Resistant Thread Sealant:
   1. Rectorseal Corp.'s Rectorseal No. 5.
   2. EMCO Wheaton Inc.'s Joint Seal.

B. Malleable Iron, Steam Pattern Threaded Fittings:
   1. Oiled Oakum: Manufactured by Nupak of New Orleans, Inc., 931 Daniel St., Kenner, LA 70062, (504) 466-1484.

C. Anti-Seize Lubricant: Bostik Inc.'s Never Seez or Dow Corning Corp.'s Molykote 1000.

D. Corrosion Protective Tape System: 3M Co., St. Paul, MN.
   1. Tape: Scotchrap 50 or 51.
   2. Primer: Scotchrap pipe primer.
   3. Putty (if required): Strip Caulk insulation putty.

2.03 FLEXIBLE CONTAINMENT PIPE DUCT

A. Acceptable Piping:
   1. Single wall corrugated, crush and puncture resistant, high-density polyethylene; Franklin Fueling Systems 4" XP Pipe, APT DCT-400.

B. Fittings, Seals, and Joining Materials: Comply with the pipe manufacturer's recommendations.

2.04 FLEXIBLE DOUBLE WALL PIPING

A. Acceptable Piping:
   1. Multi-layer Nylon 12 primary layer construction with secondary Nylon 12 jacket and scuff guard (Nylon 12). Franklin Fueling Systems 1 3/4" APT Pipe, XP-175-SC.

B. UL 971 listed for underground service with petroleum products.

2.05 RIGID DUCTED ENTRY BOOTS FOR FLEXIBLE DOUBLE WALL PIPING

A. Type: Single Wall Rigid Entry Boot suitable for use with duct and single wall fiberglass sumps and sized to match double wall piping; Franklin Fueling Systems APT RDEB series.

2.06 FLEXIBLE CONNECTIONS

A. Underground or Above Ground Application:
   1. Acceptable Companies:
      a. OPW
   2. Features:
      a. Construction: Convoluted, Type 321 stainless steel inner core, minimum 012-inch wall thickness covered with braided Type 304 stainless steel outer jacket.
      b. UL listed for above ground and underground use.
      c. Connections for unleaded gasoline systems shall be fire rated.
      d. Factory installed male swivel on one end.

2.07 TEST BOOTS FOR DOUBLE WALL PIPING

A. Test boots for interstitial space complete with stainless steel clamps and air valve stem for tightness testing.
   1. Flexible Nitrile Rubber: Franklin Fueling Systems APT STB Series.

2.08 TRANSITION SUMP ASSEMBLY

A. One-piece single wall fiberglass sump with epoxy coated galvanized steel top, non-corroding, weatherproof lockable cover, exterior anchoring system. Provides secondary containment and accessibility to the fittings that connect the underground supply piping to the rigid supply piping that leads from an above ground storage tank. The unit shall include all parts required to interface and

seal a rigid supply pipe with flexible underground piping enclosed in a nominal 4-inch diameter duct pipe: Bravo B500 series with planter style lid.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install piping at approximate locations indicated, and at maximum height.

B. Make allowances for expansion and contraction.

C. Allow for a minimum of one-inch free air space around pipe or pipe covering, unless otherwise specified.

D. Install horizontal piping with a constant pitch, and without sags or humps.

E. Install vertical piping plumb.

F. Use fittings for offsets and direction changes as needed.

G. Cut pipe and tubing ends square; ream before joining.

H. Threading: Use American Standard Taper Pipe Thread Dies.

3.02 MOTOR FUEL DISPENSING SYSTEM PIPING

A. Pitch horizontal underground piping upward from the containment sump 1/8 inch per foot minimum.

B. Pitch horizontal above ground piping upward from tank 1/8 inch per foot minimum.

3.03 PIPE JOINT MAKE-UP

A. Threaded Joint: Make up joint with a pipe thread compound applied in accordance with manufacturer's printed application instructions for the intended service.

B. Dissimilar Pipe Joint:

1. Joining Dissimilar Threaded Piping: Make up connection with a threaded coupling or with companion flanges.
2. Joining Dissimilar Non-Threaded Piping: Make up connection with adapters recommended by the manufacturers of the piping to be joined.
3. Joining FRP and Threaded Pipe: Make up connection with adapters as recommended by manufacturers of piping being joined.

3.04 PIPE AND FITTING SCHEDULE

A. Abbreviations: The following abbreviations are applicable to the Pipe and Fitting Schedule.

BS Black Steel
MI Malleable Iron
SE Screwed End
ST Steel

SWStandard Weight

B. The preferred pipe manufacturers are noted on the plans. Options are noted in the specifications as an alternative if desired. Where options are given, choose only one option for each piping service. No deviations from the selected option will be allowed. Any option selected will need to be approved by the DHDES prior to Construction.

C. Motor Fuel Dispensing Piping:
   1. Vent Piping:
      a. Above Ground: Standard weight black steel pipe, with screwed end 150 lb malleable iron fittings, with fuel resistant thread sealant.
   2. Product Piping:
      a. Underground:
         1) Double wall flexible piping with polyethylene duct pipe, with fittings, joining methods, and materials as recommended by flexible primary piping and polyethylene duct pipe manufacturers.
      b. Above Ground:
         1) SW BS pipe, with SE 150 lb. MI fittings, and fuel resistant thread sealant.
   3. Fill Piping:
      a. Above Ground: Standard weight black steel pipe, with screwed end 150 lb malleable iron fittings, with fuel resistant thread sealant.
   4. Interstitial Leak Monitor and Probe Riser Piping: Standard weight black steel pipe, with screwed end 150 lb malleable iron fittings, with fuel resistant thread sealant.

END OF SECTION

PART 1 GENERAL

1.01 REFERENCES

A. NFPA 30 - Flammable and Combustible Liquids Code.

B. NFPA 30A - Automotive and Marine Service Station Code.

C. NFPA 70 - National Electric Code.

D. API 1615 - Installation of Underground Liquid Storage Systems.

E. Underwriter's Laboratories (UL).

F. ETL Testing Laboratories (ETL).

G. Steel Tank Institute (STI).

H. Factory Mutual Engineering and Research (FM).

I. NH Code of Administrative Rules Chapter Env-Or 300 – Aboveground Petroleum Storage Facilities.

J. US Environmental Protection Agency Regulations.

1.02 DEFINITIONS

A. Motor Fuel Dispensing System: Fuel storage tank including leak containment and detection for tank and underground piping, overfill prevention, high level alarm, gauge system, pump dispenser and automated fuel management system.

1.03 SUBMITTALS

A. Submittals Package: Submit the Product Data, and Quality Control Submittals specified below at the same time as a package.

B. Product Data: Catalog sheets, specifications, illustrations, wiring diagrams, CARB Stamp (where applicable), and installation instructions for each item specified for each type of system.

C. Quality Control Submittals:
   1. Tank Installation Contractor's Qualifications Data:
      a. Name of Contractor, business address and telephone number.
      b. Names and addresses of 3 similar projects that the Contractor has worked on during the past 5 years.
   2. Pipe Installer's Qualifications Data:
      a. Name of each person who will be performing the Work and their employer's name, business address and telephone number.

b. Names and addresses of 3 similar projects that each person has worked on during the past 5 years.
c. Copy of certification from pipe manufacturer(s).

3. Factory Test Certificate: For each tank.
4. Company Field Advisor Data:
   a. Name, business address and telephone number of Company Field Advisor secured for the required services.
   b. Certified statement from the Company listing the qualifications of the Company Field Advisor.
   c. Services and each product for which authorization is given by the Company, listed specifically for this project.

1.04 QUALITY ASSURANCE

A. Qualifications:
   1. Tank Installation Contractor: The firm performing the Work of this Section shall have been regularly engaged in the installation and maintenance of above ground fuel storage tanks for a minimum of 5 years and shall have completed 3 similar projects.
   2. Pipe Installer: Individual with minimum 5 years experience in installing fuel piping, have worked 3 similar projects, and shall be certified by pipe manufacturer of the type of pipe being installed.

B. Listings: Components of the system(s) for which Underwriters' Laboratories, Inc. (UL) provides product listing service, shall be listed and bear the listing mark.

C. Regulatory Requirements:
   1. Systems for storing diesel fuel or unleaded gasoline for motor fuel dispensing systems shall comply with the applicable requirements of UL 58, NFPA 30 and NFPA 30A, and NH Chapter Env-Or 300.

D. Company Field Advisor:
   1. Secure the services of a Company Field Advisor of the manufacturer of the leak and overfill monitoring system for a minimum of 6 hours for the following:
      a. Inspect installation and witness initial startup of system.
      b. Train facility personnel in the operation and maintenance of the system (minimum of two 2-hour training sessions). Schedule training sessions with the Director's Representative.
   2. Secure the services of a Company Field Advisor of the manufacturer of the fuel management system for a minimum of 6 hours for the following:
      a. Inspect installation and witness initial startup of system.
      b. Train facility personnel in the operation and maintenance of the system (minimum of two 2-hour training sessions). Schedule training sessions with the Director's Representative.

1.05 WARRANTY

A. Warranty: Thirty-year manufacturer's warranty for each tank.

1.06 MAINTENANCE

A. Spare Parts:
   1. Two keys for each gate padlock as applicable.
   2. Two keys for each dispenser skirt.

B. Special Tools:
   1. One stick gauge and two calibration charts for each fuel tank.
   2. Two tools for each type and size vandal resistant fastener.

PART 2 PRODUCTS

2.01 DOUBLE WALL STEEL PROTECTED FUEL STORAGE TANKS

A. Tanks shall be listed as secondary containment in accordance with UL 2085, and shall be marked fire protected, and physically protected from vehicle impact and projectile hazards.

B. Type: Double wall steel interior tank with minimum 3-inch interstitial space filled with lightweight, porous, monolithic insulation material.
   1. Exterior Protective Coating: Conforming to Steel Tank Institute Standards.
      a. Surface Preparation: SSPC-SP6 grit blast.
      b. Primer: Corrosion resistant epoxy or urethane in accordance with UL 2085 requirements.
      c. Topcoat: Epoxy or urethane in accordance with UL 2085 requirements.

C. Acceptable Tanks:
   1. Fireguard Thermally Protected Tank by Highland Tanks, Manheim, PA, (717) 664- 0600.

2.02 TANK ACCESSORY PACKAGE

A. Submersible Turbine Pump Assembly:
   1. 1-1/2 HP fixed speed, check valve, pressure relief valve, venturi-type syphon, air eliminator, electrical disconnect.
   2. 208 volt, 1 phase, 60 Hz Fixed speed, 3450 rpm, multi-stage centrifugal type pump motor with integral, automatic, thermal overload protection.
   3. Mechanical leak detector.
   4. Length to suite tank.
   5. Provide necessary controllers for a complete and operational system.
      a. Acceptable Manufacturer: FE Petro STP series.

B. Ladder Assembly:
   1. Ladder shall meet OSHA Standards.
   2. Ladder provides access to the stick gauge port.
   3. Assemblies shall either be painted with the tank or galvanized in accordance ASTM Standard A53-96.

C. Gauging Equipment:
   1. Stick Gauge Port (Furnished with all tanks): Accessible from ladder assembly.
   2. Mechanical Gauging: Field adjustable float type gauge with minimum 4-1/2-inch dia. display face, vapor tight construction, and stainless steel float. Acceptable Manufacturer: OPW
   3. Electronic Gauging: Magnetostrictive probe which include temperature sensors and both product and water floats capable of sensing product level to nearest 0.001 inch.
      a. Acceptable Manufacturers: Veeder Root, Simsbury, CT, (800) 873-3313 or OMNTEC, Ronkonkoma, NY, (516) 467-5787.
      b. Upon demand, the system shall indicate water level, product level, and average product temperature.
      c. System shall sense and alarm leakage rates greater than 0.2 gal/hr.

D. Venting:
   1. Vent primary tank with normal and emergency venting (NFPA 30 and UL 2085 test configuration. Vent interstitial space with emergency venting only.
   2. Vent Caps:
      a. Unleaded Gasoline: Pressure-vacuum type; OPW 723V-3203(EVR).
      b. Diesel Fuel: Open type with 30 or 40 mesh screen, Morrison Bros. 354-0300AV.
   3. Emergency Vent: Aluminum body with cast iron lid, zinc plated steel shaft, and Buna-N O-ring; Morrison Bros. 2440M-0600AVEVR.
      a. Conforming to NFPA 30, and UL 2085 test configuration.

E. Tank Identification:
   1. Type: Two-layer etched plastic or metal permanently attached to the tank.
      a. Decals or stenciling is not acceptable.
   2. Signs shall include the following information:
      a. Manufacturer's statement that tank conforms with NHDES requirements.
      b. Standards of Design by which tank was manufactured.
      c. List of products and additives which may be permanently stored in tank, including NFPA placard.
      d. Year in which tank was manufactured.
      e. Unique identification number.
      f. Dimensions, working capacity, and tank model number.
      g. Name of tank manufacturer and installer.
      h. Tank manufacturer and date of tank installation.
      i. Safe Fill Height

F. Fill Limiting Valve:
   1. Tanks 6000 gallons and up: OPW 61FSTOP-3050T (set at 95% tank capacity).
      a. Drop tube as required.
      b. Adapter: OPW 633-T, EMCO Wheaton A30; 3-inch size.

c. Cap: OPW 634-TT, EMCO Wheaton A97, EBW 774, or Morrison Bros. 305C.

G. Remote Fill Spill Container:
   1. Type: Heavy gauge stainless steel, welded-hinge, lockable hatch, lockable stainless steel ball valve drain; Fairfield Industries, Inc., MTO-ARFP-2-T-WMB.
      a. Minimum Size: 10 gallons.
   2. Lock: Master Lock 911-DKA.
   3. Check valve: Swing check valve: Morrison Bros., Co. # 246ADI-0500AV.
   4. Fill adaptor: Kamlock adaptor; OPW 633F series.
   5. Stainless Steel Dust Plug: 733DLC-20SB

H. Stickport:
   1. Provide a port for manually gauging the tank including a lockable vapor tight twist off cap; Morrison Bros. 178X, EBW706, or OPW 83-0066.
   2. All tanks shall be provided with a stick gauge.

2.03 TANK GAUGING, LEAK AND OVERFILL MONITOR SYSTEM

A. Acceptable Companies:
   1. Veeder Root Inc., Simsbury, CT, (800) 873-3313.
   2. OPW, Hotchkins, IL, (708) 465-4200.
   3. OMNTEC/Electro Levels Mfg. Co., Ronkonkoma, NY, (516) 467-5787.

B. Type: Continuous operation tank gauging, leak detection and overfill monitor system for double wall storage tanks, double wall product piping, and containment sumps.
   1. Systems shall have system test capability and shall be UL listed.

C. Alarm Monitor Panels: Locate panel inside building as directed by Director's Representative.
   1. The alarm panel shall visually indicate the following:
      a. Status of each tank's interstitial space.
      b. Status of each containment system.
      c. Status of high-level sensor set at 90% of tank operating capacity (on or off). When sensor is tripped, audio alarm shall be activated and be audible at fill port location.

D. Non-Discriminating Leak Sensors:
   1. Detects leaks in the following:
      a. Interstitial space between tank walls.
      b. Piping system which drains into containment sump.
      c. Tank overflow chamber.
   2. Sensors: Non discriminating type not sensitive to condensation forming on the sensor surface or dripping across the sensor surface.

E. Magnetostrictive Gauge Probe:
   1. Includes temperature sensors, and both product and water floats capable of sensing product level to nearest 0.001 inch.
   2. Upon demand, the system shall indicate water level, product level, and

average product temperature.

3. System shall sense and alarm leakage rates greater than 0.2 gal/hr.

F. Instrumentation Control Cable: Connect probe and sensor to alarm monitor panel, as recommended by manufacturer of leak and overfill monitor system.

G. Audible Overfill Alarm Device: Weatherproof, surface mounted basic grille type, 120 V ac as manufactured by tank gauging, leak detection and overfill monitor system manufacturer.

H. Overfill Alarm Device Sign: Constructed of 1/8-inch-thick two-color laminated plastic engravers stock, with the words engraved in white on red background. Size sign and lettering for easy reading from ground level in accordance with construction drawings and NHDES approval.

I. Printer: As recommended by system manufacturer. If printer is thermal type provide 6 rolls of thermal paper at each location.

2.04 UNLEADED GASOLINE INSTALLATION PACKAGE

A. Full Size Remote Dispensers:
   1. Twin Hose, Single Product Type: Wayne (SHC) G7227D series with hose with swivel fittings on each end, breakaway fitting, illuminated product panel and register area, pulser, and hose mast assembly; 115/230 V ac.
   2. Standard Gasoline Hose and Nozzle Assembly:
      a. Nozzle: Standard type; OPW VA-PK0400-075.
      b. Breakaway Coupling: Dry reusable type; OPW.
      c. Hose: 3/4-inch dia.
   3. Dispenser Accessories:
      a. Totalizer.
      b. Double swivel fitting.
      c. Whip hose.
      d. Pulser.
      e. Fuel Filters: As manufactured by Cim-Tek for required fuel type and environmental conditions.
      f. Hose Mast Assembly: Wayne 889918-001.
   4. Cabinet and Frame:
      a. All stainless-steel construction.
   5. Under Ground Dispenser Sump: One-piece single wall fiberglass sump; Franklin Fueling Systems APT.
      a. Designed for use with twin hose, single product, Wayne remote dispensers.
      b. Provides leak containment during dispenser use and filter change outs.
      c. Penetrations for conduit and double wall piping.
      d. Adjustable stabilizer bar with bolt on shear valve bracket. Valve bracket.
   6. Mark dispensers with a warning sign reading "NO SMOKING - TURN OFF ENGINE- DO NOT DISPENSE GASOLINE INTO UNAPPROVED CONTAINERS".

B. Manual Shutoff Valve: Steel ball valve, 2-inch size, Jomar T-2000, or Morrison Bros. 691BSS (stainless steel).

C. Explosion Proof Solenoid Valve: Brass, 2-inch size; ASCO 8210 with Viton seal, or stainless steel Morrison Bros. 710 with Teflon seal.

D. Pressure Relief Valve: Steel, 1/4-inch size; Morrison Bros. 77.

E. Flexible Hose: Fire rated, UL listed, braided steel as manufactured by Franklin Fueling Systems VST Series.

F. External Emergency Valve: Spring loaded fusible link type; OPW 10BU-5925.

2.05 DIESEL FUEL INSTALLATION PACKAGE

A. Full Size Remote Dispensers:
   1. Twin Hose, Single Product Type: Wayne (SHC) G7227D series with hose with swivel fittings on each end, breakaway fitting, illuminated product panel and register area, pulser, and hose mast assembly; 115/230 V ac.
   2. Hose and Nozzle Assembly:
      a. Nozzle: Standard type; OPW 7H-0100.
      b. Breakaway Coupling: Dry reusable type; OPW 66-1300.
      c. Hose: One inch dia.
   3. Dispenser Accessories:
      a. Totalizer.
      b. Fuel filter as recommended by the manufacturer,
      c. Double swivel fitting.
      d. Whip hose.
      e. Pulser.
      f. Fuel Filters: As manufactured by Cim-Tek for required fuel type and environmental conditions.
      g. Hose Mast Assembly: Wayne 889918-001.
   4. Cabinet and Frame:
      a. All stainless-steel construction.
   5. Under Ground Dispenser Sump: One-piece single wall fiberglass sump; Franklin Fueling Systems APT.
      a. Designed for use with twin hose, single product, Wayne remote dispensers.
      b. Provides leak containment during dispenser use and filter change outs.
      c. Penetrations for conduit and double wall piping.
      d. Adjustable stabilizer bar with bolt on shear valve bracket.Valve bracket.

B. Manual Shutoff Valve: Brass, full port ball valve, 2-inch size, Jomar T-100NE, or Morrison Bros. 691B.

C. Explosion Proof Solenoid Valve: Brass, 2-inch size; ASCO 8210 with Viton seal, or stainless-steel Morrison Bros. 710 with Teflon seal.

D. Pressure Relief Valve: Steel, 1/4-inch size; Morrison Bros. 77.

E. Flexible Hose: UL listed; braided steel as manufactured by Franklin Fueling Systems VST Series.

F. External Emergency Valve: Spring loaded fusible link type; OPW 10BU-5925.

2.06 FUEL FOR TESTING

A. Coordinate with the Facility thru the Director's Representative for the delivery of a full tank of each appropriate fuel type for testing to verify that fuel transfer equipment and instrumentation is operating properly.
   1. The Facility shall pay for delivery of fuel.

2.07 FUEL MANAGEMENT SYSTEMS

A. Type A: Stand alone, magnetic stripe card activated, self-contained, island mounted type capable of 24-hour monitoring, and simultaneous control of maximum of 4 hoses.
   1. Acceptable System:
      a. Petro Vend 200 Fuel Management System by OPW Fuel Management Systems, 6900 Santa Fe Drive, Hodgkins, Illinois 60525, (708) 485-4200, www.doverfuelingsolutions.com.
   2. Features:
      a. Microprocessor:
         1) Capable of reprogramming without changing hardware and communicates with communication controller by internal network or by dial-up phone lines.
         2) Memory: 2 MEG.
      b. Keypad: Heavy duty, alpha-numeric membrane type with separate key for each letter (no shift or function keys required).
      c. Display: Backlit LCD with contrast adjustment that is highly visible and easy to read in total darkness or direct sunlight.
      d. Dispenser selection controlled thru system logic by vehicle and/or operator card data.
      e. Programmable to limit delivery by card or vehicle identification.
      f. Audible "Card Left in Reader" alarm.
      g. Capable of recording and storing transaction data including operator vehicle, quantities, day and time, odometer reading; and printing this information on demand.
      h. Interfaces with fuel dispensers, tank monitoring equipment, and capable of data transfer via modem to facility computers.
      i. Storage capacity with battery backup for minimum 500 transactions.
      j. Transient protection on AC power input and modem communication.
      k. Manual system override switches.
      l. Weatherproof Cabinet and Stand: Powder coated steel construction.
      m. Capable of reconciliation reporting.
      n. Maximum Operating Temperature: -40 degrees F to 122 degrees F

2.08 FASTENERS

A. Vandal Resistant Fasteners: Stainless steel, allen or torx head, both with center post.

PART 3 EXECUTION

3.01 PREPARATION

A. Testing Prior to Installation:
   1. Before placing the tank in place, plug all openings and pressure test tank in accordance with manufacturer's printed test instructions, unless otherwise specified.
   2. Tanks should not be pressurized beyond manufacturer's specified limits.
   3. The tank must hold the test pressure for 30 minutes.
   4. Check fitting connections, and seams in tank by applying a soap suds solution.
   5. Reject any leaking tanks.

3.02 INSTALLATION

A. Install the Work of this section in accordance with the item manufacturer's printed installation instructions, unless otherwise shown or specified.

B. Dispenser: Install dispenser and accessories in accordance with manufacturer's printed installation instructions unless otherwise directed.
   1. Mount splitter fitting high enough to prevent the hose from touching the concrete when the nozzle is hung in its' housing.
   2. Overlap hose mast clamp on the hose mast a minimum of 6 inches to act as a whip hose for the breakaway coupling. Install breakaway coupling on nozzle side of clamp.

3.03 TANK ACCESSORIES

A. Fuel Identification: Attach laminated plastic nameplate to each tank fill pipe to identify the fuel in the tank.

B. Tank Identification: Affix tank identification label, or plate permanently to tanks and fill ports.

C. Install padlocks on all lockable caps on fill and vapor recovery piping.

D. Terminate vent lines with vent caps.

E. Overfill Alarm Device Sign: Mount sign adjacent to alarm horn per construction drawings.

F. Vent Caps:
   1. Install vent caps at end of vent piping minimum of 12 feet above finished grade.

3.04 FIELD QUALITY CONTROL

A. Testing: After installation of tank and piping, test the system in the presence of the Engineer or Owner's representative as follows:
   1. Piping: Before painting or backfilling, plug ends and test with air in accordance with approved construction drawings.
      a. Provide written documentation to the Owner that air test was performed with passing results.
   2. Tanks: Pressure test tank in accordance with manufacturer's printed test instructions, unless otherwise specified.
      a. Tanks should not be pressurized beyond manufacturer's specified limits.
      b. The tank must hold the test pressure for 60 minutes per approved construction drawings.
      c. Check fitting connections, and seams in outermost tank by applying a soap suds solution.
      d. Provide written documentation to the Owner that testing was performed with passing results.
   3. Product Level and Overfill Protection:
      a. Test the high-level alarm in the presence of the Engineer. The contractor shall trigger the high-level alarm manually and simulate the tank filling process without fuel present in the tanks. Product cannot be placed into the tanks prior to the final NHDES inspection and authorization for use.
      b. During this simulated manual filling process, the Engineer will monitor and record the low-level alarm and the overfill alarm thresholds.
      c. Make required repairs and final adjustments.
      d. Test the fill limiting valve in accordance with the manufacturer's recommendations.
   4. Liquid Sump Sensors
      a. Test each sump sensor by manually triggering the console alarm in order to verify functionality and communication with the console unit to be located in the building.
   5. Motor Fuel Dispensing System:
      a. After reconnecting all piping, dispensers, and tanks, and when directed, perform a system acceptance test in the presence of the Owner's representative to demonstrate that the fuel dispensing system is operating properly.
      b. Make required repairs and final adjustments.
   6. Third Party Testing
      a. The contractor shall provide Third Party Testing results as directed by Owner and submit as part of the closeout documentation.

END OF SECTION

PART 1 GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall design, furnish, assemble and install a prefabricated steel fueling canopy, including concrete footings and lighting, in accordance with the size and lines indicated on the construction drawings and in strict accordance with manufacturer's specifications.

B. The gross dimensions of the canopy, including length, width, overhead clearance, number of columns, and column spacing, shall be in accordance with the construction drawings.

1.02 SUBMITTALS

A. The Contractor shall furnish and install a fueling canopy and associated appurtenances in accordance with manufacturer's specifications and with the approved shop drawings. The Contractor is responsible for submitting three (3) sets of design drawings, including footing design, reinforcement and anchor bolt placement. These shop drawings shall be signed and sealed by a NH Licensed Professional Engineer, for approval within 21 days of the contract award.

1.03 QUALITY ASSURANCE.

A. Canopy design is to be based on ASTM E950-14 standard specifications for metal canopy system, fabrication techniques, and installation methods.

B. The canopy shall be designed and constructed in accordance with the New Hampshire Building Code

1.04 WARRANTY

A. Canopy to be free of defects in material, leaks, and workmanship for a period of 1 year from the date of substantial completion. Fascia finish will carry a 10- year warrantee against peeling, flaking and chipping.

PART 2 PRODUCTS

2.01 COLUMNS

A. Structural steel tubing shall be used.

B. Square steel tube to be ASTM A500 Grade B, minimum yield strength 46 ksi.

C. Size to meet or exceed specific project design load requirements.

D. Provide each column with a 4" electrical access opening and cover plate.

2.02 BASE PLATES

A. ASTM A572, Grade 50 plate to be a minimum, ¾" thickness with welded gussets. Shop fabricated with pre-punched or pre-drilled bolt holes.

2.03 TOP PLATES

A. ASTM A572, Grade 50 plate to be a minimum ¾" thickness with welded gussets. Shop fabricated with pre-punched or pre-drilled bolt holes.

2.04 STRUCTURAL FRAMING

A. ASTM A992, 50 ksi wide-flange steel beams shall be used.

2.05 STRUCTURAL CONNECTIONS

A. ASTM A36 structural steel for miscellaneous plates and angles.

B. All framing members shall be shop fabricated for bolted field assembly.

C. Domestic ASTM A325 high strength bolts shall be used. All ASTM A325 bolts shall be installed per the RSCS Specification for Structural Joints, contained in part 16, Specifications and Codes of the AISC Steel Construction Manual, latest edition.

D. Flange and purlin bracing where required.

2.06 ANCHOR BOLTS

A. ASTM F1554 Grade 55 hex head bolt with a minimum yield strength of 55 ksi.

B. 1 ¼" diameter x 30" long standard bolt with the hex head embedded in concrete footer.

C. Threaded projection above footing shall be 7".

D. Double nuts and washers for each bolt shall be provided, one set to be used for plumbing and leveling.

E. Templates for setting anchor bolts shall be provided.

F. Templates shall be removed before setting column on foundation.

2.07 PAINTING

A. All framing members will be given one shop coat of drying red oxide primer.

2.08 DECK PANELS

A. ASTM A792 Galvalume having an AZ50 aluminum-zinc coated surface, minimum yield strength of 50 ksi.

B. 20 gauge, 16" wide x 3" deep steel panels.

C. Panels are fastened to the wide-flange beams with an engineered screw type clamp and lock nut system.

D. No splicing of deck panels will be allowed.

E. Panels shall have a finish side coated with a full coat of polyester paint baked on over an epoxy primer. A whitewash coat of polyester baked on over an epoxy primer shall protect the reverse side.

F. Panels to be manufactured in sufficient length to avoid unnecessary center gutters.

2.09 FASCIA

A. ACM Panels
   1. Alumi8num composite material, of varying thicknesses, is a sandwich panel consisting of 2 aluminum sheets bonded to a polyethylene core.

B. Fascia Attachment Systems
   1. Fascia support braces to be 20-gauge galvanized steel. Braces are formed into a C-channel 1 ½" wide x 1 ¼" deep x 10' long.

2.10 ACCESSORIES

A. Gutter
   1. Straight sections to be ASTM A792 Galvalume having an AZ50 aluminum-zinc coated surface.
   2. Straight sections of 20-gauge steel are 8" wide x 6" deep.
   3. Straight gutter sections shall have a finish side coated with a full coat of polyester paint baked on over epoxy primer. A Whitewash coat of polyester paint baked on over epoxy primer shall protect the interior surface.

B. Downspouts
   1. External downspouts to be 4" x 3" roll formed 26 gage steel with watertight locked seams.
   2. Exterior paint with one full coat of polyester paint baked on over epoxy primer.
   3. Downspouts to be of one contiguous length up to 15'.

C. Collectors
   1. Collectors to be circular and constructed of gel-coated fiberglass.

D. Internal Drains
   1. 3" schedule 40 PVC.

E. Hardware
   1. Gutter to deck panel fasteners shall be ¼" dia. x ¾" long self-drilling screws.

F. Sealant
   1. Tube sealant shall be 100% urethane caulk for water-proof areas, and silicone caulk for cosmetic.

PART 3 EXECUTION

3.01 CONCRETE FOOTINGS

A. The Contractor shall pour all canopy footings in accordance with the manufacturer's requirements and the sealed design drawings. All footings shall be poured to the same top elevation.

B. Concrete canopy footings shall be constructed in accordance with manufacturer requirements, the sealed structural plans, and with NHDOT Standard Specifications for Structures Division 500.

C. Canopy footings shall be poured to a minimum depth below finished grade as required by local codes and ordinances. Supply and install sub-base materials in accordance with the canopy foundation design.

3.02 STEEL AND ACCESSORIES

A. Provide four square steel columns spaced as shown on the construction drawings.

B. Canopy clearance will be 16' from the bottom of the fascia to the highest finished grade.

C. The canopy will have a 36" high ACM fascia on all four sides with square corners. Color shall be white from the manufacturer's standard options.

D. Canopy deck will be made from 16" 20-gauge steel with bottom deck design. Deck material will be white and have a smooth finish.

E. The canopy will have internal drains with collectors. Gutter system shall be finished white.

F. Provide eight surface mounted canopy light fixtures as noted on the construction drawings.

G. Provide electrical conduit in columns in accordance with construction drawings.

H. All columns and structural steel to be gray in color industrial grade rust-inhibiting primer finish.

3.03 GENERAL

A. The Contractor shall mastic coat all steel bolts in accordance with manufacturer's recommendations.

B. The Contractor shall paint steel canopy in the following manner and in accordance with NHDOT Standard Specifications.
    1. Spot prime any scratched or damaged areas of factory installed primer and paint.
    2. Touch-up any primed steel with two (2) coats of exterior enamel to match factory applied paint.
    3. Do not prime pre-finished fascia.
    4. Complete all painting touch ups prior to attaching signage or other appurtenances to the canopy. Do not paint around signs and appurtenances.
    5. Any unpainted areas of structural steel shall be primed and painted, including the ends of the canopy columns.

C. The Contractor shall make connections between the canopy drain risers and the new underground drainage system, to provide a fully functioning system.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Basic electrical materials and installation. Limited scope general construction materials and methods for application with electrical installations.

1.02 INSTALLATION - GENERAL

A. Use of Drawings and Field Conditions: The drawings are diagrammatic, unless detailed dimensioned drawings are included, and show only approximate locations of equipment, fixtures, panelboards, conduits, and wiring devices. Exact locations are subject to the approval of the Owner's Representative. The general run of electrical feeders, branch circuits, and conduits/raceways indicated on the drawings is not intended to be the exact routing. Field route conduits and raceways to suit job conditions.

B. Installation and Measurements: Make measurements at the site and in the building during construction for all systems installed, as the work progresses, in such a manner that equipment, piping, ducts, conduits/raceways and boxes will fit in the space available. Maintain minimum 7’-6” headroom wherever possible, and in unfinished areas, install electrical equipment and conduits/raceways neatly and as obscure and "out-of-the-way" as physically possible.

C. Coordination: Where more than one trade is involved in an area, space or chase, cooperate with the other trades and install work to utilize the space equally in proportion to their individual trade requirements. In general, ductwork shall be given preference except where grading of piping becomes a problem, followed by piping, and then electrical conduits and raceways. If, after installation of any equipment, piping, ducts, conduits/raceways, and boxes, it is determined that ample maintenance and passage space has not been provided, rearrange work and /or furnish other equipment as required for adequate space.

D. Field Changes: If changes in the size or location of the material or equipment supplied is necessary in order to meet field conditions or to avoid conflicts between trades, bring such matters to the immediate attention of the Architect/Engineer and gain approval before proceeding with such alterations.

1.03 QUALITY ASSURANCE

A. General: Install electrical equipment in a neat and workmanlike manner. All methods of construction, details of workmanship, that are not specifically described or indicated in the contract documents, shall be subject to the control and approval of the Architect/Engineer.

B. Equipment and Materials: Of the quality and manufacture specified. Equipment specified is based upon the acceptable manufacturers listed. Equipment types, device ratings, dimensions, etc., correspond to the nomenclature dictated by those manufacturers. Where "or equal" is stated, equipment shall be equal in every way to that of the equipment specified and is subject to approval. All equipment shall

be tested at the factory. Unless specified elsewhere, standard factory inspection and operational tests will be acceptable.

1.04 SUBMITTALS

A. Product Data: Manufacturer's descriptive literature and any other information necessary to indicate compliance with the specified requirements Submit product data for the following:

1. In-Grade Hand Holes.
2. Conductors.
3. Wiring Devices and Coverplates.
4. Circuit Breakers.
5. Lighting Fixtures.
6. Fuel System Electrical Equipment.

PART 2 PRODUCTS

2.01 RACEWAYS

A. General: All raceways shall meet applicable NEMA standards and be UL-Listed with each length so labeled.

B. Acceptable Manufacturers- Metallic Raceways: American Flexible Conduit Company; Republic Conduit; Allied Tube and Conduit; Wheatland Tube Company.

C. Acceptable Manufacturers- Rigid Non-Metallic Conduits: Cantex; Carlon; National Pipe and Plastics; Queen City Plastics, PW Eagle.

D. Rigid Metal Conduit: Manufactured from mild steel, hot-dipped galvanized inside and out including threads, conforming to ANAI C80.1 and UL-6.

E. Electrical Metallic Tubing: Manufactured from mild steel, hot dipped galvanized inside and out, conforming to ANSI C80.3 and UL-797.

F. Flexible Metal Conduit: Constructed in one continuous length of electro-galvanized, spirally wound steel strip with interlocking convolutions and interior surfaces free from burrs and sharp edges, conforming to UL-1.

G. Liquid-Tight Flexible Metal Conduit: Same as flexible metal conduit, with extruded liquid-tight PVC jacket, and conforming to UL-360.

H. Rigid Non-Metallic Conduit: Schedule 80 90ºC, PVC rigid plastic conduit, conforming to ASTM F-512, NEMA TC-2 and UL-651.

I. Metal Conduit Fittings:

1. UL-listed for the intended application, steel or malleable iron, conforming to ANSI/NEMSA FB-1. Fittings for rigid metal conduit shall be fully threaded. Connectors 1 -inch size and smaller to include insulated throat. Connectors larger than 1-inch size to include plastic insulating bushing.
2. Do Not Use: Diecast, pressure cast or set-screw type fittings.

3. Acceptable Manufacturers: O.Z Gedney; Steel City; Thomas & Betts; Crouse-Hinds.

J. Non-Metallic Conduit Fittings: Solvent cemented, compatible with specified rigid non-metallic conduit. Acceptable Manufacturers: Same as for Rigid Non-Metallic Conduits.

K. Wireways:

1. General: UL listed, 16-gauge 304 stainless steel, NEMA-4X, supplied in standard sectional lengths. Include snap-in wire retaining spring clips where necessary to hold conductors in place.
2. Size: Cross section per NEC or as indicated.
3. Covers: Butt hinges, external screw clamps and gasketed.
4. Fittings and Accessories: Elbows, tees, pull boxes, hangers, reducers, supports, hardware, etc. as required for a complete installation.
5. Acceptable Manufacturers: Square D; Hoffman; Meco.

2.02 BOXES

A. Outlet Boxes:
1. Type: Non-gangable galvanized steel, with square cornered tile (or masonry) type extension rings or covers.
2. Minimum Box Size: As required by the NEC, but minimum 4” square or two-gang masonry box, and minimum 2” deep unless restricted by the surroundings.
3. Mounting: Boxes and associated fittings, plates and devices shall be mechanically fastened (screwed). Friction fitting not acceptable.
4. Outlet Boxes Exposed to Moisture, Exterior, Wet or Damp Locations: Cadmium cast alloy or malleable iron, complete with external threaded hubs and gasketed screw fastened covers. Boxes shall be approved for the environmental condition where they will be installed.
5. Acceptable Manufacturers: Steel City; Raco; Appleton; Crouse Hinds.

B. Pull and Junction Boxes:

1. Sized per NEC.
2. General (Dry Location) Use: Minimum 14-gauge galvanized steel with trim for flush or surface mounting as applicable, and screw-on type covers.
3. Damp and Wet Location Use: NEMA 4x construction with gasketed cover and threaded conduit hubs. Boxes shall be approved for the environmental condition of the location where they will be installed.
4. Acceptable Manufacturers: Hoffman; Keystone.

C. Boxes, Fittings and Seal-Offs for NEC Classified Areas: Listed as required for the type of classified area in which each is being installed. Acceptable Manufacturers: Appleton, Killark, O-Z/Gedney.

D. In-Grade Hand Holes: Dimensions as indicated, light-weight and high strength, constructed of fiberglass reinforced polymer concrete, gray color, suitable for use at temperatures down to -50 degrees F, and resistant to sunlight, weathering, chemicals, and freeze-thaw cycles, with bolt-on cover (with standard logo

indicating type of service), and designed / test load of 22,500#/33,750#.. Acceptable Manufacturers: Quazite, Old Castle,

2.03 CONDUCTORS (BUILDING WIRE)

A. Description: 600 volts class, in standard AWG and kcmil sizes. Conductors shall be 98 percent uncoated copper, with heat and moisture resistant dual rated type THHN/THWN-2 insulation.

B. Size: As indicated and per NEC, and minimum #12 AWG except smaller sizes may be used for control circuits, and communications and special systems (see respective specification sections).

C. Stranding: Conductors size #14 through #10 AWG may be solid or stranded. Conductors' sizes #8 AWG and larger to be Class B stranded. Conductors' sizes #16 AWG and smaller shall be solid single strand.

D. Labeling: For full length of conductor, indicating UL seal, manufacturer's name, wire size and insulation type.

E. Insulation Colors: Color impregnated insulation, in colors to meet color coding requirements in Part 3.

F. Acceptable Manufacturers: General Cable; Southwire; Okonite, Cerro Wire.

2.04 CONDUCTOR LUGS AND CONNECTORS

A. General: UL listed, factory fabricated, designed for respective application, conductor type and size, and rated for continuous operation at the current rating of its respective conductor. Compression fittings to utilize industry standard crimping tools and dies.

B. Acceptable Manufacturers: Amp; Burndy, Ilsco; Ideal; O.Z/Gedney; 3M; Thomas & Betts.

C. Connectors (#10 AWG and Smaller): Nylon shell insulated spiral steel spring type screw-on connectors.

D. Terminations (#10 AWG and Smaller, Stranded): Nylon insulated crimp ring or fork type connectors for connecting conductors to screw terminals.

E. Connectors (#8 AWG and Larger): Compression type, with molded plastic insulators.

F. Lugs (#8 AWG and Larger): Compression type.

2.05 WIRING DEVICES AND COVERPLATES

A. General: Specification grade as a minimum, unless otherwise specifically indicated

B. Acceptable Manufacturers: Hubbell; Appleton, Crouse Hinds, Larsen Electronics.

C. Motor rated toggle switch: 20 amp, 120-240v volt, 2P, toggle, quick make-quick break, side/back wired, ion NEMA 3, Class 1 Div 2 enclosure.

D. Special Receptacles: As indicated on the drawings by ratings and/or NEMA configuration. For each special receptacle on the Project, furnish a matching 6' to 10' long (as required) cord and plug set, and connect to respective equipment, unless respective equipment is furnished with same.

E. Weatherproof Receptacle Coverplates: Weatherproof, cast aluminum with hinged and neoprene gasketed stay-open while-in-use cover and stainless-steel hardware. Acceptable Manufacturer: Steel City or approved equal.

2.06 EQUIPMENT CONNECTIONS

A. General: Materials as specified in this Section, and as indicated or required.

2.07 HANGERS AND SUPPORTS

A. Materials and Design: All hangers, supports, fasteners and hardware shall be zinc-coated or equivalent corrosion resistance by treatment or inherent property, and shall be manufactured products designed for the intended application. Products for outdoor use shall be hot dipped galvanized.

B. Types: Hangers, straps, riser supports, clamps, U-channel support systems, threaded rods, etc. as indicated and required.

C. U-Channel Supports: Steel with electroplated zinc finish for interior dry locations. Wet location and exterior channel support systems shall be steel with hot dipped galvanized finish and stainless-steel hardware as a minimum. Cut ends shall be touched up with suitable matching finish. Provide all necessary accessories including bolts, screws, anchors, connection plates, end caps and straps as required for a complete installation.

D. Acceptable Manufacturers: Unistrut; Globe; Kindorf; B-Line.

2.08 ELECTRICAL IDENTIFICATION

A Nameplates: Three-layer laminated plastic with minimum 3/16" high white engraved characters on black background and punched for mechanical fastening. Fasteners to be self-tapping stainless-steel screws or number 10-32 stainless steel machine screws with nuts and flat and lock washers.

B. Underground Warning Tape: Traceable 6" wide polyethylene tape, permanently bright colored with continuous printed legend indicating general type of underground line below and "CAUTION".

C. Marking Pens: Permanent, waterproof, quick drying, black ink. Acceptable Manufacturers: Sanford's No. 3000 "Sharpie", or equal.

D. Wire Tags: Vinyl or vinyl cloth self-adhesive wraparound type, indicating appropriate circuit number, etc.

2.09 GROUNDING

A. Conductors: As specified elsewhere in this section, and as indicated.

B. Clamps and Pressure Connectors: Cast copper, copper alloy, or bronze alloy, suitable for use with aluminum and copper. Double-bolt type with formed shoe and "U" cable clamp for connection to pipe or conduit; single-bolt type with cable shoe and "U" cable clamp for connections to flat bar or metal; and double-bolt, parallel conductor split clamp type for cable-to-cable connections.

C. Exothermic Welded Connections: Acceptable Manufacturers: Caldweld; Thermoweld.

2.10 SAFETY SWITCHES

A. General: NEMA heavy duty, horsepower rated, fully enclosed, fusible (with rejection fuse clips) or non-fused as indicated, quick-make, quick-break switching mechanism interlocked with cover, and NEMA-1 (indoors) or NEMA-3R (outdoors) enclosure unless indicated otherwise.

B. Ratings and Poles: Provide switches with ratings and number of poles as indicated (or as required to suit load if ratings are not indicated)..

C. Solid Neutral: Include for all switches where neutral conductor is present.

D. Equipment Ground: Include equipment ground kit for each switch.

E. Acceptable Manufacturers: Eaton; General Electric; Siemens; Square D.

2.11 CIRCUIT BREAKERS

A. Circuit Breakers: Bolt-in, molded case with thermal and magnetic trips unless indicated otherwise. Provide breakers with higher ratings where indicated or necessary to meet required panelboard short circuit ratings. Lower rated overcurrent protective devices based on series ratings with upstream devices will not be acceptable.

B. "HACR" Rating: All circuit breakers serving fueling system equipment (e.g., pumps and dispensers) to be "HACR" rated.

C. Circuit Breakers Added to Existing Panelboards: Ampere ratings and number of poles as indicated. Match existing manufacturer, model, type, voltage and highest interrupting rating in same panelboard.

2.12 FUEL SYSTEM ELECTRICAL EQUIPMENT

A. Provide factory assembled Fleet Fuel Dispensing Management Panel (FFDMP): Similar to Franklin Fueling Systems FPS-4-4-4-M-2-3-1-8-AC Electric distribution Fuel Panel, Low voltage disconnects, series connected surge suppression, (designed for fuel dispensing system control and emergency shut-off, complying with NEC Art. 514, NFPA 30A, and UL listed). In addition, provide FFDMP with

integral branch circuit distribution circuit breakers per panel schedule on contract drawing E-101.

B. Fuel System Emergency Power Off Station (FEPO): Similar to E-Stop Solutions #IA-ESOCA-T pushbutton station (yellow with red button, twist to release with lift-up clear cover) and with #IA-ESPLATE mounting nameplate.

PART 3 EXECUTION

3.01 RACEWAYS

A. General: Install raceways continuous from outlet box to outlet box and from outlet box to cabinet, junction or pull box. Secure and bond each raceway to each associated box and cabinet so that raceway system is electrically continuous throughout.

B. Sizing: Size raceway as required by the National Electrical Code (minimum) with oversize conduits as indicated and where required for ease of pulling wire or cable.

C. Minimum Conduit Size: 3/4" unless indicated otherwise.

D. Types: Unless indicated otherwise, use raceway types as follows:

1. In All NEC Classified Areas: Use only galvanized rigid steel conduit with required fittings to suit the location classification.
2. Indoors, Concealed in Walls or Above Ceilings: EMT.
3. Indoors, Exposed: Use rigid galvanized steel conduit for all conduits installed in DPW Maintenance Building and elsewhere below ten feet above finished floor. EMT may be used above then feet.
4. Outdoors, Exposed: Rigid galvanized steel conduit.
5. Outdoors, Below Grade for all Fuel Systems Lines: Schedule 80 PVC except where exiting grade use Rigid galvanized steel conduit only for all above grade installations.
6. Outdoors, Below Grade (Elsewhere): Schedule 80 rigid non-metallic conduit in grass and under pavement and concrete areas.
7. Flexible Metal Conduit: Use in dry locations only, for connections to vibrating equipment, and equipment requiring minor adjustments in positions, for final connections to recessed lighting fixtures, between outlet boxes in stud partitions, and for all final connections to all indoor transformers.
8. Liquid-Tight Flexible Metal Conduit: Use where flexible metal conduit connections are required in damp, wet or oily locations, and for final connection to all motors and motorized equipment.
9. Wireways: As indicated or required.

E. Routing: As required by job conditions unless specific routes or dimensioned positions are indicated on the Drawings. Install tight to slabs, beams and joists wherever possible. Minimize bends and offsets as much as practicable. Verify exact locations of all raceways, pull boxes, and junction boxes. Resolve any potential conflicts before commencing installation. Route exposed conduit, and conduit installed above ceilings, parallel or perpendicular to walls, ceilings and

structural members. Install to maintain maximum possible headroom and to present a neat appearance.

F. Installation (General): In accordance with the NEC and NECA's "Standards of Installation". Cut conduit ends square using saw or pipe-cutter and ream each cut end smooth. Bush where necessary. Carefully make all conduit bends and offsets so that the inside diameter of pipe is not reduced. Make bends so that legs are in the same plane. Make offsets so that legs are in the same plane and parallel. Protect stub-ups from damage, and carefully re-bend when necessary.

G. Fittings: Make up all raceway fittings tight so that final installation of raceway, fittings and enclosures constitutes a firm mechanical assembly and a continuous electrical equipment grounding conductor. Where required, provide bonding jumpers to assure electrical continuity.

H. Conduit Support Spacings: No greater than allowed by NEC for the respective conduit type. Securely fasten each conduit within 3 feet of each connecting outlet box, junction box, cabinet or fitting.

I. Protection: Protect and cap all raceways, enclosures and equipment during construction to prevent entry of concrete, mortar, debris and other foreign matter. Free clogged conduits of all obstructions, or replace, prior to pulling wire. Do not pull wire until building is completely enclosed.

J. Heat Producing Equipment and Hot Surfaces: Maintain not less than 12 inches clearance between all raceways systems and any such equipment/surfaces.

K. Expansion Joints: Provide expansion fittings as required by NEC and for each conduit crossing a building expansion joint so that no undue stress is placed on the conduit due to the proper functioning of the expansion joints.

L. Penetrations Through Structural Members: If it is necessary to burn holes through webs of beams or girders, call such points to the attention of the Architect/Engineer and obtain written approval both as to location and size of hole before proceeding with work. All holes shall be burned no larger than absolutely necessary.

M. Hazardous locations: Provide conduit seals at locations specified in NEC Art 514 and as required by equipment manufacturers.

N. Bushings: Provide a bushing at each conduit termination unless fitting at box where conduit terminates has hubs designed in such a manner to provide equivalent protection to conductors. Provide grounding type insulated bushings on all conduit sizes 1-1/4-inch trade size and larger, and on all feeder raceways regardless of size. Provide standard bushings for conduits 1-inch and smaller.

O. Differing Temperatures: For raceways routed between areas with differing temperatures (interior to exterior, etc.) install raceway as follows:

1. Provide a thermal break, 4 in. minimum of stainless-steel conduit within space wall/separation.
2. Seal raceway penetration through the wall/separation.
3. Provide a box on each side of the space wall/separation.

4. Provide raceway interior sealant (duct seal or suitable foam) to provide a complete air barrier after conductors are installed.
5. Mounting of raceway and boxes on equipment shall be coordinated and approved by the equipment manufacturer.
6. Raceways On Wet, Damp or Exterior Walls: Provide spacers to maintain a minimum ½" space/void between the mounting surface and the raceway.

3.02 OUTLET BOXES

A. Size: As specified and per NEC.

B. Locations: Outlet locations shown on Drawings are approximate only. Study architectural, mechanical, plumbing and structural drawings and roughing-in, and note surrounding areas in which each outlet is to be located. If necessary, adjust outlet location so that when fixtures, motors, cabinets, equipment, etc., are placed in position, outlet will serve its desired purpose. Where conflicts exist between drawings, contact Architect/Engineer for resolution prior to rough-in.

C. Horizontal Alignment: Where outlets at different mounting heights are indicated on drawings adjacent to each other (due to lack of physical space to show symbols on drawings), install outlets on a common vertical line.

D. Light Switch Outlets: Where shown adjacent to strike side of a door, locate edge of outlet box approximately three inches from door frame.

E. Surface Wall Mounted Outlet Boxes: Use cast type boxes.

F. Outlet Coverplates: Install a device coverplate over each and every outlet indicated on drawings, unless indicated to be provided by others. Provide blank plate for each outlet without an indicated device. Do not install coverplates until painting, cleaning and finishing of surfaces surrounding the outlet are complete.

3.03 JUNCTION AND PULL BOXES

A. General: Provide as indicated and as useful/necessary to suit field conditions, length of and number of bends per conduit run, and for ease of pulling conductors/cables.

B. Size: As indicated and per NEC.

C. Installation: Install all junction and pull boxes rigidly, plumb and level. Support and secure boxes independently from conduits terminating at box. Install boxes so as to be readily accessible and so that covers may be easily removed.

3.04 WIRING METHODS

A. General: All wiring systems to be composed of individual 600-volt class wires installed in specified raceway systems, except as follows:

3.05 CONDUCTOR SIZES AND QUANTITIES

A. Minimum Conductor Size: All branch circuit wiring shall be minimum #12 AWG. All control circuit wiring shall be minimum #14 AWG. Provide larger sizes as

indicated or required for NEC required ampacity derating. All feeders and circuits to be same conductor size for full length of run from source to termination, unless indicated otherwise.

B. Branch Circuit Conductor Sizes: Provide branch circuit wire sizes as indicated. Neutral wire sizes to match respective phase wire sizes unless indicated otherwise.

C. Branch Circuit Common Neutrals: (Not permitted).

D. Combining Homeruns: Do not combine separately indicated homeruns in single conduit unless specifically approved by the Architect/Engineer.

E. Maximum Number of Conductors in Branch Circuit Raceways: Nine. Upsize conductor sizes for ampacity adjustments as required by 2014 NEC Table 310.15(B)(3)(a).

F. Switch Legs: Provide branch circuit switch legs and travelers as required for the switching indicated.

G. Service and Feeders: Provide service and feeder conductor sizes and quantities as indicated. Do not combine more than one feeder into a single conduit.

H. Equipment Grounding Conductor Required: For each branch circuit and feeder run, provide an equipment grounding conductor, sized per NEC (minimum, larger if so indicated) whether indicated or not.

3.06 CONDUCTOR INSTALLATION

A. General: Install all conductors, cables and associated items in compliance with all applicable requirements of the NEC, NEMA, UL and NECA's "Standards of Installation", and in accordance with the respective manufacturer's recommendations.

B. Terminations: Furnish and install terminations, including lugs, if necessary, to make all electrical connections indicated or required. Enclose all strands of stranded conductors in connectors and lugs.

C. Tightening: Tighten all connectors, lugs, screws, bolts, Allen-heads and other electrical fasteners to torque values per manufacturer's written instructions.

D. Restrictions: Do not substitute smaller conductors with higher temperature rated insulations in lieu of the conductors shown on the Drawings.

E. Conductor Installation- General: Do not install conductors/cables until respective raceway system, including all outlets, cabinets, bushings and fittings, is completed. Verify that all work of other trades which may cause conductor damage is completed. Use only U.L. approved cable lubricants when necessary. Do not use mechanical means to pull conductors #8 AWG or smaller.

F. Phases and Grounds: All wiring systems shall be properly grounded and continuously polarized throughout, following the specified color-coding.

G. Feeder Connections: Make all feeder connections to bus and other equipment using solderless, pressure type terminal lugs.

H. Branch Circuit Splices and Taps, #10 AWG and Smaller: Use specified nylon shell insulated spiral steel spring type screw-on connectors.

I. Splices and Taps, #8 AWG and Larger: Use insulated solderless set-screw AL/CU or hydraulically compressed sleeve fittings suitable for the intended use.

J. Slack Conductor Lengths: Provide minimum six inches of slack length for each conductor in each junction box, pull box and termination. For branch circuit outlets, leave a minimum of 8 inches free conductor length for connections of devices and fixtures.

K. Splices and Connections: Make in accessible boxes and cabinets only.

L. Uninsulated Splices and Free Conductor Ends: Completely insulate with rubber and friction tape, PVC electrical tape, or plastic insulating caps. Heat shrink sleeves are acceptable for crimp and compression type splices.

M. Feeder Conductors: Install continuous from point of origin to load termination without splice. If this is not practical, contact the Architect/Engineer and receive written approval for splicing prior to installation of feeder(s). Where feeder conductors pass through junction and pull boxes, bind and lace conductors of each feeder together. For parallel sets of conductors, match lengths of conductors as nearly equal as possible.

N. Conductors in Panelboards and Control Panels: Neatly train and bind together using "Ty-Raps" or equal.

O. Vertical Conduit Runs: Provide cable/conductor support per NEC.

P. Color Code: Color code all service, feeder and branch circuit wires as follows:

1. 120/208 Volts: Phase A (Black); Phase B (Red); Phase C (Blue), Neutral (White).
2. Equipment Grounding Conductors: Green.

3.07 WIRING DEVICES AND COVERPLATES

A. Switches: Locate switches in accessible locations near room/space entry point(s). Install single-pole and double-pole switches so that the circuit is on when the switch handle is up.

B. Receptacles: Install receptacles with ground pin down when mounted vertically.

C. GFCI Receptacles: For each receptacle designated or indicated to be "GFCI", provide a GFCI type receptacle. Do not substitute general use receptacle with feed thru GFCI protection from upstream GFI receptacle.

D. Coverplates: Provide coverplate for each wiring device or group of devices. Where devices are shown adjacent (e.g. bank of light switches), mount all such adjacent devices under one multi-gang coverplate, unless indicated otherwise.

3.08 EQUIPMENT CONNECTIONS

A. General: Connect complete, all equipment requiring electrical connections, furnished as part of this Contract or by others, unless indicated otherwise. Confirm exact equipment termination requirements with equipment provider, confirm termination locations with trade furnishing and installing the respective equipment.

B. Equipment Variations: Note that equipment sizes and capacities as shown on the Contract Documents are for bidding purposes and as such may not be the exact unit actually furnished. Contractor shall anticipate minor variations in equipment and shall include in his Bid all costs required to properly connect the equipment actually furnished.

C. Verification: Obtain and review product data, shop drawings, and manufacturer's written installation instructions for equipment furnished by others. Examine actual equipment to verify proper connection locations and requirements.

D. Coordination: Sequence electrical rough in and final connections to coordinate with the installation and start up schedule and work by other trades.

E. Rough-In: Provide all required conduit, boxes, fittings, wire, connectors and miscellaneous accessories, etc. as necessary to rough-in and make final connections to all equipment requiring electrical connections.

F. Motors and Equipment: In general, motors and motorized equipment shall be wired in conduit to a junction box (or safety switch) near the unit, and from there to the unit in liquid-tight flexible metal conduit.

G. Connections: Provide properly sized overload and short circuit protection for all equipment connected, whether furnished under this Contract or by others. Verify proper connections with manufacturer's published diagrams and comply with same. Report any discrepancies between the Contract Documents and actual equipment requirements. Do not proceed with connections until resolved. Verify that equipment is ready for electrical connections, wiring and energization, prior to performing same.

H. Control Wiring: Provide all control wiring to remote devices or equipment as indicated or required. Modify equipment control wiring, install or disconnect jumpers, etc. as required for proper operation of equipment.

I. Fueling Systems Motors: Provide all required power and control conduit and wiring from indicated power and control source to each motor controller and from each motor controller to respective motor. Make all connections to motors and control equipment complete and leave equipment in proper operating order. Connect power to motors for correct direction of rotation. Verify nameplate ratings of all motors. Report any deviations or discrepancies.

3.09 HANGERS AND SUPPORTS

A. General: Rigidly support and secure all electrical materials, raceway and equipment to building structure using hangers, channels, supports and fasteners,

suitable for the use, materials and loads encountered. Provide all necessary hardware.

B. Overhead Mounting: Attach overhead mounted equipment to structural framework or supporting metal framework. Do not make attachments to steel roofing, steel flooring or ceiling tiles.

C. Wall Mounting: Support wall mounted equipment by masonry, concrete block, metal framing or sub-framing.

D. Exterior Building Walls: Mount all electrical equipment located on the interior of exterior building walls, at least 1/2" away from wall surface, using suitable spacers.

E. Structural Members: Do not cut, drill or weld any structural member except as specifically approved by the Architect/Engineer.

F. Independent Support: Do not support electrical materials or equipment from other equipment, ductwork or supports for same.

G. Raceway Support: Rigidly support all raceway with maximum spacings per NEC, and so as to prevent distortion of alignment during pulling operation. Use approved hangers, clamps and straps for individual raceway runs. Do not use perforated straps or tie wires. Where multiple parallel raceways are run together, use trapeze type hanger arrangement made from U-channel and accessories, suspended by threaded rods, and allow at least 25% spare capacity for future installation of additional raceways. Rigidly anchor vertical conduits serving floor-mounted or "island" type equipment mounted away from walls with metal bracket or rigid steel conduit extension secured to floor.

H. Miscellaneous Supports: Provide any additional structural support steel brackets, angles, fasteners and hardware as required to adequately support all electrical materials and equipment.

3.10 EQUIPMENT MOUNTING HEIGHTS

A. General: As indicated.

B. Where structural or other interferences prevent compliance with mounting heights listed above, consult Architect/Engineer for approval to change location before installation.

3.11 ELECTRICAL IDENTIFICATION

A. General: Locate nameplate, marking or other identification means on outside of front covers when above ceilings, in equipment rooms, and when in other unfinished areas. Locate on backside of front cover when in finished rooms/areas. Use Contract Document designations for identification legends unless indicated otherwise.

B. NEC Required Identification: Provide all equipment identification, warning signs, etc. as required by the NEC.

C. Electrical Rooms: Provide warning sign for each electrical room door indicating "DANGER - HIGH VOLTAGE - KEEP OUT". Signs to be adhesive backed, yellow background, black letters.

D. Manufacturer Supplied Equipment Nameplates: Provide equipment nameplates and markings, with all information as required by NEMA and UL.

E. Nameplates: Provide an engraved nameplate (with minimum height characters indicated) for each of the following:

1. Switchboards, meter centers, distribution panels and motor control centers- (1/2" H). Indicate equipment name and voltage, phases and wires.

2. Overcurrent devices, and all other devices mounted in any of the above - (5/16" H).

3. Branch circuit panelboards, safety switches, motor controllers and drives, individually mounted circuit breakers, transformers, relay enclosures, and miscellaneous electrical cabinets - (5/16" H). Indicate equipment name (or load served) and voltage, phases and wires.

4. Motor control stations, and toggle switches located remote from load served, or where function is not readily evident - (3/16" H).

5. Communications and special system cabinets - (5/16" H).

F. Marking Pen Labeling: Mark each junction and pull box indicating source designation and circuit number(s) for the enclosed conductors.

G. Wire Tags: Apply wire tag indicating appropriate circuit or feeder number to each conductor present in panelboard gutters, and to each conductor in pull and junction boxes where more than one feeder or multi wire branch circuit is present. Where only a single feeder or multi wire branch circuit is present, box cover labeling and conductor color coding is sufficient. For control, communications and signal circuits, apply wire tag indicating circuit or termination number at all terminations and at all intermediate locations and boxes where more than one circuit is present.

H. Panelboard Circuit Directories: For each panelboard, provide and accurately complete a new circuit directory card in typewritten form, identifying load served or "spare" or "space" for each circuit pole space. Use actual Owner designated room numbers or names (not construction room numbers or designations)

I. Wiring Devices: Using adhesive backed printed tape, label each wiring device coverplate, indicating respective panel designation and circuit number serving the device. Attach tape label to inside or outside of device coverplate as directed by Owner.

3.12 GROUNDING

A. General: Provide all system and equipment grounding and bonding as indicated and as required by the NEC.

B. Equipment Grounding: Provide a green equipment grounding conductor, sized per NEC (larger if so indicated) with each feeder and branch circuit run.

C. System Grounding:

1. General: Solidly ground the low voltage electrical system (service) neutral as indicated and required. The system neutral shall be grounded only once. Provide a main bonding jumper between the system neutral and the main disconnect enclosure ground bus, with ampacity not less than required by the NEC. Do not ground the system neutral at any other point in the electrical distribution system.

2. Grounding Electrode System: For the electrical service, provide a main ground bar and grounding electrode system, terminated at the service main disconnect enclosure ground bus as indicated. Do not splice grounding electrode conductors.

3. Grounding Electrodes: Provide grounding electrode conductors from main ground bar to building steel, water service pipe(s), and ground rods as indicated. Provide jumper connections around all meters, insulating unions and removable fittings, etc. in the water pipe(s).

4. Grounding Electrode Connections: Make grounding electrode connections accessible. Connect grounding electrode system to system neutral electrically ahead of any overcurrent protective device or disconnecting means, so that disconnection of neutral load conductors does not interfere with or remove the system neutral ground connection.

5. Grounding Electrode Conductor Installation: Install grounding electrode conductors in rigid non-metallic (PVC) conduit or other nonconductive, nonmetallic enclosure where a raceway system is indicated or necessary for conductor installation, unless indicated otherwise. Install grounding electrode conductors without splice from the enclosure neutral bus to the connection point at the grounding electrode system. Where grounding electrode conductor is indicated or required to be installed in a metallic raceway, provide a grounding bushing at each end of the raceway and bond the enclosed grounding electrode conductor to the raceway via the grounding bushing.

6. Ground Rods: Install vertically with top of ground rod approx. 4” above finished floor, unless indicated or required otherwise.

7. Grounding AST’s: Install ground conductor in AST concrete bearing pad as shown on Contract Drawings and in accordance with Manufacturer’s recommendations.

3.13 SAFETY SWITCHES

A. Mounting: Mount safety switches where indicated, and on wall or column adjacent to unit served, or directly to unit or supporting framework where applicable, indicated or required.

B. Connections: Make all indicated/required electrical connections.

3.14 FUELING SYSTEM PANELS AND CIRCUIT BREAKERS

A. General: Secure fueling system panels to building structure or steel framing, independent of conduits. Install with top of box per NEC restrictions. Neatly train and tie all wiring within enclosure.

B. Cover all unused overcurrent protective device spaces.

C. Existing Panelboards to Remain: Provide new breakers, revise feeders and circuiting, etc. as indicated and required. Update circuit directories to reflect all changes made.

3.15 LIGHTING FIXTURES

A. General: Install lighting fixtures, complete with LED and drivers. Provide all necessary accessory fittings, hangers, stems, clamps, brackets, yokes, outlet boxes, and miscellaneous devices required for a complete installation as recommended by the fixture manufacturer.

B. Quantity: Per Electrical Drawings.

C. Mounting and Support: Securely support and/or suspend all lighting fixtures from structural members of fueling canopy.

D. Defective Lamps and Drivers: Replace all burned out, defective and inoperative LED lamps, and all noisy, defective and inoperative drivers, prior to Owner's acceptance.

3.16 FUEL SYSTEM ELECTRICAL EQUIPMENT AND WORK

A. Electrical Work for Fuel Dispensing and Tank Monitoring Systems: Provide all work indicated and require for a complete installation. Before commencing work, confirm and coordinate with the Fuel System Contractor, all requirements for conduits and wiring and miscellaneous electrical work required to achieve a fully functioning fueling system. Report any and all significant discrepancies to the Architect/Engineer for resolution before starting work.

B. Requirements: Install all electrical work in compliance with all applicable requirements of the NEC and NFPA 30, 30A, especially pertaining to special requirements for Class I Div 1 and Div 2 locations. Provide conduit seal-offs for conduits in every location they are required.

C. Fuel Dispenser Manager Panel: Install where indicated and make all required electrical connections whether or not indicated. Coordinate and confirm required connections with the Fuel System Contractor to ensure proper operation of fuel dispensing systems in compliance with contract documents and all applicable codes and standards. Test for proper operation. Correct as required.

D. Fuel System Emergency Power Off Station (FEPO): Provide mounting post with concrete base, install station, and make all required electrical connections. Install sign. FEPO to shut off all power to the Fuel Tank Island and the Fuel Dispenser

Island via the Fuel Dispenser Manager Panel. Test for proper operation. Correct as required.

E. Tank System Pumps, Measurement Devices and Alarm Devices: Install where indicated and make all required electrical connections whether or not indicated. Coordinate all electrical rough-in requirements and confirm required connections with the Tank / Fuel System Contractor prior to starting electrical work. Ensure proper operation of fuel storage and pumping systems are in compliance with all applicable codes and standards. Perform preliminary and final operation test to insure proper system operation. Correct as required.

F. Fuel Management System: Make all required electrical connections whether or not indicated. Coordinate and confirm required connections with the Fuel Management System Contractor to ensure proper operation of fuel management systems in compliance with contract documents and all applicable codes and standards. Test for proper operation. Correct as required.

3.17 CONDUCTOR TESTS

A. Branch Circuits: Test during installation for continuity and identification and perform operational tests to determine that all circuits perform the function for which they are intended.

B. Feeder Conductors: For all feeder conductors rated 600 volts or less, provide "Megger" insulation test prior to energizing, using a 1,000-volt motor driven megger. Apply test voltage until readings reach a constant value, and until three equal readings, each one minute apart, are obtained. Minimum megger reading shall be 45 megohms for feeder conductors. Document test results and submit for approval prior to energizing conductors.

END OF SECTION

ATTACHMENT B

SITE IMPROVEMENT PLANS – VEHICLE FUELING FACILITY FOR HUDSON PUBLIC WORKS DEPARTMENT, ASSESSOR'S MAP 17, LOT 30, 2 CONSTITUTION DRIVE, HUDSON, NH, PREPARED FOR THE TOWN OF HUDSON, PREPARED BY GREENMAN-PEDERSEN, INC DATED MAY 1, 2023, REVISED JUNE 14, 2023, ISSUED FOR BID JUNE 23, 2023.

INDEX OF DRAWINGS

DRAWING NUMBER	DRAWING TITLE
T-100	Title Sheet
V-100	Partial Existing Conditions Plan
C-100	General Notes & Legend
C-101	Site Overview Plan
C-102	Site Layout Plan
C-103	Grading, Utility & Erosion Control Plan
C-104	Detail Sheet
M-100	AST Plan
M-101	Tank and Piping Details
M-102	Tank and Piping Details
M-103	Tank and Piping Details
E-001	Electrical Legend & Abbreviations
E-100	Electrical Site Plan
E-101	Electrical Details & Schedules
E-200	Canopy Lighting Photometric Plan
E-201	Canopy Lighting Isometric Plan
S-100	Conceptual Canopy Elevations

ATTACHMENT C

CLOSEOUT DOCUMENT CHECKLIST

ATTACHMENT C – CLOSEOUT DOCUMENTATION CHECKLIST

Manufacturer Installation Checklists for all AST system components, piping, and appurtenances.

☐ Highland Tank Fireguard Limited Warranty Validation Card

☐ APT Piping Installation Checklist

Manufacturer's Installation and Setup Checklist for the electronic and mechanical overfill protection devices, and environmental monitoring system, including certificate of operation.

☐ Veeder Root Warranty Registration and Checkout Form

☐ Veeder Root Final Setup Printout

Copies of all permits and certificates of inspection and/or approvals

☐ NHDES AST Conditional Construction Approval (Supplied by Town)

☐ NHDES Backfill Authorization (Piping only)

☐ NHDES Authorization to Operate System

☐ NHDES Annual Line Leak Detector Test Form for AST and UST Systems

☐ NHDES Annual Leak Monitoring and Overfill Protection Test Form for AST Systems.

☐ NHDES Tank and Piping Tightness Testing Form for AST and UST Systems

☐ NHDAM&E – Bureau of Weights & Measures Placed in Service/Inspection Report Form

As-Built Construction Drawings and Photographs

☐ Marked up Drawings

☐ Photos

Tank and Piping Test Results, including all secondary containment structures and containment sumps.

☐ Tank Test Certification

☐ Primary and Secondary Piping Test Certification (Pre-Backfill)

☐ Sump Test Certification (Pre-Backfill)

☐ Overfill Valve Measurement Certification (Pre-Operation)

Registrations

☐ NHDES AST Registration Form (signed by installer)

Warranties for all Project Equipment

☐ Any equipment warranties not included in warranty/installation checklists above

Training Documentation for all project equipment (signed by individuals trained on equipment)

☐ Dispensers

☐ Monitoring System

☐ Spill Prevention, Control, and Countermeasure (SPCC) Plan (Supplied by Town)

All instruction bulletins, preventative maintenance scheduled, operational Instructions, and parts lists for installed equipment

☐ Dispensers

☐ Monitoring System

☐ Other

Release of Liens

☐ General Release of Liens

☐ Release of Liens for Subcontractors

☐ Copies of Receipts for any keys, locks, other equipment turned over to the Town. Signatures of recipient and printed names required.

Highland Tank®
www.Highlandtank.com
Celebrating 65 Years of Experience
One Highland Road
Stoystown, PA 15563
P: 814-893-5701
F: 814-893-6126

Thank you for your purchase of a Highland Tank. The following documents are included for your use. Please read them carefully. If you have any questions, please contact us.

FIREGUARD

- 30 year Warranty Registration Card
- 30 year Warranty
- Installation Instructions and Checklist
- Maintenance Instructions
- MSDS for Coating Touch Up Kit

Please visit us at www.highlandtank.com

One Highland Road
Stoystown, PA 15563
814-893-5701
FAX 893-6126

4535 Elizabethtown Road
Manheim, PA 17545
717-664-0600
FAX 664-0617

958 19th Street
Watervliet, NY 12189
518-273-0801
FAX 273-1365

2700 Patterson Street
Greensboro, NC 27047
336-218-0801
FAX 218-1292

2225 Chestnut Street
Lebanon, PA 17042
717-664-0602
FAX 664-0631

1510 Stoystown Road
Friedens, PA 15541
814-443-6800
FAX 444-8662

Fireguard® Limited Warranty Validation Card

Please complete this form to validate your tank manufacture's Limited Warranty. This card must be completely and accurately filled out and returned to STI within 30 days after the tank is installed, or within 90 days after the tank is shipped from the manufacturer, whichever comes first. Warranty limitations may exist based on the product stored in the tank, please refer to the limited warranty document supplied with this form. By signing this form, the tank owner verifies that the tank was installed in accordance with STI Installation Instructions, the product stored is compatible with the tank, and the owner has read and agrees with the terms of the Limited Warranty, included with this form.

Manufacturer's Name: _____ **Fireguard Label:** _____

INSTALLER INFORMATION **– name of company that installed the tank**

Warranted Date: _____ **Work Order #:** _____ **Date Installed:** _____

Installer Name: _____ **Phone:** _____

TANK LOCATION INFORMATION **- where tank was installed**

Name of Facility (where tank is installed): _____

Street address: _____ **Suite:** _____

Contact Name _____ **Phone:** _____

City: _____ **State:** _____ **ZIP:** _____ **Country:** _____

TANK OWNER MAILING ADDRESS **– how do we contact the owner of the tank**

Owner name: _____

Mailing address: _____ **Suite:** _____

Contact Name: _____ **Phone:** _____ **Fax No:** _____

City: _____ **State:** _____ **Zip:** _____ **Country:** _____

Email address: _____

TANK USAGE INFORMATION **PLEASE TELL US ABOUT WHAT THE TANK WILL STORE & THE TYPE OF FACILITY**

Check Product(s) Stored in this Tank:

- ☐ Gasoline
- ☐ Heating Oil (Petroleum #1, #2, #4, #5 WHICH IS NOT HEATED)
- ☐ Diesel fuel or kerosene for powering motor vehicles
- ☐ Generator Power Fuels
- ☐ Diesel fuel or kerosene for heating premises
- ☐ #6 Heating Oil
- ☐ Aviation Gas
- ☐ Biodiesel
- ☐ Crude Oil
- ☐ Oil/Water Separator
- ☐ Water or Wastewater
- ☐ Chemicals
- ☐ Jet Fuel
- ☐ E85
- ☐ Waste Oil
- ☐ Alcohol Blended Gasoline
- ☐ Fertilizers
- ☐ Product which is heated during storage: _____
- ☐ Other: _____

Check Type of Facility Where Tank is Installed:

- ☐ Gas Station
- ☐ Private Residence
- ☐ Car Dealer
- ☐ Convenience Store
- ☐ Quick Lube
- ☐ Industrial Site
- ☐ Hospital
- ☐ Airport
- ☐ Utility Site
- ☐ Farm/Nursery
- ☐ Other _____
- ☐ Marina
- ☐ Oil Company
- ☐ Fed'l Gov't (military, postal, parks, banks)
- ☐ State Gov't (jails, parks, hwy, banks, etc)
- ☐ Local Gov't (hwy, fire, police, parks, etc)
- ☐ Schools (univ, college, high/jr high, grade)
- ☐ Apartment
- ☐ Fleet Owner
- ☐ Jobber

SIGNATURE REQUIRED

My signature below verifies that this tank was installed in accordance with STI Installation Instructions, the product stored is compatible with the tank and I have read and agree with the terms of the Limited Warranty, provided with this document.

Signature (of person providing this information): _____ **Date:** _____

Please Print Name: _____

Company Name: _____ **Phone:** _____

Thank you for completing this document and returning it to the STI address below:

STEEL TANK INSTITUTE • 944 Donata Court • Lake Zurich, IL 60047 • 847/438-8265 • FAX 847/438-8766

This document is furnished as a service to a Steel Tank Institute member

Fireguard® LIMITED WARRANTY
Limitations of Liability and Disclaimer

What is Covered by this Warranty
Provided that the conditions set forth below are satisfied, the steel tank manufacturer identified with the tank (hereinafter referred to as "Warrantor") warrants the **Fireguard®** tank for 30 years following delivery of the tank to the tank owner at the time of the original installation ("the Owner"), against any of the following events which may occur, provided the event occurs under conditions covered by this Warranty: (i) the release of stored product from any secondary containment tank; or (ii) the non-corrosive related structural failure such as cracking, breakup or collapse; or (iii) the perforation of the primary tank caused by internal corrosion as long as the product stored within the tank is not corrosive to steel; or (iv) compatibility failures with the internal tank wall (such as blistering, cracking of the tank wall and stiffeners, permeation of product through the tank wall, delamination, and loss of tank wall due to crazing, solvation or dissolvement). Water which accumulates in the primary tank solely as a result of incidental or natural accumulation due to condensation or sediment arising from the product shall not be considered a corrosive product. In addition, the Warrantor warrants the tank against failure due to defective materials and workmanship for up to 1 year following the delivery of the tank to the Owner.

Conditions to Warranty Effectiveness
The limited warranties set forth herein are subject to the following conditions:

1. The **Fireguard®** tank must be: (i) the original aboveground installation within the Continental United States of America, Alaska, Hawaii, and the Commonwealth of Puerto Rico or Canada; (ii) the tank was fabricated by the Warrantor so as to meet the Fireguard® Specifications; and (iii) the tank was installed and maintained in accordance with the applicable Fireguard® specifications and the applicable Fireguard® Installation Instructions that were in effect on the date of shipment by the Warrantor, any subsequent maintenance procedures of which the Owner has written notice, and any applicable governmental codes and regulations. Refer to the Installation Instructions attached to this document for technical requirements concerning relocation of this tank by the original owner, in order to retain warranty eligibility. Tanks remaining in their original installation location will retain warranty eligibility if the facility where the tank is installed is sold to a new owner.

2. This Limited Warranty is not valid unless, and until, the Warranty Validation Card is fully completed by the Owner and returned to the addressee set forth on the Warranty Validation Card within 30 days after the date of tank installation, or 90 days after the Warrantor's shipment of the tank, whichever comes first.

3. Upon discovery of a suspected tank failure or leak by the Owner, the Owner shall give the Warrantor written notice of the suspected tank failure or leak and permit the Warrantor or its designated representative to inspect the tank site prior to, during and after removal of the tank. The tank owner bears the responsibility to identify that the cause of the failure is from one of the events within the Conditions covered by the Warranty.

4. Upon the Warrantor's determination that the tank failure or leak is covered by this Limited Warranty, the Warrantor at its sole option shall: (i) repair the tank; or (ii) replace it with a tank of approximately the same size, design, quality of material and workmanship specified for the original tank; or (iii) refund the purchase price of the original tank. If the Warrantor is unable to repair or replace the tank, it shall refund the original purchase price of the tank.

What is Not Covered by this Warranty
Warrantor does not warrant any piping system or any other attachments connected with the tank. Under no circumstances, shall the Warrantor be liable for (i) the cost of repair or replacement of any piping system or other attachments to the tank; or (ii) labor costs or other installation costs for tank repair or replacement; or (iii) damages to the tank or other property resulting from the accumulation of water in the tank, unless such accumulation is solely the result of incidental or natural accumulation due to condensation or sediment arising out of the storage of product that is compatible with the tank and not corrosive to steel; or (iv) tank failures caused, in whole or in part, by the tank owner's failure to adhere to proper tank maintenance procedures as described in the Installation Instructions provided with the tank or otherwise made available to the tank; or (v) tank failure caused, in whole or in part, by the tank owner's failure to follow applicable statutes, codes, ordinances and regulations regarding tank maintenance; or (vi) damage caused by other improper operating practices; or (vii) tank failure due to defective materials and workmanship later than one year following delivery of the tank to the Owner; or (viii) cost of repair or replacement of internal linings or external coatings. This Warranty does not cover STI Generator Base Tanks.

Limitation of Liability and Exclusion of Other Remedies and Damages
The foregoing remedy of repair, replacement or refund shall constitute the sole and exclusive remedy to the Owner. Under no circumstances, shall the liability of the Warrantor, or its affiliates or subsidiaries, under this warranty, exceed the purchase price of the tank.

IN NO EVENT SHALL THE WARRANTOR, OR ITS AFFILIATES OR SUBSIDIARIES, BE LIABLE FOR CLAIMS OF PERSONAL INJURY OR FOR SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS OR REVENUE, LOSS OF USE OF THE TANK OR ANY ASSOCIATED EQUIPMENT, COST OF CAPITAL, COST OF THE SUBSTITUTE EQUIPMENT, FACILITIES OR SERVICES, DOWNTIME COST, CLAIMS OF CUSTOMERS OF THE OWNER FOR SUCH DAMAGES, OR FOR DAMAGE TO PROPERTY, WHETHER SUCH CLAIM SHALL BE FOR BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE OR STRICT LIABILITY, AND WHETHER SUCH CLAIM ARISES OUT OF OR RESULTS FROM THIS LIMITED WARRANTY, OR EXPRESS OR IMPLIED WARRANTIES, OR FROM THE DESIGN, MANUFACTURE, SALE, DELIVERY, RESALE, INSTALLATION, TECHNICAL DIRECTION OF INSTALLATION, INSPECTION, REPAIR, OPERATION OR USE OF THE TANK.

Consumer Notice
The exclusion of indirect or consequential damages and the limitation of implied warranties herein may not be applicable to purchasers who are deemed "consumers" and who reside in states that do not allow the limitation of implied warranties or the exclusion of indirect or consequential damages otherwise applicable to consumers. Moreover, if you are deemed a "consumer", you may have specific legal rights in addition to those set forth in this warranty, which rights vary from state to state.

Disclaimer of Other Warranties
THE FOREGOING LIMITED WARRANTY IS THE ONLY WARRANTY MADE. THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Financial Assurance
Warrantor may have purchased insurance to cover some of its warranty obligations under this Limited Warranty. Such insurance would provide financial assurance for Warrantor's warranty obligations, but would not insure the Owner directly. If the Warrantor has purchased such insurance coverage, the Owner may request that the Warrantor provide a certificate of insurance to evidence Warrantor's purchase of such insurance.

Effective with installations on or after January 1, 2017

Item # 130-40-0005 1/17

APT® Installation Checklist & Warranty Start-up Form

Site Owner: _____
Site Address: _____
Site Phone Number: _____
City: _____ State: _____ Zip: _____
Owner/Operator: _____
Installation Completion Date: _____

Installation Contractor: _____
Address: _____
City: _____ State: _____ Zip: _____
Telephone: _____
Distributor: _____

[ ] Complete Fuel Transfer & Containment System are all APT® Products

Pre-Installation Check:
[ ] Installer has copy of Installation Guide
[ ] Installer has visually inspected all materials for shipping and storage damage

Tank Information:
[ ] New Tanks
UST Manufacturer:

Tank Installation Information:
[ ] Tanks Anchored
[ ] Deadman Anchoring [ ] Tank Tie-Down Slab

Tank Excavation Information:
[ ] High Water
[ ] Has site ever been Contaminated/Remediated

Trenching:
[ ] Excavation depth allows for 4" bedding
[ ] Bedding installed, graded, and has proper slope
[ ] Width is sufficient to accommodate all runs of pipe with proper spacing
[ ] Minimum pipe burial depth verified
[ ] Direction changes wide enough to accommodate proper bend radii

Bedding and Backfill:
[ ] Clean sand
[ ] Pea gravel
[ ] Crushed stone (1/8" to 3/4")

Tank Sumps, Dispenser Sumps, Intermediate Sumps, Etc.:
[ ] Tank sumps mounted to tanks using approved method
APT® Tank Sump: _____
Model #: _____
APT® Dispenser Sump: _____
Model #: _____

Sump Inspection:
[ ] Visual Inspection (every 30 days)
[ ] Sump Sensors
[ ] Installer verifies they have properly tested the turbine sumps and dispenser sump 4" above the side seam or highest penetration point

APT® Factory Certified Installer

Print Name: _____

Signature: _____

As owner / operator I have read and comprehend the APT® warranty document FFS-0079.

Print Name: _____

Signature: _____ **Date:** _____

This form must be properly completed and signed by a certified contractor on site during installation. It must also be returned to FFS no later than 60 days after the installation of the APT® products.

Fittings:
[ ] Clamshell
[ ] Swage

Entry Boots:
[ ] Rubber Entry Boot
[ ] Rigid Entry Boot

Piping:
Total footage installed at this site:
Flexpipe Model #: _____ Date Code: _____

Primary Piping:
[ ] Fittings installed properly with clamps tightened metal to metal
[ ] All 45 degree, 90 degree, elbows and T's rated at 150 LB scedule 40 or greater
[ ] Primary pipe tested (not to exceed 100 PSI)
[ ] All metal fittings installed in accessible sumps

Secondary Containment:
[ ] Scuff guard cut outside of sump wall
[ ] Secondary containment jacket has been stripped to proper length
[ ] All secondary containment air test boots properly installed
[ ] Secondary containment air test performed between 5-8 PSI

Ducting:
[ ] Ducting installed

Installation Procedures:
[ ] All piping runs installed with proper spacing

Final Inspection:
[ ] Air relieved from secondary containment jacket
[ ] Secondary air test boots loosened to allow free flow
[ ] Removing test tubes from dispenser / turbine sump:
  [ ] After the secondary pipe testing has been completed, remove the test tube (BPT-200).
  [ ] Loosen the clamps from around the test boot and (STB) and slide the test boot towards the XP fitting so the secondary is open and available for visual inspection.
[ ] Leaving test tubes in place in the dispenser sump:
  [ ] After the secondary pipe testing has been completed on site, loosen the clamps from around the test boot (STB) in the turbine sump only and slide the test boot towards the XP fitting so the secondary is open and available for visual inspection. Leave the test tubes and test boots in place and tight in the dispenser sumps.
[ ] Air relieved from primary lines
[ ] Back filled to grade with finish surface installed

Site Completion:
[ ] Concrete
  [ ] Total inches over pipes _____
[ ] Asphalt
  [ ] Total inches over pipes _____

Line Leak Detection:
[ ] Mechanical
[ ] Electronic

Franklin Electric
FUELING SYSTEMS
www.franklinfueling.com
3760 Marsh Road • Madison, WI 53718, U.S.A.
Tel: +1 608 838 8786 • Fax: +1 608 838 6433
Tel: USA & Canada 1 800 225 9787 • Tel: México 001 800 738 7610

VEEDER-ROOT MONITORING SYSTEMS

WARRANTY REGISTRATION AND CHECKOUT FORM (WRACO) FOR TLS-450 CONSOLES

The warranty is not valid unless the registration form is completed and submitted electronically to Veeder-Root within 14 days of installation.

PLEASE NOTE: ALL FIELDS (EXCEPT EMAIL ADDRESSES) MUST BE COMPLETED BEFORE THE FORM CAN BE SUBMITTED ONLINE

WRACO # _____

START-UP TECHNICIAN

Certification #:

(Must be TLS-450 certified to perform a TLS-450 start-up.)

Contractor Name:

CONSOLE INFORMATION

Console Serial #:

Installation Date (mm/dd/yyyy):

INSTALLATION LOCATION

Business Category:

- ☐ Airport
- ☐ C-Store
- ☐ Federal Government
- ☐ Fleet Mgmt/Rental Car
- ☐ Hospital
- ☐ Municipality
- ☐ Phone Company
- ☐ Terminal
- ☐ Utility
- ☐ Other (specify): _____

Storage Tank Type:

- ☐ Underground Storage Tank
- ☐ Aboveground Storage Tank
- ☐ Both

Oil Brand:

Company Name:

Site #:

Manager:

Address:

City:

State/Province:

Postal Code:

Phone:

Email:

STATION OWNER

☐ Check here if same as installation location

Owner's Name:

Address:

City:

State/Province:

Postal Code:

Phone #:

Email:

INSTALLED COMPONENTS

- ☐ Electronic Line Leak
- ☐ Extended Storage L2 (3 years)
- ☐ TLS-RF (Wireless)
- ☐ Total Access Option
- ☐ Total Control Option

CUSTOMER INFORMATION

I have been trained in the proper operation of this equipment: YES _____ NO _____

Name (PRINTED):

Signature:

Date:

Title:

INSTALLATION AND INTRINSIC SAFETY CHECKLIST

- ☐ TLS Monitor is installed indoors in an accessible location within audible alarm hearing distance.
- ☐ TLS Monitor has 12 gauge wire from barrier to earth ground in the power panel.
- ☐ Power wires are installed in conduit.
- ☐ TLS Monitor has a chassis ground connection.
- ☐ Conduits enter TLS Monitor only through pre-formed knockouts.
- ☐ Monitor-to-probe wiring runs do not exceed 1000 feet.
- ☐ Sensor and probe wiring is 14 - 18 gauge shielded cable.
- ☐ Sensor and probe wiring is installed in dedicated conduit.
- ☐ Sealoffs are installed on probe and sensor conduits between building and tank.
- ☐ Probe and sensor wiring connections in tank area are installed in suitable weatherproof junction boxes.
- ☐ All outdoor wiring connections for probes and sensors are sealed with epoxy sealing kits.

START-UP TECHNICIAN SIGN-OFF

I hereby certify that this system has been installed in accordance with the procedures specified in the published Veeder-Root Site Prep and Installation manual. I have also read all of the warnings and I certify that there are no intrinsic safey violations due to improper installation of this system.

Tech Name (Printed):

Signature:

Date:

VEEDER-ROOT

Form No. 576047-144 Rev. A

To download this form online, please visit http://www.veeder.com/page/Support

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

ANNUAL LINE LEAK DETECTOR TEST FORM FOR AST AND UST SYSTEMS

OIL REMEDIATION AND COMPLIANCE BUREAU

AST: RSA 146-A, Env-Or 306.12; **UST: RSA** 146-C, Env-Or 406.07, 406.09

THE OWNER SHALL SUBMIT A COPY OF THE ANNUAL TEST REPORT TO NHDES ***WITHIN 30 DAYS*** AFTER TESTING.
Keep a completed copy of this for owner/operator records.

1A. Facility Information	
NHDES Site #	Facility ID #
Facility Name:	Town/City:
Physical Address of Facility:	

1B. Owner Information	
Name:	
Mailing Address:	
Daytime Phone:	Email:

2. As required by rules, all pressurized piping shall be equipped with an automatic line leak detector, which shall restrict or stop the flow of the stored substance upon detecting a leak at a rate of 3 gallons per hour at a pressure of 10 pounds per square inch line pressure. Automatic line leak detectors shall be tested annually to confirm that they are operating according to manufacturer's requirements.
3. Line leak detector is required to be tested in-place. Do not remove and test outside the system.

Test Date: _____

Testing Information and Results: **AST** ☐ **UST** ☐

Tank # (for split tanks use 1(a), 1(b))	**Tank #**		**Tank #**		**Tank #**		**Tank #**		**Tank #**	
Test Location:										
Product Stored: (gas, diesel, etc.)										
Capacity: (gallons)										
LLD Manufacturer:										
LLD Model Number:										
Tested Leak Rate: (gallons per hour)										
Results:	☐ *Pass*	☐ *Fail*	☐ *Pass*	☐ *Fail*	☐ *Pass*	☐ *Fail*	☐ *Pass*	☐ *Fail*	☐ *Pass*	☐ *Fail*

Complete the following only if any of the above LLDs have failed and replaced with NEW LLDs.

REPLACED LLD Manufacturer:										
LLD Model Number:										
Tested Leak Rate: (3 gallons per hour max)										
Results:	☐ *Pass*	☐ *Fail*	☐ *Pass*	☐ *Fail*	☐ *Pass*	☐ *Fail*	☐ *Pass*	☐ *Fail*	☐ *Pass*	☐ *Fail*

An automatic line leak detector failure shall be indicated by a leak rate of greater than 3 gallons per hour at a pressure of 10 pounds per square inch line pressure within one hour. **The failed line leak detector shall be repaired or replaced immediately. The affected piping system(s) shall be taken out of service until satisfactory repairs are made or the line leak detector is replaced.**

ORCB.WMD@des.nh.gov
Telephone: (603) 271-3899 Fax: (603) 271-2181 TDD Access: Relay NH (800) 735-2964
PO BOX 95, Concord, NH 03302-0095
www.des.nh.gov

Certification - I hereby certify that the equipment identified in this document was tested for proper operation in accordance with manufacturer's requirements.

Testing Company Name: _____ Testing Company Phone # _____

Testing Company Address: _____

Technician Name (Print): _____ Technician Signature: _____

Certification # _____ Expiration Date: _____

ORCB.WMD@des.nh.gov
Telephone: (603) 271-3899 Fax: (603) 271-2181 TDD Access: Relay NH (800) 735-2964
PO BOX 95, Concord, NH 03302-0095
www.des.nh.gov

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

ANNUAL LEAK MONITORING AND OVERFILL PROTECTION TEST FORM FOR AST SYSTEMS

OIL REMEDIATION AND COMPLIANCE BUREAU

RSA/Rule: Env-Or 306.12

THE OWNER SHALL SUBMIT A COPY OF THE ANNUAL TEST REPORT TO NHDES ***WITHIN 60 DAYS*** AFTER TESTING.
Keep a completed copy of this for owner/operator records.

1A. Facility Information	
NHDES Site #	Facility ID #
Facility Name:	Town/City:
Physical Address of Facility:	

1B. Owner Information	
Name:	
Mailing Address:	
Daytime Phone:	Email:

2. Leak Monitor and/or overfill protection equipment. (List all tested with manufacturer name and model numbers):
_____

Test Date: _____

RESULTS:

Q#	Complete the following checklist using: *Y = Yes, N = No, N/A = Not Applicable*	TANK #'s			
3.	Leak monitor console assignments are correctly programmed and labeled for all sensors.				
4.	**Tank** secondary containment sensor is positioned per manufacturer's requirements.				
	Piping secondary containment (piping, intermediate, and or dispenser sump) sensors are positioned per manufacturer requirements to monitor all containment.				
5.	All secondary containment is liquid tight and free of debris, water and regulated substance.				
6.	All sensors were visually inspected, manually tested, confirmed operational and reset.				
7.	The leak monitor console **audible** alarm is confirmed operational and reset.				
8.	The leak monitor console **visual** alarms are operational and reset.				
9.	The communication equipment (e.g. modem) is operational for leak monitoring systems and will relay alarms to a remote station.				
10.	Overfill alarm sensors and shutoff devices, as applicable, were manually activated and verified to be at the proper operational setting.				
11.	In summary, the leak monitor and/or overfill protection systems are confirmed to be in proper operation per manufacturer's requirements. All sensors are reset and alarms have been cleared.	☐ **Yes** ☐ **No**			

If responded NO to any of the above, describe on the *reverse side* of this form how/when these items will be corrected.

ORCB.WMD@des.nh.gov
Telephone (603) 271-3899 Fax (603) 271-2181 TDD Access: Relay NH (800) 735-2964
PO Box 95, Concord, NH 03302-0095
www.des.nh.gov

Certification **- I hereby certify that the equipment identified in this document was tested for proper operation in accordance with manufacturer's requirements.**

Testing Company Name: _____ Testing Company Phone # _____

Testing Company Address: _____

Technician Name (Print): _____ Technician Signature: _____

Certification # _____ Expiration Date: _____

Description of how and when any "No" items will be corrected:

ORCB.WMD@des.nh.gov
Telephone (603) 271-3899 Fax (603) 271-2181 TDD Access: Relay NH (800) 735-2964
PO Box 95, Concord, NH 03302-0095
www.des.nh.gov

Tank and Piping Tightness Testing Form for AST and UST Systems

Oil Remediation and Compliance Bureau

AST: RSA 146-A, Env-Or 306.09, Env-Or 307.11; UST – RSA 146-C, Env-Or 406.05, 406.07, 406.08

ATTENTION: This form is a document used to facilitate the submission of information required under Env-Or 400. Nothing in this form is required to be submitted to the Department unless such a requirement is expressly stated in the rules. If there is any inconsistency between this document and the adopted rules, only those requirements specified in the rules are applicable and enforceable. Use of this form to submit information required under the rules is OPTIONAL.

Facility Information	
NHDES Site #	Facility ID #
Facility Name:	
Physical Address of Facility:	Town/City:

Owner Information	
Name:	
Mailing Address:	
Daytime Phone: ( ) -	Email (Optional):

RESULTS SHALL BE SUBMITTED BY THE OWNER TO NHDES NO LATER THAN 30 DAYS AFTER THE DATE OF THE TEST.

Where required by rules, the tightness testing method shall have been evaluated by an independent testing laboratory and demonstrated to meet the leak rate detection criteria. The tightness test shall be capable of detecting a system leak rate of 0.10 gallons per hour with a probability of detection of 95% and a probability of false alarm of 5%. The test report and any other documents describing the type of test, contractor, date, materials, all technician testing data, and any other information pertinent to the tightness testing performed shall be kept by the owner for the life of the system.

A leak or failure shall be indicated by a test result of 0.10 gallons per hour or greater or an inconclusive test result. The person conducting the tightness test shall notify NHDES and facility owner and operator immediately of a system tightness test failure. An investigation shall be conducted within 7 days of the initial test failure to determine the cause of the failure which shall include a second confirming tightness test. The owner shall submit a written report to NHDES within 30 days of the failure that describes the work performed, the repairs made, and any other actions taken in response to the test failure.

System Information: **UST** ☐ **AST** ☐

TANK # For split tanks use #(a), #(b)				
COMPONENT BEING TESTED: Tank=T Piping=P Full System=FS				
SYSTEM INSTALLED DATE:				
SUBSTANCE STORED:				
TANK / PIPING MATERIAL: Fiberglass, steel, etc.				
SYSTEM CAPACITY: Gallons				
For sites with multiple tanks or conflicting registered tank ID numbers: *Please provide a drawing of the facility or other information so that the tanks or piping in question can be properly located or identified.*				

NHDES email: orcb.wmd@des.nh.gov
Telephone: (603) 271-3899 Fax: (603) 271-2181 TDD Access: Relay NH (800) 735-2964
P O BOX 95, Concord, NH 03302-0095
www.des.nh.gov

TEST INFORMATION:

DATE OF TEST: _____

METHOD USED: (Estabrook, EZY 3 Locator, etc.)				
TEMP MEASURING EQUIPMENT & METHOD:				
START TIME:				
START PRESSURE: (including units)				
END TIME:				
END PRESSURE: (including units)				
RE-LEVELING PROCEDURE USED:				
GROUNDWATER LEVEL and/or WATER SENSOR USED:				
LENGTH OF ANY WAITING PERIODS AFTER PRODUCT DELIVERY, TOPPING, or VAPOR SPACE DISTURBANCES:				
VAPOR POCKET MEASUREMENT and ELIMINATION PROCEDURE USED:				
PIPING, FITTINGS, or CONNECTIONS THAT WERE TIGHTENED or REPAIRED: (please describe)				
TEST RESULTS: PASS/FAIL	☐ Pass ☐ Fail	☐ Pass ☐ Fail	☐ Pass ☐ Fail	☐ Pass ☐ Fail

Verification – *I hereby certify the validity, method and accuracy of the test, which the test complies with the requirements of Env-Or 406 and/or Env-Or 306 as applicable, and that I am qualified to perform this test.*

Testing Equipment Manufacturer: _____

Last Calibration or Maintenance Date of Equipment: _____

Testing Company Name: _____ Testing Company Phone # _____

Testing Company Address: _____

Technician Name (Print): _____ Technician Signature: _____

Certification # _____ Expiration Date: _____

A COPY OF THE TECHNICIAN'S TESTING RECORDS SHOULD BE INCLUDED WHEN SUBMITTING THIS FORM.

NHDES email: orcb.wmd@des.nh.gov
Telephone: (603) 271-3899 Fax: (603) 271-2181 TDD Access: Relay NH (800) 735-2964
P O BOX 95, Concord, NH 03302-0095
www.des.nh.gov

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

REGISTRATION OF ABOVEGROUND PETROLEUM STORAGE TANK (AST) SYSTEMS

OIL REMEDIATION AND COMPLIANCE BUREAU

RSA 146-A, Rule: Env-Or 304

INSTRUCTIONS	STATE USE ONLY	
This form or an equivalent form must be completed for the initial registration of each regulated AST system, and each time there is a change in status or a substantial design change is made to an existing AST system. Please type or print all entries in ink. This form must be signed by the owner to be valid. If more space is needed for additional ASTs, photocopies of the following pages may be made and submitted with this form. The New Hampshire Code of Administrative Rules Env-Or 300, Aboveground Petroleum Storage Facilities, which became effective on February 7, 2014 (previously Env-Wm 1402), require that an owner of a regulated AST facility register all ASTs with NHDES. A regulated AST facility is one that has a single petroleum AST with a capacity of more than 660 gallons, or two or more petroleum ASTs having a combined storage capacity of more than 1,320 gallons. If a facility does not store more than 1,320 gallons of heating oil used only for on-premise use heating of structures, then that heating oil storage is not included in calculating the combined regulated storage capacity.	Date Received:	
	Site #:	
	Facility #	
	Notes:	

I. OWNERSHIP OF TANK(S)

Tank Owner Name

Mailing Address

City | State | ZIP Code

Phone Number (area code) | Email Address

II. LOCATION OF TANK(S)

Facility Name

Street Address

City | State | ZIP Code

County

III. LAND OWNER (if different than Tank Owner)

Land Owner Name

Mailing Address

City | State | ZIP Code

Phone Number (area code) | Email Address

IV. CONTACT PERSON (in charge of tank(s))

Contact Name and Title

Mailing Address

City | State | ZIP Code

Phone Number (area code) | Email Address

V. TYPE OF FACILITY

☐ Auto Salvage Yard	☐ Marina	☐ Residential
☐ Aviation	☐ Military	☐ School
☐ College/University	☐ Motor Fuel Dispensing	☐ Temporary Construction Site
☐ Farm	☐ Oil Change/Garage	☐ Utility
☐ Government	☐ Petroleum Bulk Distributor	☐ Other (explain)

VI. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in or with this registration form, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I understand that I am subject to the penalties specified in RSA 641:3 for making unsworn false statements.

Printed Name and Title of Owner or Owner's Authorized Representative | Signature | Date Signed

NHDES email: orcb.wmd@des.nh.gov
Telephone: (603) 271-3899 Fax: (603) 271-2181 TDD Access: Relay NH (800) 735-2964
P O BOX 95, Concord, NH 03302-0095
www.des.nh.gov

VII. DESCRIPTION OF ABOVEGROUND STORAGE TANKS

Tank Identification Number (drum storage areas may be marked as such, with details indicated in Section XIII)		Tank No.	Tank No.	Tank No.	Tank No.	Tank No.
1. Status of Tank (mark only one)	New Tank	☐	☐	☐	☐	☐
	Currently in Use	☐	☐	☐	☐	☐
	Out of Service	☐	☐	☐	☐	☐
	Substantial Design Change	☐	☐	☐	☐	☐
2. Date of Installation/Age of Tanks						
3. Tank Capacity (gallons)						
4. Substance Currently or Last Stored	Gasoline	☐	☐	☐	☐	☐
	Aviation Gas	☐	☐	☐	☐	☐
	Kerosene	☐	☐	☐	☐	☐
	Jet Fuel	☐	☐	☐	☐	☐
	Diesel	☐	☐	☐	☐	☐
	Bio-Diesel	☐	☐	☐	☐	☐
	#2 Heating Oil	☐	☐	☐	☐	☐
	#6 Heating Oil	☐	☐	☐	☐	☐
	Lubrication Oil	☐	☐	☐	☐	☐
	Used Oil	☐	☐	☐	☐	☐
	Asphalt	☐	☐	☐	☐	☐
	Transformer Oil	☐	☐	☐	☐	☐
	Other, Please Specify					
5. Tank Design (mark all that apply)						
	UL 80 Steel Indoors Tank	☐	☐	☐	☐	☐
	UL 142 Single Wall Steel Tank	☐	☐	☐	☐	☐
	UL 142 Double Wall Steel Tank	☐	☐	☐	☐	☐
	UL 2080 Fire Resistant Tank	☐	☐	☐	☐	☐
	UL 2085 Protected Tank (Fireguard)	☐	☐	☐	☐	☐
	UL 2245 Vaulted Tank	☐	☐	☐	☐	☐
	API 650 Field-Fabricated Steel Tank	☐	☐	☐	☐	☐
	Oil Filled Electrical Equipment	☐	☐	☐	☐	☐
	Unknown	☐	☐	☐	☐	☐
	Steel Secondary Containment	☐	☐	☐	☐	☐
	Concrete Secondary Containment	☐	☐	☐	☐	☐
	Earthen Secondary Containment	☐	☐	☐	☐	☐
	Tank shell contacts ground or concrete (not on cradles)	☐	☐	☐	☐	☐
	Other, Please Specify:					
6. Piping Material (mark all that apply)		Pri Sec	Pri Sec	Pri Sec	Pri Sec	Pri Sec
	Copper	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
	Carbon Steel/Black Iron	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
	Galvanized Steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
	Stainless Steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
	Cathodically Protected Steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
	Fiberglass Reinforced Plastic (FRP)	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
	Extruded Plastic Piping	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
	Unknown	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
	Other, Please Specify:					
7. Piping Type (mark all that apply)	Aboveground	☐	☐	☐	☐	☐
	Below Ground and/or Over Water	☐	☐	☐	☐	☐
	Suction	☐	☐	☐	☐	☐
	Pressure	☐	☐	☐	☐	☐

IX. TANKS PERMANENTLY OUT OF SERVICE/DISMANTLED

Tank Identification Number	Tank No.	Tank No.	Tank No.	Tank No.	Tank No.
1. Tank Permanently out of service					
A. Date the tank was last used					
B. Date the tank was emptied of product					
C. Current Status of Tank (Existing in-place, dismantled, etc.)					
2. Has Site Assessment Been Completed? Date of assessment:	Yes ☐ No ☐				
3. Evidence of a leak detected?	Yes ☐ No ☐				

X. CERTIFICATION OF COMPLIANCE

1. Spill Prevention, Control, and Countermeasure (SPCC) Plan written in accordance with 40 CFR Part 112.

A.	SPCC Plan in effect at the facility?	Yes ☐ No ☐	
B.	Is Plan stamped by a NH registered P.E.?	Yes ☐ No ☐	N/A ☐
C.	Date of SPCC Plan		
D.	Certification page submitted to NHDES?	Yes ☐ No ☐	

2. Is the facility in compliance with the New Hampshire State Fire Code and the National Fire Protection Association (NFPA):

A.	NFPA 30, Flammable and Combustible Liquids Code, 2012 Edition?	Yes ☐ No ☐	
B.	NFPA 30A, Code for Motor Fuel Dispensing Facilities and Repair Garages, 2012 Edition?	Yes ☐ No ☐	N/A ☐
C.	NFPA 31, Standard for the Installation of Oil-Burning Equipment, 2011 Edition?	Yes ☐ No ☐	N/A ☐

XI. OTHER REGISTRATIONS

Is there an Underground Storage Tank (UST) Facility at this location?	Yes ☐ No ☐
Please provide UST facility Identification Number if known:	

XII. COMMENTS (additional information continued from previous pages)

XIII. SITE AND FACILITY LAYOUT (May be accurate hand sketch) Please include drum storage areas

orcb.wmd@des.nh.gov
Telephone: (603) 271-3899 Fax: (603) 271-2181 TDD Access: Relay NH (800) 735-2964
PO BOX 95, Concord, NH 03302-0095

SCHEDULE OF ITEMS

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
HUDSON, NEW HAMPSHIRE

BID FORM

Notes:

1. All prices must be written in ink. Unit prices must be written in words as well as figures for the entire proposal. In case of discrepancy, the amount in words shall govern.
2. All prices given shall include items delineated in the Measurement and Payment Section, and in accordance with the Drawings, Supplementary Conditions, 2016 NHDOT Standard Specifications for Road and Bridge Construction, and Contract Documents.

Item No.	Description	Quantity	Unit	Unit Price	Total Price
201.1	Clearing and Grubbing (F) _____dollars and _____ cents.	0.04	A	$_____	$_____
203.1	Common Excavation _____dollars and _____ cents.	1,040	CY	$_____	$_____
214	Fine Grading _____dollars and _____ cents.	1	U	$_____	$_____
304.2	Gravel (F) _____dollars and _____ cents.	380	CY	$_____	$_____
304.3	Crushed Gravel (F) _____dollars and _____ cents.	285	CY	$_____	$_____
520.A	Concrete Class A _____dollars and _____ cents.	8	CY	$_____	$_____
585.3	Stone Fill, Class C _____dollars and _____ cents.	1	CY	$_____	$_____
603.332	12" Polyethylene End Section _____dollars and _____ cents.	1	EA	$_____	$_____

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
HUDSON, NEW HAMPSHIRE

BID FORM

Notes:

1. All prices must be written in ink. Unit prices must be written in words as well as figures for the entire proposal. In case of discrepancy, the amount in words shall govern.
2. All prices given shall include items delineated in the Measurement and Payment Section, and in accordance with the Drawings, Supplementary Conditions, 2016 NHDOT Standard Specifications for Road and Bridge Construction, and Contract Documents.

Item No.	Description	Quantity	Unit	Unit Price	Total Price
603.8106	6" Plastic Pipe _____dollars and _____ cents.	135	LF	$_____	$_____
603.82212	12" Polyethylene Pipe (Smooth Interior) _____dollars and _____ cents.	10	LF	$_____	$_____
607.A206	Chain Link Fence, 6' High _____dollars and _____ cents.	155	LF	$_____	$_____
609.216	Straight Granite Slope Curb - 6 inch high _____dollars and _____ cents.	225	LF	$_____	$_____
628.2	Sawed Bituminous Pavement _____dollars and _____ cents.	270	LF	$_____	$_____
641	Loam _____dollars and _____ cents.	65	CY	$_____	$_____
645.531	Silt Fence/Silt Sacks _____dollars and _____ cents.	235	LF	$_____	$_____
646.31	Hydroseed with Mulch and Tackfiers _____dollars and _____ cents.	7,080	SF	$_____	$_____

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
HUDSON, NEW HAMPSHIRE

BID FORM

Notes:

1. All prices must be written in ink. Unit prices must be written in words as well as figures for the entire proposal. In case of discrepancy, the amount in words shall govern.
2. All prices given shall include items delineated in the Measurement and Payment Section, and in accordance with the Drawings, Supplementary Conditions, 2016 NHDOT Standard Specifications for Road and Bridge Construction, and Contract Documents.

Item No.	Description	Quantity	Unit	Unit Price	Total Price
692	Mobilization _____dollars and _____ cents.	1	U	$_____	$_____
670.111	AST System Installation _____dollars and _____ cents.	1	U	$_____	$_____
670.121	Fueling Canopy Installation _____dollars and _____ cents.	1	U	$_____	$_____
	TOTAL BID: _____ dollars and _____ cents.				$

FORM OF AGREEMENT
BETWEEN OWNER AND CONTRACTOR
ON THE BASIS OF A LUMP SUM PRICE

THIS AGREEMENT is dated as of the __ day of ____ in the year 2023 by and between the Town of Hudson, 12 School Street, Hudson, NH (hereinafter called OWNER) and _____ _____(hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 - WORK

CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

CONSTRUCTION SERVICES FOR
PUBLIC WORKS FUEL PUMP STATION
HUDSON, NEW HAMPSHIRE

ARTICLE 2 - ENGINEER

The Project is being managed by the Town Engineer with assistance from _____ _____, who is to act as OWNER's representative, assume all duties and responsibilities and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

ARTICLE 3 - CONTRACT PRICE

OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount equal to the sum of the Lump Sum Cost as shown on the Proposal Form (attached).

3.1 Liquidated Damages: OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that if the Work is not completed within the times specified, plus any extensions thereof allowed in accordance with the General Conditions, the OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) the OWNER shall deduct from payments due the CONTRACTOR **Two Hundred and Fifty ($250.00)** for each calendar day that expires past the date for each calendar day that expires after the Substantial Completion date specified, until said portions of the work have been completed. If payments due the CONTRACTOR are less than the amount of such liquidated damages, said damages shall be deducted from any other monies due or to become due the CONTRACTOR, and then the CONTRACTOR or his Surety shall pay the balance to the OWNER.

3.2 In addition to the above, if the Contract is not completed within the time specified and no extension of time is authorized by the OWNER, the CONTRACTOR shall indemnify the OWNER for costs to the OWNER of additional engineering work required during any such extension period.

ARTICLE 4 - PAYMENT PROCEDURES

CONTRACTOR shall submit Applications for Payment in accordance with the General Conditions and Supplemental Conditions. Applications for Payment will be processed by ENGINEER as follows:

- Payment will be made within thirty (30) days of submittal

The Town waives any retainage requirement for this project. All payments to the Contractor will be based on the payment schedule noted above.

ARTICLE 5 - INTEREST

All monies not paid when due as provided in the General Conditions shall bear interest at the maximum rate allowed by law at the place of the Project.

ARTICLE 6 - CONTRACTOR'S REPRESENTATIONS

In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

7.1 CONTRACTOR has examined and carefully studied the Contract Documents including the Addenda and the other related data identified in the Bidding Documents including "technical data".

7.2 CONTRACTOR has visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance or furnishing of the Work.

7.3 CONTRACTOR is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.

7.4 CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all such additional supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto. CONTRACTOR does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the performance and furnishing of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents.

7.5 CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.

7.6 CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that CONTRACTOR has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 7 - CONTRACT DOCUMENTS

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR concerning the Work consist of the following:

7.1 Request for Proposal RFP 23.

7.2 Town of Hudson required contract forms:

a.) Proposal Document

b.) Specifications Exception Form

d.) Alternate Form W-9

d.) Indemnification Agreement

7.3 Bid Bond.

7.4 General Conditions.

7.5 Schedule of Items.

7.6 Notice of Award.

7.7 This Agreement.

7.8 Performance Bond.

7.9 CONTRACTOR's Proposal.

7.10 Documentation submitted by CONTRACTOR prior to Notice of Award (pages __ to ____, inclusive).

7.11 The following which may be delivered or issued after the Effective Date of the Agreement and are not attached hereto: All Written Amendments and other documents amending, modifying or supplementing the Contract Documents pursuant to the General Conditions.

ARTICLE 8 - MISCELLANEOUS

8.1 Terms used in this Agreement which are defined in the General Conditions will have the meanings indicated in the General Conditions.

8.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without written consent of the party sought to be bound; and, specifically but without limitation, monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

8.3 OWNER and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

8.4 Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in triplicate. One counterpart each has been delivered to OWNER, CONTRACTOR and ENGINEER. All portions of the Contract Documents have been signed, initialed or identified by OWNER and CONTRACTOR or identified by ENGINEER on their behalf.

This Agreement will be effective on _____, 20___ (which is the Effective Date of the Agreement).

OWNER Town of Hudson

By: _____

Print Name _____

Title: _____

STATE OF NEW HAMPSHIRE
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 2023, by _____, duly authorized _____ of _____, a New Hampshire corporation, on behalf of same.

_____
Justice of the Peace/Notary Public

Address for giving notices:

Town of Hudson, 12 School Street,

Hudson, New Hampshire

(If OWNER is a public body, attach evidence of authority to sign and resolution of other documents authorizing execution of Agreement.

CONTRACTOR _____

By: _____

Print Name _____

Title: _____

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____ 2023, by _____, duly authorized _____ of _____, a _____ corporation, on behalf of same.

_____
Justice of the Peace/Notary Public

Address for giving notices:

_____

_____

NH License No.: _____

Agent for service of process: _____

_____

(If CONTRACTOR is a corporation, attach evidence of authority to sign).

BID BOND

Any singular reference to Bidder, Surety, Owner, or other party shall be considered plural where applicable.

BIDDER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

Town of Hudson, New Hampshire
12 School Street
Hudson, NH 03051

BID
Bid Due Date:
Project (Brief Description Including Location):

Construction Services for
PUBLIC WORKS FUEL PUMP STATION

BOND
Bond Number:
Date (Not later than Bid due date):
Penal Sum: _____ _____
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER

_____ (Seal)
Bidder's Name and Corporate Seal

By: _____
Signature and Title

Attest: _____
Signature and Title

SURETY

_____ (Seal)
Surety's Name and Corporate Seal

By: _____
Signature and Title
(Attach Power of Attorney)

Attest: _____
Signature and Title

Note: Above addresses are to be used for giving required notice.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder any difference between the total amount of Bidder's Bid and the total amount of the Bid of the next lowest, responsible Bidder who submitted a responsive Bid as determined by Owner for the work required by the Contract Documents, provided that:

1.1. If there is no such next Bidder, and Owner does not abandon the Project, then Bidder and Surety shall pay to Owner the penal sum set forth on the face of this Bond, and

1.2. In no event shall Bidder's and Surety's obligation hereunder exceed the penal sum set forth on the face of this Bond.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

3.2. All Bids are rejected by Owner, or

3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

_____
(Name of Contractor)

_____
(Address of Contractor)

a _____ , hereinafter called Principal,
(Corporation, Partnership or Individual)

and _____
(Name of Surety)

_____
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

Town of Hudson, NH
(Name of Owner)

12 School Street, Hudson, NH 03051
(Address of Owner)

hereinafter called **OWNER**, in the total aggregate penal sum of _____

_____ Dollars, $ (_____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators' successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the **OWNER**, dated the _____ day of _____ 20 ___ , a copy of which is hereto attached and made a part hereof for the construction of:

CONSTRUCTION SERVICES FOR

PUBLIC WORKS FUEL PUMP STATION

HUDSON, NH

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

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

PROVIDED, FURTHER, that it is expressly agreed that this BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than 20 percent, so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the Contract as so amended. The term "Amendment", wherever used in this BOND and whether referring to this BOND, the contract or the loan Documents shall include any alteration, addition, extension or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ (number) counterparts, each one of which shall be deemed an original, this _____ day of _____ , 20 ____ .

ATTEST:

_____
Principal

By: _____
(Principal) Secretary

(SEAL) **BY** _____

_____
(Address)

By: _____
Witness as to Principal

_____
(Address)

_____

_____
(Surety)

ATTEST: **BY** _____
Attorney - in - Fact

By _____
Witness as to Surety

_____
(Address)

_____

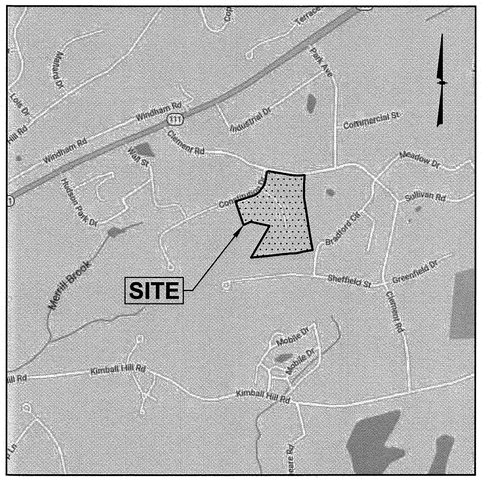
_____
(Address)

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

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of New Hampshire

PLANS

SITE IMPROVEMENT PLANS
VEHICLE FUELING FACILITY
for
HUDSON PUBLIC WORKS DEPARTMENT
ASSESSORS MAP 17 LOT 30
2 CONSTITUTION DRIVE
HUDSON, NH 03051
Prepared for:
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051



LOCATION MAP
(NOT TO SCALE)

INDEX TO DRAWINGS

NHDES FACILITY ID# 991030A

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE
HUDSON, NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE - FRANK C. MONTEIRO No. 7152 LICENSED PROFESSIONAL ENGINEER
6/23/23

REVISIONS		
2	ISSUED FOR BID	6/23/23
1	SHEETS C-101, M-100 THROUGH M-103	6/14/23
NO.	REVISION	DATE

MAY 1, 2023

DRAWN/DESIGN BY	CHECKED BY
MDA/FR	HS

TITLE SHEET

SCALE: NOT TO SCALE

PROJECT NO. NEX-2300001

T-100

F:\Projects\NEX-2300001 - Hudson, NH - DPW\CAD Files\2300001_CVR.dwg COVER 6/22/23 4:57pm sbonfanti

NAD 83

N

MAP 17 LOT 30
18.6 Ac.±
(PER TAX CARD)

APPROXIMATE PROPERTY LINE

1-STORY MASONRY BUILDING
17,395 Sq.Ft.
FF=289.82
#2 CONSTITUTION DRIVE

BUILDING HEIGHT=22.6'

CONCRETE SIDEWALK

PAINTED PARKING SPACES (TYP.)

11 SPACES

12 SPACES

4 SPACES

BITUMINOUS CONCRETE

BOLLARD (TYP.)

FIRE DEPARTMENT CONNECTION

GENERATOR

FLAGPOLE

PIV

RIM=288.52
INV.IN=281.72
INV.IN=282.52
INV.OUT=281.48

RIM=287.23
INV.IN=278.83
INV.OUT=278.74

"TOWN OF HUDSON, NH PUBLIC WORKS DEPT." SIGN

"TOWN VEHICLES ONLY" SIGN

TREELINE (TYP.)

STONEWALL (TYP.)

12"HDPE INV.=280.38

APPROXIMATE LOCATION OF WATER SERVICE PER RECORD PLANS AND VISIBLE SURFACE FEATURES

APPROXIMATE LOCATION OF WATER SERVICE PER RECORD PLANS

RIM=285.19
INV.OUT=276.89

OVERHEAD WIRES (TYP.)

"LIMIT TWO 5 GALLON PAILS" SIGN

JERSEY BARRIER

RIM=283.42
INV.IN=277.32
INV.IN=278.34
INV.IN=276.82
INV.OUT=276.66
SUMP=274.57

RIM=283.45
INV.IN=275.65
INV.OUT=275.52

RIM=283.00
INV.OUT=278.64
SUMP=275.24

RIM=283.71
INV.IN=278.67
INV.OUT=278.32

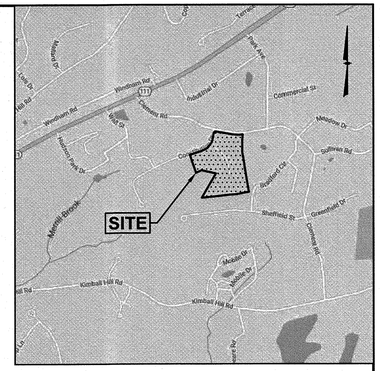
RIM=282.83
INV.IN=278.24
INV.OUT=277.72
INV.OUT=277.58
SUMP=274.25

RIM=284.65
DROP=278.35
INV.IN=275.27
INV.IN=275.23
INV.OUT=275.20

TO CONSTITUTION DRIVE

NOTES:

1) ZONE: INDUSTRIAL DISTRICT (I)
   MIN. LOT SIZE: 30,000 Sq.Ft.
   MIN. LOT FRONTAGE: 150 Ft.
   SETBACKS:
   FRONT 50 Ft.
   SIDE 15 Ft.
   REAR 15 Ft.
   REFER TO THE TOWN OF HUDSON ZONING ORDINANCE FOR VERIFICATION, ADDITIONAL RESTRICTIONS AND PERMITTED USES. THE ZONING INFORMATION SHOWN HEREON IS BASED ON A REVIEW OF THE HUDSON ZONING ORDINANCE.
2) THIS PLAN IS THE RESULT OF AN ON-THE-GROUND FIELD SURVEY PERFORMED BY THIS OFFICE IN JANUARY, 2023.
3) BEARINGS SHOWN HEREON ARE BASED ON NAD83 PER GPS OBSERVATIONS PERFORMED BY THIS OFFICE ON JANUARY 25, 2023.
4) ELEVATIONS SHOWN HEREON ARE BASED ON NAVD88 PER GPS OBSERVATIONS PERFORMED BY THIS OFFICE ON JANUARY 25, 2023.
5) LOCATION OF UNDERGROUND UTILITIES IS APPROXIMATE ONLY. ADDITIONAL UNDERGROUND UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED. INVERTS ARE LISTED IN A CLOCKWISE DIRECTION ENDING WITH THE INVERT OUT (UNLESS OTHERWISE NOTED).
6) THE SURVEY TRACT IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA (100 YEAR FLOOD) PER FLOOD INSURANCE RATE MAP NUMBER 33011C0519D, WITH AN EFFECTIVE DATE OF SEPTEMBER 25, 2009.



LOCATION MAP
(NOT TO SCALE)

PLAN REFERENCES:

HILLSBOROUGH COUNTY REGISTRY OF DEEDS

1) PLAN 22383

0 20 50 100
SCALE: 1" = 20'

OWNER OF RECORD:

MAP 17 LOT 30
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051
BOOK 6018 PAGE 1610

NHDES FACILITY ID# 991030A

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE
HUDSON, NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE - FRANK C MONTEIRO No. 7152 LICENSED PROFESSIONAL ENGINEER
6/23/23

REVISIONS		
1	ISSUED FOR BID	6/23/23
NO.	REVISION	DATE

MAY 1, 2023

DRAWN/DESIGN BY	CHECKED BY
JMS	DRJ

PARTIAL EXISTING CONDITIONS PLAN

SCALE: 1"=20'

PROJECT NO. NEX-2300001

V-100

F:\Projects\NEX-2300001 - Hudson, NH - DPW\CAD Files\2300001_SV.dwg ECP 6/22/23, 5:11pm stonfant

LEGEND

Symbol	Description
SGC	SLOPED GRANITE CURB
VGC	VERTICAL GRANITE CURB
SCC	SLOPED CONCRETE CURB
VCC	VERTICAL CONCRETE CURB
CCB	CAPE COD BERM
DSLY	DOUBLE SOLID LINE YELLOW
DDLY	DOUBLE DASHED LINE YELLOW
SDLY	SINGLE DASHED LINE YELLOW
SSLY	SINGLE SOLID LINE YELLOW
SSLW	SINGLE SOLID LINE WHITE
SDLW	SINGLE DASHED LINE WHITE
G	GAS LINE
T	UNDERGROUND TELEPHONE
W	WATER LINE
E	UNDERGROUND ELECTRIC
	WOOD GUARDRAIL
	METAL GUARDRAIL
	CHAIN LINK FENCE
	STOCKADE FENCE
	POST & RAIL FENCE
X	WIRE FENCE
90	CONTOUR ELEVATION
	TREE
	UTILITY POLE
	GUY WIRE
	OVERHEAD WIRE
	TREELINE
PB	PULL BOX
	SIGN
×98.69	SPOT ELEVATION
(D)	DRAIN MANHOLE
	CATCH BASIN
(RD)	ROOF DRAIN
(CO)	CLEANOUT
(V)	VENT
(S)	SEWER MANHOLE
(T)	TELEPHONE MANHOLE
(E)	ELECTRIC MANHOLE
(W)	WATER MANHOLE
(MH)	MANHOLE
GV	GAS VALVE
GSO	GAS SHUT OFF
WV	WATER VALVE
WSO	WATER SHUT OFF
HYD	FIRE HYDRANT
	BOLLARD
GM	GAS METER
EM	ELECTRIC METER
	MONITORING WELL
	LIGHT POLE
	BORING
	WETLAND LINE
	WATER FEATURE
U/C&T	UNDERGROUND COMM
	DITCH LINE
	EASEMENT LINE
	PROPERTY LINE
	ABUTTER PROPERTY LINE
	BUILDING SETBACK
	SOIL TYPE LINE
	ZONE LINE
	FLOOD ZONE LINE
	PROP. SLOPED GRANITE CURB (SGC)
	PROP. VERTICAL CONCRETE CURB (VCC)
C.O.	PROP. CLEANOUT
CB-1	PROP. CATCH BASIN
DMH-1	PROP. DRAIN MANHOLE
MEG	MEET EXISTING GRADE
331.25	PROP. SPOT ELEVATION
300	PROP. CONTOUR ELEVATION
TW=	TOP OF WALL ELEV.
BW=	BOTTOM OF WALL ELEV.
G.B.	GRADE BREAK
TP	TEST PIT
N.I.C.	NOT IN CONTRACT

NOTE: NOT ALL SYMBOLS WILL APPEAR ON EVERY SHEET OR ARE NECESSARILY APPLICABLE TO EVERY SITE.

EROSION CONTROL NOTES:

1) THE EROSION CONTROL PROCEDURES SHALL CONFORM TO THE NH STORMWATER MANUAL, VOLUME 3, EROSION & SEDIMENT CONTROLS DURING CONSTRUCTION, DECEMBER 2008, OR LATEST EDITION.
2) DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED: THE SMALLEST PRACTICAL AREA OF LAND SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE EXPOSURE SHOULD BE KEPT TO THE SHORTEST PRACTICAL PERIOD OF TIME AS APPROVED BY THE ENGINEER. LAND SHOULD NOT BE LEFT EXPOSED DURING THE WINTER MONTHS.
3) LIMIT OF MAXIMUM AREA OF EXPOSED SOIL AT ANY ONE TIME TO LESS THAN 5 ACRES. THE EXPOSED AREA THAT IS BEING ACTIVELY WORKED DURING WINTER IS TO BE LESS THAN 3 ACRES DURING THE WINTER SEASON.
4) ALL PERMANENT STORM WATER STRUCTURES SHALL BE STABILIZED PRIOR TO DIRECTING FLOW INTO THEM. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURED:
   A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
   B) A MINIMUM OF 85 PERCENT VEGETATED GROWTH HAS BEEN ESTABLISHED.
   C) A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED.
   D) OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
5) SEDIMENT CONTROL FENCE SHALL BE INSTALLED AND MAINTAINED DURING AND AFTER DEVELOPMENT TO REMOVE SEDIMENT FROM RUNOFF WATER AND FROM LAND UNDERGOING DEVELOPMENT. WHERE POSSIBLE, NATURAL DRAINAGE WAYS SHOULD BE UTILIZED AND LEFT OPEN TO REMOVE EXCESS SURFACE WATER. SEDIMENT CONTROL FENCE TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE A HEALTHY STAND OF GRASS.
6) ALL DISTURBED AREAS AND SIDE SLOPES WHICH ARE FINISHED GRADED, WITH NO FURTHER CONSTRUCTION TO TAKE PLACE, SHALL BE LOAMED AND SEEDED WITHIN 72 HOURS AFTER FINAL GRADING. A MINIMUM OF 4" OF LOAM SHALL BE INSTALLED WITH NOT LESS THAN ONE POUND OF SEED PER 50 SQUARE YARDS OF AREA. THE SEED MIX SHALL BE AS DESIGNATED BELOW.
7) ANY DISTURBED AREAS WHICH ARE TO BE LEFT TEMPORARILY, AND WHICH WILL BE REGRADED LATER DURING CONSTRUCTION SHALL BE MACHINE HAY MULCHED AND SEEDED WITH RYE GRASS TO PREVENT EROSION. THE MAXIMUM LENGTH OF TIME FOR THE EXPOSURE OF DISTURBED SOILS SHALL BE 45 DAYS. HAY OR STRAW MULCH SHALL BE APPLIED TO ALL FRESHLY SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE. BALES SHALL BE UNSPOILED, AIR DRIED, AND FREE FROM WEED, SEEDS AND ANY COARSE MATERIAL.
8) DURING GRADING OPERATIONS INSTALL SEDIMENT CONTROL FENCE ALONG TOE OF SLOPE OF FILL AREAS WHERE SHOWN. BARRIERS ARE TO BE MAINTAINED UNTIL DISTURBED AREAS ARE PAVED OR GRASSED.
9) THE FILL MATERIAL SHALL BE OF APPROVED SOIL TYPE FREE FROM STUMPS, ROOTS, WOOD, ETC. TO BE PLACED IN 12" LIFTS OR AS SPECIFIED. BULLDOZERS, TRUCKS, TRACTORS, OR ROLLERS MAY BE USED FOR COMPACTION BY ROUTING THE EQUIPMENT TO ALL AREAS OR EACH LAYER.
10) AVOID THE USE OF FUTURE OPEN SPACES (LOAM & SEED) WHEREVER POSSIBLE DURING CONSTRUCTION. CONSTRUCTION TRAFFIC SHALL USE THE ROADBEDS OF FUTURE ROADS.

TEMPORARY EROSION CONTROL MEASURES:

1) THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME.
2) SEDIMENT CONTROL FENCE SHALL BE INSTALLED AS REQUIRED. FENCE IS TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE A HEALTHY STAND OF GRASS.
3) BALED HAY AND MULCH SHALL BE MOWINGS OF ACCEPTABLE HERBACEOUS GROWTH, FREE FROM NOXIOUS WEEDS OR WOODY STEMS, AND SHALL BE DRY. NO SALT HAY SHALL BE USED.
4) FILL MATERIAL SHALL BE FREE FROM STUMPS, WOOD, ROOTS, ETC.
5) STOCKPILED MATERIALS SHALL BE PLACED ONLY IN AREAS SHOWN ON THE PLANS. STOCKPILES SHALL BE PROTECTED BY SEDIMENT CONTROL FENCING AND SEEDED TO PREVENT EROSION. THESE MEASURES SHALL REMAIN UNTIL ALL MATERIAL HAS BEEN PLACED OR DISPOSED OFF SITE.
6) ALL DISTURBED AREAS SHALL BE LOAMED AND SEEDED. A MINIMUM OF 4 INCHES OF LOAM SHALL BE INSTALLED WITH NOT LESS THAN ONE POUND OF SEED PER 50 SQUARE YARDS OF AREA.
7) SEED MIX SHALL BE EQUAL PARTS OF RED FESCUE (CREEPING), KENTUCKY BLUE GRASS, REDTOP, PERENNIAL RYEGRASS.
8) AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED.
9) PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
10) ALL CATCH BASIN INLETS WILL BE PROTECTED WITH INLET PROTECTION AND/OR SILT SACKS.
11) ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED AND CLEANED AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.
12) ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA OR DEWATERING FILTER BAG.
13) TO PREVENT TRACKING OF SEDIMENT ONTO THE EXISTING ROADS, ALL CONSTRUCTION TRAFFIC CAN ONLY EXIT THE SITE OVER THE CONSTRUCTION ENTRANCES SHOWN ON THIS PLAN.

CONSTRUCTION SEQUENCE:

1) SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY ON-SITE CONSTRUCTION AS SHOWN. ADDITIONAL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED AS SOON AS PRACTICAL.
2) REMOVE AND STOCKPILE SOIL AS REQUIRED. STOCKPILE SHALL BE SURROUNDED WITH SEDIMENT CONTROL FENCING TO PREVENT EROSION.
3) CONSTRUCT DRIVEWAYS AND PERFORM SITE GRADING.
4) INSTALL UNDERGROUND UTILITIES & DRAINAGE.
5) BEGIN TEMPORARY AND PERMANENT SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEEDED OR MULCHED IMMEDIATELY AFTER THEIR CONSTRUCTION.
6) DAILY, OR AS REQUIRED, CONSTRUCT, INSPECT, AND IF NECESSARY, RECONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SEDIMENT CONTROL FENCES, HAYBALES AND SEDIMENT TRAPS INCLUDING MULCHING AND SEEDING.
7) BEGIN EXCAVATION FOR AND CONSTRUCTION OF BUILDINGS.
8) FINISH PAVING ALL DRIVES AND PARKING AREAS. CLEAN ALL DRAINAGE STRUCTURES.
9) COMPLETE PERMANENT SEEDING AND LANDSCAPING.
10) AFTER GRASS HAS BEEN FULLY GERMINATED IN ALL SEEDED AREAS, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.

WINTER STABILIZATION NOTES:

MAINTENANCE REQUIREMENTS:
MAINTENANCE MEASURES SHOULD CONTINUE AS NEEDED THROUGHOUT CONSTRUCTION, INCLUDING THE OVER-WINTER PERIOD. AFTER EACH RAINFALL, SNOWSTORM, OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHOULD CONDUCT AN INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUING FUNCTION. FOR ANY AREA STABILIZED BY TEMPORARY OR PERMANENT SEEDING PRIOR TO THE ONSET OF THE WINTER SEASON, THE CONTRACTOR SHOULD CONDUCT AN INSPECTION IN THE SPRING TO ASCERTAIN THE CONDITION OF VEGETATION COVER, AND REPAIR ANY DAMAGE AREAS OR BARE SPOTS AND RESEED AS REQUIRED TO ACHIEVE AN ESTABLISHED VEGETATIVE COVER (AT LEAST 85% OF AREA VEGETATED WITH HEALTHY, VIGOROUS GROWTH).
SPECIFICATIONS:
TO ADEQUATELY PROTECT WATER QUALITY DURING COLD WEATHER AND DURING SPRING RUNOFF, THE FOLLOWING STABILIZATION TECHNIQUES SHOULD BE EMPLOYED DURING THE PERIOD FROM OCTOBER 15TH THROUGH MAY 15TH.

1) THE AREA OF EXPOSED, UNSTABILIZED SOIL SHOULD BE LIMITED TO ONE ACRE AND SHOULD BE PROTECTED AGAINST EROSION BY THE METHODS DESCRIBED IN THIS SECTION PRIOR TO ANY THAW OR SPRING MELT EVENT. SUBJECT TO APPLICABLE REGULATIONS, THE ALLOWABLE AREA OF EXPOSED SOIL MAY BE INCREASED IF ACTIVITIES ARE CONDUCTED ACCORDING TO A WINTER CONSTRUCTION PLAN, DEVELOPED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF NEW HAMPSHIRE OR A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL AS CERTIFIED BY THE CSPESC COUNCIL OF ENVIROCERT INTERNATIONAL, INC.
2) STABILIZATION AS FOLLOWS SHOULD BE COMPLETED WITHIN A DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 5 DAYS:
   A. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF LESS THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHOULD BE SEEDED AND COVERED WITH 3 TO 4 TONS OF HAY OR STRAW MULCH PER ACRE SECURED WITH ANCHORED NETTING, OR 2 INCHES OF EROSION CONTROL MIX (SEE DESCRIPTION OF EROSION CONTROL MIX BERMS FOR MATERIAL SPECIFICATION).
   B. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF GREATER OOTHAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHOULD BE SEEDED AND COVERED WITH A PROPERLY INSTALLED AND ANCHORED EROSION CONTROL BLANKET OR WITH A MINIMUM 4 INCH THICKNESS OF EROSION CONTROL MIX, UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER. NOTE THAT COMPOST BLANKETS SHOULD NOT EXCEED 2 INCHES IN THICKNESS OR THEY MAY OVERHEAT.
3) ALL STONE-COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY OCTOBER 15.
4) INSTALLATION OF ANCHORED HAY MULCH OR EROSION CONTROL MIX SHOULD NOT OCCUR OVER SNOW OF GREATER THAN ONE INCH IN DEPTH.
5) ALL MULCH APPLIED DURING WINTER SHOULD BE ANCHORED (E.G., BY NETTING, TRACKING, WOOD CELLULOSE FIBER).
6) STOCKPILES OF SOIL MATERIALS SHOULD BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE OR WITH A FOUR-INCH LAYER OF EROSION CONTROL MIX. MULCHING SHOULD BE DONE WITHIN 24 HOURS OF STOCKING, AND RE-ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL. NO SOIL STOCKPILE SHOULD BE PLACED (EVEN COVERED WITH MULCH) WITHIN 100 FEET FROM ANY WETLAND OR OTHER WATER RESOURCE AREA.
7) FROZEN MATERIALS, (E.G., FROST LAYER THAT IS REMOVED DURING WINTER CONSTRUCTION), SHOULD BE STOCKPILED SEPARATELY AND IN A LOCATION THAT IS AWAY FROM ANY AREA NEEDING TO BE PROTECTED. STOCKPILES OF FROZEN MATERIAL CAN MELT IN THE SPRING AND BECOME UNWORKABLE AND DIFFICULT TO TRANSPORT DUE TO THE HIGH MOISTURE CONTENT IN THE SOIL.
8) INSTALLATION OF EROSION CONTROL BLANKETS SHOULD NOT OCCUR OVER SNOW OF GREATER THAN ONE INCH IN DEPTH OR ON FROZEN GROUND.
9) ALL GRASS-LINED DITCHES AND CHANNELS SHOULD BE CONSTRUCTED AND STABILIZED BY SEPTEMBER 1. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHOULD BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS, AS DETERMINED BY A QUALIFIED PROFESSIONAL ENGINEER OR A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL AS CERTIFIED BY THE CSPESC COUNCIL OF ENVIROCERT INTERNATIONAL, INC. IF A STONE LINING IS NECESSARY, THE CONTRACTOR MAY NEED TO RE-GRADE THE DITCH AS REQUIRED TO PROVIDE ADEQUATE CROSS-SECTION AFTER ALLOWING FOR PLACEMENT OF THE STONE.
10) ALL STONE-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY OCTOBER 15.
11) AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.
12) SEDIMENT BARRIERS THAT ARE INSTALLED DURING FROZEN CONDITIONS SHOULD CONSIST OF EROSION CONTROL MIX BERMS, OR CONTINUOUS CONTAINED BERMS. SEDIMENT CONTROL FENCES AND HAY BALES SHOULD NOT BE INSTALLED WHEN FROZEN CONDITIONS PREVENT PROPER EMBEDMENT OF THESE BARRIERS.

SITE PLAN NOTES:

1) THIS PROJECT GENERALLY CONSISTS OF PROVIDING A NEW VEHICLE FUELING FACILITY AT THE HUDSON PUBLIC WORKS DEPARTMENT FACILITY AT 2 CONSTITUTION DRIVE IN HUDSON, NH. THE EXISTING FUELING FACILITY WILL BE DECOMMISSIONED IN ACCORDANCE WITH THE NH DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES) REGULATIONS.
2) THIS WORK WILL CONSIST OF FURNISHING AND INSTALLING ONE (1) 14,000 GALLON ABOVE GROUND STORAGE TANK (AST) WITH TWO TANK COMPARTMENTS. THE COMPARTMENTS WILL CONSIST OF STORING 8,000 GALLONS OF DIESEL FUEL AND 6,000 GALLONS OF GASOLINE. WORK SHALL INCLUDE ALL TANK WORK, PIPING WORK, ELECTRICAL WORK, EARTHWORK, CONCRETE WORK, ASPHALT, FINE GRADING, CRUSHED GRAVEL, AND DRAINAGE WORK PER THE CONSTRUCTION DRAWINGS.
3) EXISTING TOPOGRAPHY AND PLANIMETRIC INFORMATION AS SHOWN IS THE RESULT OF AN ACTUAL FIELD SURVEY BY THIS OFFICE. BOUNDARY INFORMATION SHOWN IS APPROXIMATE BASED ON PUBLIC GIS INFORMATION.
4) TAX MAP 17 LOT 30
5) ZONING DISTRICT: INDUSTRIAL (I)
6) LOT AREA = 18.6 Ac.± (PER TAX CARD)
7) ALL BUILDINGS AND SITE CONSTRUCTION SHALL COMPLY WITH THE RULES AND REGULATIONS OF THE AMERICANS WITH DISABILITIES ACT (ADA) OF 1990, AS AMENDED.
8) THE LOCATIONS OF EXISTING SUBSURFACE UTILITIES SHOWN ON THIS PLAN WERE COMPILED FROM AVAILABLE RECORD DRAWINGS AND ARE NOT WARRANTED TO BE CORRECT. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING SUBSURFACE UTILITIES PRIOR TO PERFORMING ANY WORK.
9) WRITTEN DIMENSIONS ON THIS PLAN TAKE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN THE EVENT OF A CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWINGS AND/OR SPECIFICATIONS, THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR.
10) THE CONTRACTOR SHALL CALL AND COORDINATE WITH DIGSAFE 811 PRIOR TO ANY EXCAVATION.
11) ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF HUDSON AND THE STATE OF NEW HAMPSHIRE.
12) THE SURVEY TRACT IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA (100 YEAR FLOOD) PER FLOOD INSURANCE RATE MAP NUMBER 33011C0519D, WITH AN EFFECTIVE DATE OF SEPTEMBER 25, 2009.
13) ALL CONSTRUCTION SHALL CONFORM TO THESE PLANS AND THE STANDARD CONSTRUCTION DRAWINGS AS SUPPLIED BY THE DEVELOPER.
14) THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY GREENMAN-PEDERSEN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR AND/OR ENGINEER AS INCLUDED IN THE PLAN SET DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE AND/OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.

GRADING & DRAINAGE NOTES:

1) ALL SITE DRAINAGE PIPE SHALL BE CORRUGATED HIGH-DENSITY POLYETHYLENE PIPE WITH STANDARD JOINTS, DUAL-WALL, SMOOTH INTERIOR, AS MANUFACTURED BY ADS, INC., OR APPROVED EQUAL, UNLESS OTHERWISE NOTED ON PLAN. THE UNDERGROUND DETENTION SYSTEM SHALL HAVE WATER TIGHT (WT) JOINTS MEETING ASTM D3212 SPECIFICATIONS.
2) ALL CANOPY DRAIN PIPE SHALL BE 6" PVC (SDR-35), EXCEPT WITHIN 10' OF A BUILDING FOUNDATION WHERE CAST IRON PIPE SHALL BE USED. MIN. SLOPE=1%.
3) ELEVATIONS ARE BASED ON NAVD88 DATUM.
4) ALL PROPOSED ELEVATIONS AS SHOWN ARE BOTTOM OF CURB ELEVATIONS, UNLESS OTHERWISE NOTED.
5) ANY UTILITY FIELD ADJUSTMENTS SHALL BE APPROVED BY THE ENGINEER OF RECORD AND COORDINATED WITH THE APPROPRIATE LOCAL UTILITY COMPANY.
6) THE LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR IS TO VERIFY EXACT LOCATION PRIOR TO CONSTRUCTION. THE CONTRACTOR IS TO NOTIFY THE DESIGN ENGINEER OF ANY DISCREPANCIES. CONSTRUCTION SHALL COMMENCE BEGINNING AT THE LOWEST INVERT (POINT OF CONNECTION) AND PROGRESS UP GRADIENT. PROPOSED INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND INSTALLATIONS SHALL BE FIELD VERIFIED BY TEST PIT PRIOR TO COMMENCEMENT OF CONSTRUCTION.
7) ALL CONSTRUCTION SHALL CONFORM TO TOWN OF HUDSON PUBLIC WORKS DEPARTMENT AND ALL APPLICABLE STATE AND FEDERAL STANDARDS.
8) THE CONTRACTOR SHALL CALL AND COORDINATE WITH DIG-SAFE (DIAL 811) PRIOR TO COMMENCING ANY EXCAVATION.
9) THIS SITE WILL NOT REQUIRE A USEPA NPDES PERMIT FOR STORMWATER DISCHARGE FOR THE SITE CONSTRUCTION SINCE THE DISTURBANCE DOES NOT EXCEED ONE ACRE (ACTUAL DISTURBANCE = 20,500SF±).
10) ANY UTILITIES TO BE TAKEN OUT OF SERVICE SHALL BE DISCONNECTED AS DIRECTED BY UTILITY COMPANY AND TOWN OF HUDSON PUBLIC WORKS DEPARTMENT.

CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR AST, CANOPY, AND FUEL SYSTEM APPURTENANCES FROM MANUFACTURER. SUBSTITUTIONS AND SHOP DRAWINGS SHOULD BE REVIEWED AND APPROVED BY THE DESIGN ENGINEER.

NHDES FACILITY ID# 991030A

GPI
Engineering
Design
Planning
Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE
HUDSON, NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE
FRANK C. MONTEIRO
No. 7182
LICENSED
PROFESSIONAL ENGINEER
6/23/23

REVISIONS

NO.	REVISION	DATE
1	ISSUED FOR BID	6/23/23

MAY 1, 2023

DRAWN/DESIGN BY	CHECKED BY
MDA/FR	HS

GENERAL NOTES & LEGEND

SCALE: NOT TO SCALE

PROJECT NO. NEX-2300001

C-100

F:\Projects\NEX-2300001 – Hudson, NH – DPW\CAD Files\2300001_DET.dwg GEN. NOTES 6/22/23 4:57pm sbonfanti

NAD 83

N

SEE SHEETS C-102, C-103, AND E-100 FOR MORE INFORMATION OF THIS AREA

SEE SHEETS M-100 AND E-200 FOR MORE INFORMATION OF THIS AREA

MAP 17 LOT 30
18.6 Ac.±
(PER TAX CARD)

1-STORY MASONRY BUILDING
17,395 Sq.Ft.
FF=289.82
#2 CONSTITUTION DRIVE

BUILDING HEIGHT=22.6'

LOCATION OF EXISTING FUEL DISPENSERS TO BE REMOVED IN ACCORDANCE WITH LOCAL AND STATE REQUIREMENTS (BY OTHERS – NOT UNDER THIS CONTRACT)

LOCATION OF EXISTING ABOVE GROUND FUEL STORAGE TANKS TO BE DECOMMISSIONED IN ACCORDANCE WITH LOCAL AND STATE REQUIREMENTS (BY OTHERS – NOT UNDER THIS CONTRACT)

BOLLARD (TYP. FIRE DEPARTMENT CONNECTION)

GENERATOR

FLAGPOLE

CONCRETE SIDEWALK

PAINTED PARKING SPACES (TYP.)

11 SPACES

12 SPACES

4 SPACES

BITUMINOUS CONCRETE

EOP

TREELINE (TYP.)

STONEWALL (TYP.)

"TOWN VEHICLES ONLY" SIGN

"TOWN OF HUDSON, NH PUBLIC WORKS DEPT." SIGN

"LIMIT TWO 5 GALLON PAILS" SIGN

JERSEY BARRIER

CHAINLINK FENCE (TYP.)

PROP. TREELINE (ITEM #201.1)

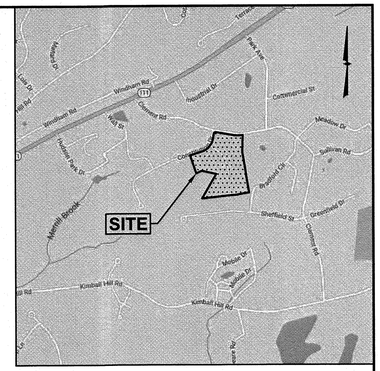
SU-30 DIESEL TO 2016

SU-30 DIESEL TO 2016

TO CONSTITUTION DRIVE

0 30 60 100

SCALE: 1" = 30'



LOCATION MAP
(NOT TO SCALE)

OWNER OF RECORD:
MAP 17 LOT 30
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051
BOOK 6018 PAGE 1610

NHDES FACILITY ID# 991030A

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE
HUDSON, NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE
FRANK C. MONTERO
No. 7152
LICENSED
PROFESSIONAL ENGINEER
6/23/23

REVISIONS		
2	ISSUED FOR BID	6/23/23
1	ADDRESS NHDES COMMENTS	6/14/23
NO.	REVISION	DATE

MAY 1, 2023

DRAWN/DESIGN BY	CHECKED BY
MDA/FR	HS

SITE OVERVIEW PLAN

SCALE: 1"=30'

PROJECT NO. NEX-2300001

C-101

811 DigSafe MA-ME-NH-RI-VT

F:\Projects\NEX-2300001 - Hudson, NH - DPW\CAD Files\2300001_SP.dwg OVERVIEW 6/22/23 4:57pm sbonfanti

NAD 83

N

MAP 17 LOT 30
18.6 Ac.±
(PER TAX CARD)

APPROXIMATE PROPERTY LINE

TREELINE (TYP.)

STONEWALL (TYP.)

EOP

CONCRETE SIDEWALK

PAINTED PARKING SPACES (TYP.)

1-STORY MASONRY BUILDING
17,395 Sq.Ft.
FF=289.82

#2 CONSTITUTION DRIVE

EXISTING MAIN DISTRIBUTION PANEL MDP

PROP. FUEL SYSTEM MONITORING SYSTEM

PROP. FUEL SYSTEM ELECTRICAL PANEL

EXISTING ELECTRICAL PANEL PP1

EXISTING FUEL SYSTEM ELECTRICAL PANEL

BUILDING HEIGHT=22.6'

ELECTRICAL ROOM

SPRINKLER ROOM

LUNCH ROOM

OFFICES

PROP. WIREWAY

BOLLARD (TYP.)

FIRE DEPARTMENT CONNECTION

GENERATOR

FLAGPOLE

11 SPACES

12 SPACES

4 SPACES

BITUMINOUS CONCRETE

PAINTED PARKING SPACES (TYP.)

PROP. SAWCUT LINE (ITEM #628.2). REPLACE EXISTING PAVEMENT AND MATCH EXISTING THICKNESS (4" MIN.)(ADJUST LIMITS AS REQUIRED). PAVEMENT TO BE DONE BY TOWN (N.I.C.)

"TOWN VEHICLES ONLY" SIGN

TOWN OF HUDSON, NH PUBLIC WORKS DEPT." SIGN

PROP. 6' HIGH CHAIN LINK FENCE (ITEM #607.A206)

PROP. REINFORCED CONCRETE TANK PAD (31'-6" x 18'-0")

PROP. 14,000 GAL. FUEL STORAGE TANK (8,000 GAL. DIESEL/6,000 GAL. REGULAR) - SEE DETAIL SHEETS

5' MIN. (TYP.)

4' MAX. (TYP.)

PROPOSED 6" LOAM AND HYDROSEED ALL DISTURBED AREAS (TYP.)

PROPOSED 6" LOAM (ITEM #641.) AND HYDROSEED (ITEM #646.31) ALL DISTURBED AREAS (TYP.)

PROP. TREELINE (ITEM #201.1)

PROP. PIPE BOLLARDS (TYP.-23 TOTAL)

VOC

GAS

DIESEL

PROPOSED VERTICAL CONC. CURB ALONG DELIVERY PAD

PROP. 18'x50' REINFORCED CONC. DELIVERY PAD

PROP. 3/4"-1 1/2" CRUSHED STONE WITH WEED BARRIER (4" THICK)

PROP. HIGH CAPACITY, GASOLINE DISPENSER

PROP. 56'x24' OVERHEAD CANOPY

PROP. HIGH CAPACITY, DIESEL DISPENSER

PROP. CANOPY COLUMN (TYP.)

PROP. 6" REINFORCED CONCRETE DISPENSER MAT (60'-0"x26'-6") WITH PLB'S

SU-30 AASHTO 2018

PROP. PIPE BOLLARDS (TYP.)

PROP. 3'x15' CONCRETE ISLAND WITH STAINLESS STEEL ISLAND FORM AND 6" REVEAL (2 TOTAL)

PROPOSED SLOPED GRANITE CURB (TYP.) (ITEM #609.216)

PROP. SAWCUT LINE (ITEM #628.2). REPLACE EXISTING PAVEMENT AND MATCH EXISTING THICKNESS (4" MIN.)(ADJUST LIMITS AS REQUIRED). PAVEMENT TO BE DONE BY TOWN (N.I.C.)

PAVEMENT SAWCUT

EXISTING RIGHT OF WAY PER PLAN REFERENCE #2

50'R

30'R

5'R

18'

30'

TO CONSTITUTION DRIVE

"TOWN VEHICLES ONLY" SIGN

"LIMIT TWO 5 GALLON PAILS" SIGN

JERSEY BARRIER

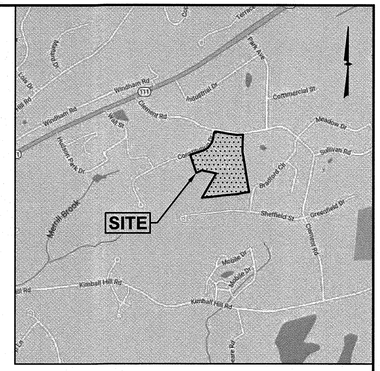
CHAINLINK FENCE (TYP.)

0 20 50 100

SCALE: 1" = 20'

OWNER OF RECORD:
MAP 17 LOT 30
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051
BOOK 6018 PAGE 1610

NHDES FACILITY ID# 991030A



LOCATION MAP
(NOT TO SCALE)

NOTES:

1) SEE SHEET C-100 FOR GENERAL NOTES & LEGEND.

2) THIS CONTRACT DEFINES ABOVEGROUND STORAGE TANK SYSTEM INSTALLATION AS A UNIT. THE UNIT SHALL CONSIST OF ALL MATERIALS, EQUIPMENT, AND LABOR REQUIRED FOR COMPLETE FUELING FACILITY INSTALLATION INCLUDING, BUT NOT LIMITED TO: DEWATERING, INSTALLATION OF TANKS, PIPING, DISPENSERS, ELECTRICAL, MONITORING SYSTEM, FUEL MANAGEMENT SYSTEM, BACKFILL, CONCRETE PADS, STEEL REINFORCEMENT, BOLLARDS, CRUSHED STONE, AND CONCRETE CURBING. NOTE: EXCAVATION, FINE GRADING, SAW CUTTING, GRAVEL, AND CRUSHED GRAVEL ARE NOT INCLUDED IN THIS ITEM. THE ACCEPTED QUANTITY OF ABOVEGROUND STORAGE TANK SYSTEM INSTALLATION WILL BE PAID AT THE CONTRACT LUMP SUM PRICE COMPLETE IN PLACE FOR THIS ITEM 670.111. SEE BID SCHEDULE FOR FULL LIST OF BID ITEMS.

3) THIS CONTRACT DEFINES FUELING CANOPY INSTALLATION AS A UNIT. THE UNIT SHALL CONSIST OF FURNISHING ALL EQUIPMENT AND MATERIALS, LIGHTING, ELECTRICAL, CONCRETE REINFORCED FOUNDATIONS, CANOPY ASSEMBLY, AND CANOPY INSTALLATION IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS AND MANUFACTURER'S REQUIREMENTS. THE ACCEPTED QUANTITY OF THE CANOPY INSTALLATION WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR THIS ITEM 670.121. SEE BID SCHEDULE FOR FULL LIST OF BID ITEMS.

4) PRIOR TO STARTING ANY AST CONSTRUCTION AT THE SITE THE CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE NHDES PLAN APPROVAL ENGINEER ON THE PROJECTS ICC CERTIFIED INSTALLER. THIS WRITTEN NOTICE SHALL INCLUDE ALL INFORMATION AS REQUIRED PER [ENV-OR 307.03(N)].

5) A PERMIT TO TEMPORARILY DISCHARGE GROUNDWATER, PURSUANT TO ENV-WQ 402 MAY BE REQUIRED PRIOR TO DEWATERING NECESSARY FOR THE INSTALLATION OF AN UNDERGROUND SYSTEM COMPONENT. APPLICATIONS AND PERMITTING INFORMATION CAN BE OBTAINED BY CALLING (603) 271-2513.

GPI
Engineering
Design
Planning
Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE
HUDSON, NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE
FRANK C. MONTEIRO
No. 7152
LICENSED
PROFESSIONAL ENGINEER
6/23/23

REVISIONS		
1	ISSUED FOR BID	6/23/23
NO.	REVISION	DATE

MAY 1, 2023

DRAWN/DESIGN BY	CHECKED BY
MDA/FR	HS

SITE LAYOUT PLAN

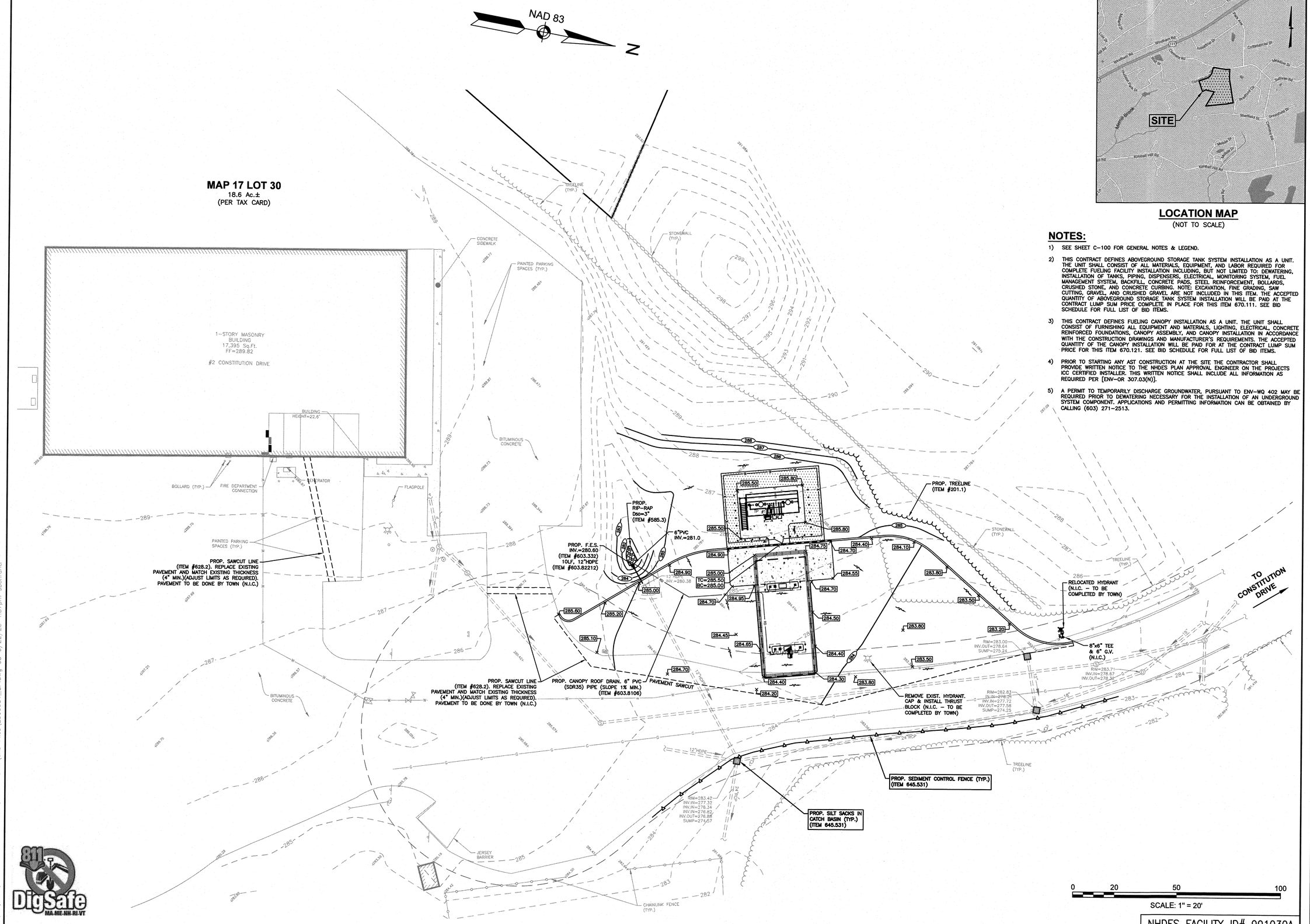
SCALE: 1"=20'

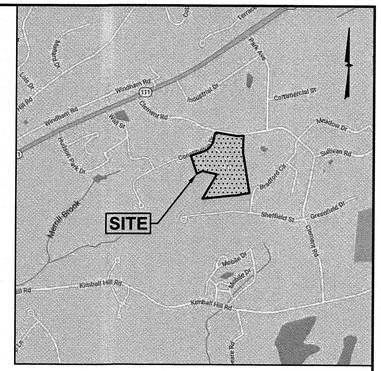
PROJECT NO. NEX-2300001

C-102

811 DigSafe MA.ME.NH.RI.VT

F:\Projects\NEX-2300001 - Hudson, NH - DPW\CAD Files\2300001_SP.dwg SP 6/22/23 4:57pm sbonfanti





LOCATION MAP
(NOT TO SCALE)

NOTES:

1) SEE SHEET C-100 FOR GENERAL NOTES & LEGEND.

2) THIS CONTRACT DEFINES ABOVEGROUND STORAGE TANK SYSTEM INSTALLATION AS A UNIT. THE UNIT SHALL CONSIST OF ALL MATERIALS, EQUIPMENT, AND LABOR REQUIRED FOR COMPLETE FUELING FACILITY INSTALLATION INCLUDING, BUT NOT LIMITED TO: DEWATERING, INSTALLATION OF TANKS, PIPING, DISPENSERS, ELECTRICAL, MONITORING SYSTEM, FUEL MANAGEMENT SYSTEM, BACKFILL, CONCRETE PADS, STEEL REINFORCEMENT, BOLLARDS, CRUSHED STONE, AND CONCRETE CURBING. NOTE: EXCAVATION, FINE GRADING, SAW CUTTING, GRAVEL, AND CRUSHED GRAVEL ARE NOT INCLUDED IN THIS ITEM. THE ACCEPTED QUANTITY OF ABOVEGROUND STORAGE TANK SYSTEM INSTALLATION WILL BE PAID AT THE CONTRACT LUMP SUM PRICE COMPLETE IN PLACE FOR THIS ITEM 670.111. SEE BID SCHEDULE FOR FULL LIST OF BID ITEMS.

3) THIS CONTRACT DEFINES FUELING CANOPY INSTALLATION AS A UNIT. THE UNIT SHALL CONSIST OF FURNISHING ALL EQUIPMENT AND MATERIALS, LIGHTING, ELECTRICAL, CONCRETE REINFORCED FOUNDATIONS, CANOPY ASSEMBLY, AND CANOPY INSTALLATION IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS AND MANUFACTURER'S REQUIREMENTS. THE ACCEPTED QUANTITY OF THE CANOPY INSTALLATION WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR THIS ITEM 670.121. SEE BID SCHEDULE FOR FULL LIST OF BID ITEMS.

4) PRIOR TO STARTING ANY AST CONSTRUCTION AT THE SITE THE CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE NHDES PLAN APPROVAL ENGINEER ON THE PROJECTS ICC CERTIFIED INSTALLER. THIS WRITTEN NOTICE SHALL INCLUDE ALL INFORMATION AS REQUIRED PER [ENV-OR 307.03(N)].

5) A PERMIT TO TEMPORARILY DISCHARGE GROUNDWATER, PURSUANT TO ENV-WQ 402 MAY BE REQUIRED PRIOR TO DEWATERING NECESSARY FOR THE INSTALLATION OF AN UNDERGROUND SYSTEM COMPONENT. APPLICATIONS AND PERMITTING INFORMATION CAN BE OBTAINED BY CALLING (603) 271-2513.

NHDES FACILITY ID# 991030A

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE
HUDSON, NEW HAMPSHIRE

FRANK C. MONTEIRO No. 7152 LICENSED PROFESSIONAL ENGINEER - STATE OF NEW HAMPSHIRE
6/23/23

REVISIONS		
1	ISSUED FOR BID	6/23/23
NO.	REVISION	DATE

MAY 1, 2023

DRAWN/DESIGN BY	CHECKED BY
MDA/FR	HS

GRADING, UTILITY & EROSION CONTROL PLAN

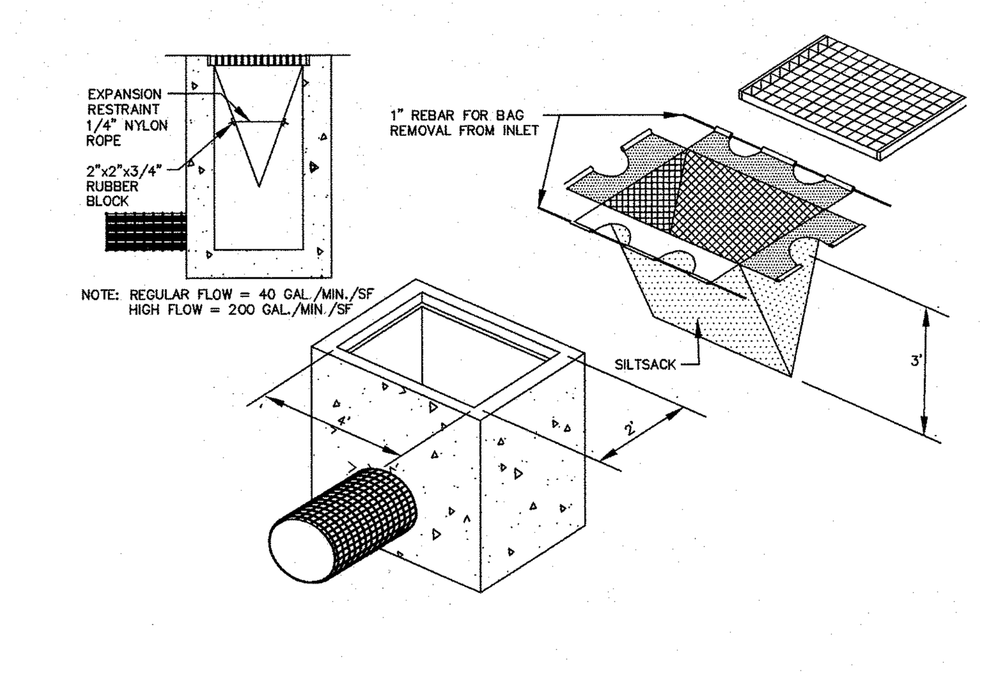
SCALE: 1"=20'

PROJECT NO. NEX-2300001

C-103

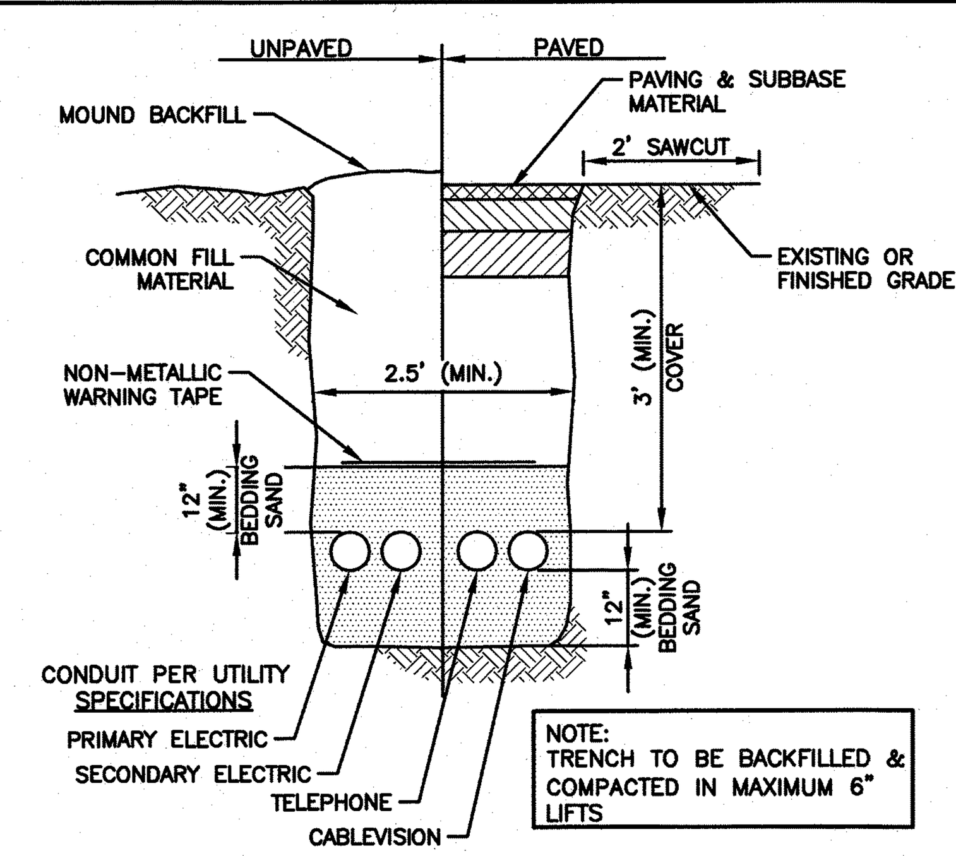
811 DigSafe MA ME NH RI VT

F:\Projects\NEX-2300001 - Hudson, NH - DPW\CAD Files\2300001_SP.dwg GD 6/22/23 4:57pm sbonfanti



SILT SACK DETAIL-ON OR OFF SITE

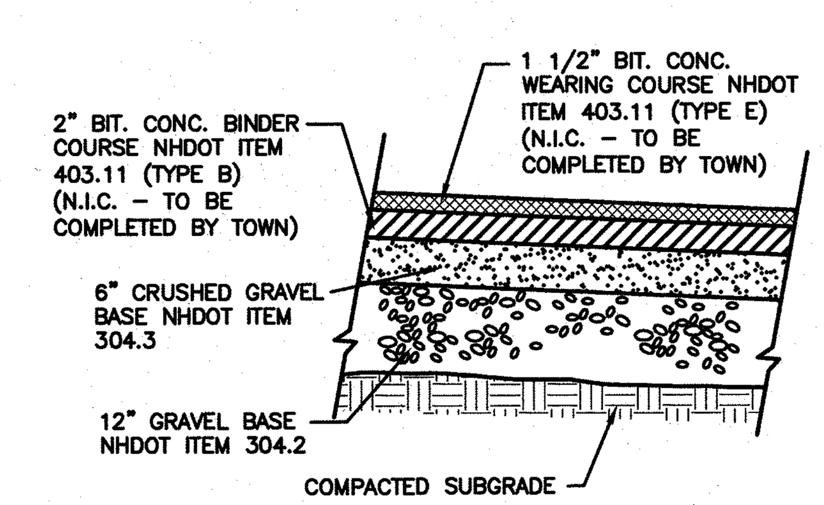
NOT TO SCALE



NOTE:
TRENCH TO BE BACKFILLED & COMPACTED IN MAXIMUM 6" LIFTS

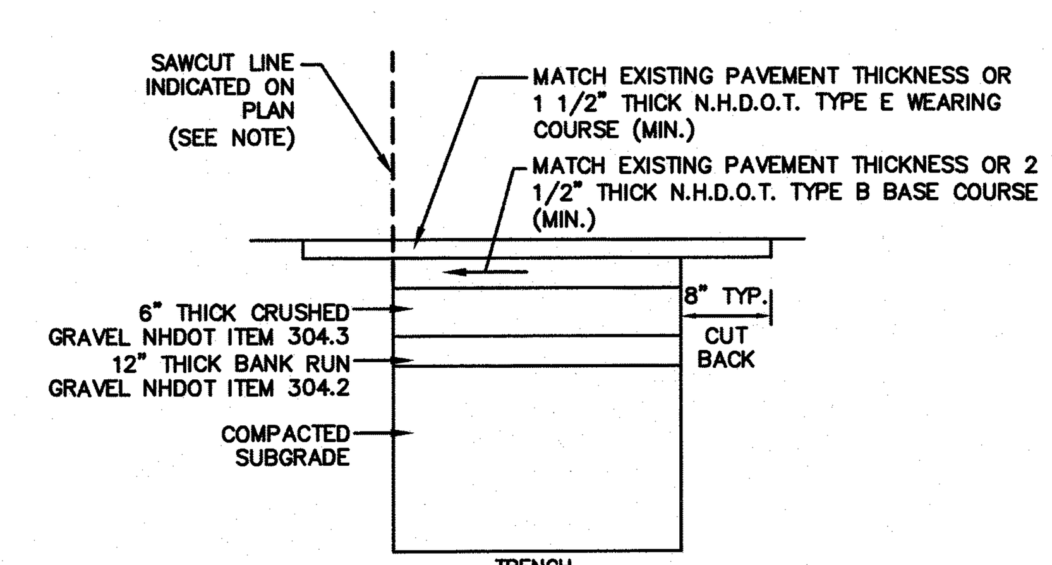
UTILITY TRENCH

NOT TO SCALE



ON-SITE PAVEMENT SECTION

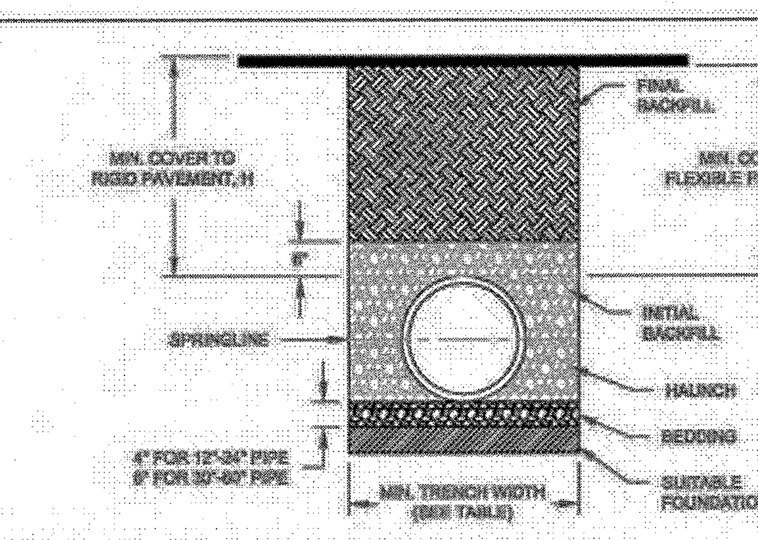
NOT TO SCALE



NOTE: SAWCUT LINE SHOWN ON PLAN REPRESENTS LIMITS OF FULL DEPTH RECONSTRUCTION. CUTBACKS FOR BASE COURSE TO BE CONSTRUCTED BEYOND SAWCUT LIMITS SHOWN.

TYPICAL PAVEMENT REPAIR DETAIL (ON-SITE)

NOT TO SCALE



NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
54"	88"
60"	96"

MINIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION: H-25	SURFACE LIVE LOADING CONDITION: HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

MINIMUM RECOMMENDED COVER BASED ON RAILWAY LOADING CONDITIONS

PIPE DIAM.	COOPER E-80**
UP TO 24"	24"
30"-36"	36"
42"-60"	48"

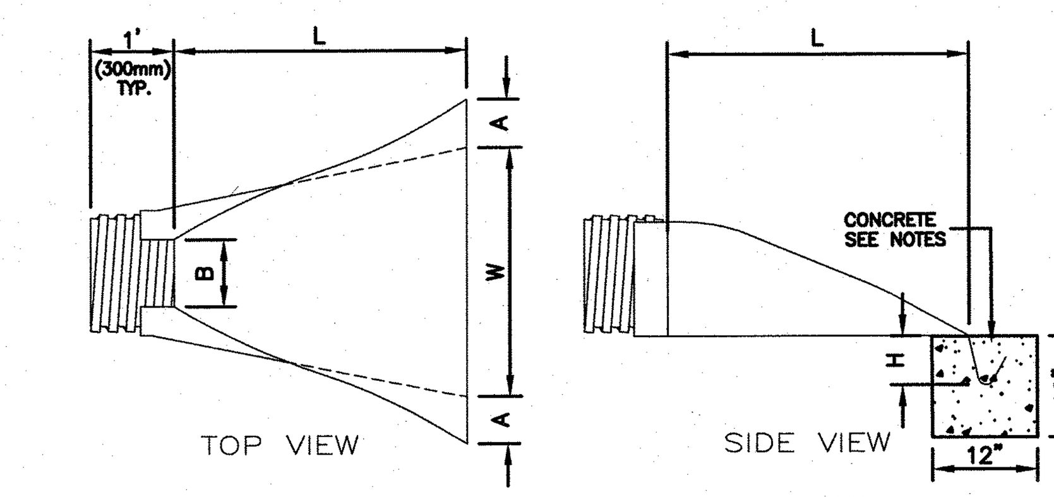
** COVER IS MEASURED FROM TOP OF PIPE TO BOTTOM OF RAILWAY TIE.
*** E-80 COVER REQUIREMENTS, ARE ONLY APPLICABLE TO ASTM F 2306 PIPE.

2	ADDED E-80 INFORMATION	TJR	09/20/07	
REV.	DESCRIPTION	BY	MM/DD/YY	CHKD

TYPICAL TRENCH DETAIL
DRAWING NUMBER: STD-101
ADS ADVANCED DRAINAGE SYSTEMS, INC.
NTS
1 OF 1

HDPE PIPE TRENCH

NOT TO SCALE



PIPE DIAMETER	DIMENSIONS, INCHES (mm): PART NO.	A, ±1 (25)	B MAX	H, ±1 (25)	L, ±1/2 (13)	W, ±2 (50)
12", 15" (300,375)	1210 NP	6.5 (165)	10 (254)	6.5 (165)	25 (635)	29 (736)
18" (450)	1810 NP	7.5 (190)	15 (380)	6.5 (168)	32 (812)	35 (890)
24" (600)	2410 NP	7.5 (190)	18 (450)	6.5 (165)	36 (900)	45 (1140)
30" (750)	3010 NP	10.5 (266)	NA	7.0 (178)	53 (1346)	68 (1725)
36" (900)	3610 NP	10.5 (266)	NA	7.0 (178)	53 (1346)	68 (1725)

CONSTRUCTION SPECIFICATIONS:

PREPARE BEDDING:
BACKFILL MATERIAL AROUND THE END SECTION MAY BE THE SAME AS THE MATERIAL AROUND THE PIPE, PLACE A FEW INCHES OF BACKFILL MATERIAL IN THE TRENCH OR DITCH WHERE THE END SECTION WILL BE PLACED. COMPACT AND CONTOUR THIS BEDDING MATERIAL TO GENERALLY MATCH THE END SECTION, EXCAVATE AN AREA IN THE BEDDING WHERE TOE TROUGH WILL SEAT SO THAT THE END SECTION WILL BE LEVEL WITH THE BOTTOM OF THE TRENCH OR DITCH IN THE FINISHED INSTALLATION.

PLACE END SECTION OF PIPE:
OPEN THE END SECTION COLLAR AND SEAT IT OVER THE TWO PIPE CONNECTIONS. ONCE THE END SECTION IS POSITIONED, CHECK TO MAKE SURE THAT THE INVERT OF THE END SECTION MATCHES THE INVERT OF THE PIPE AND THAT THE END SECTION IS LEVEL WITH THE TRENCH OR DITCH BOTTOM.

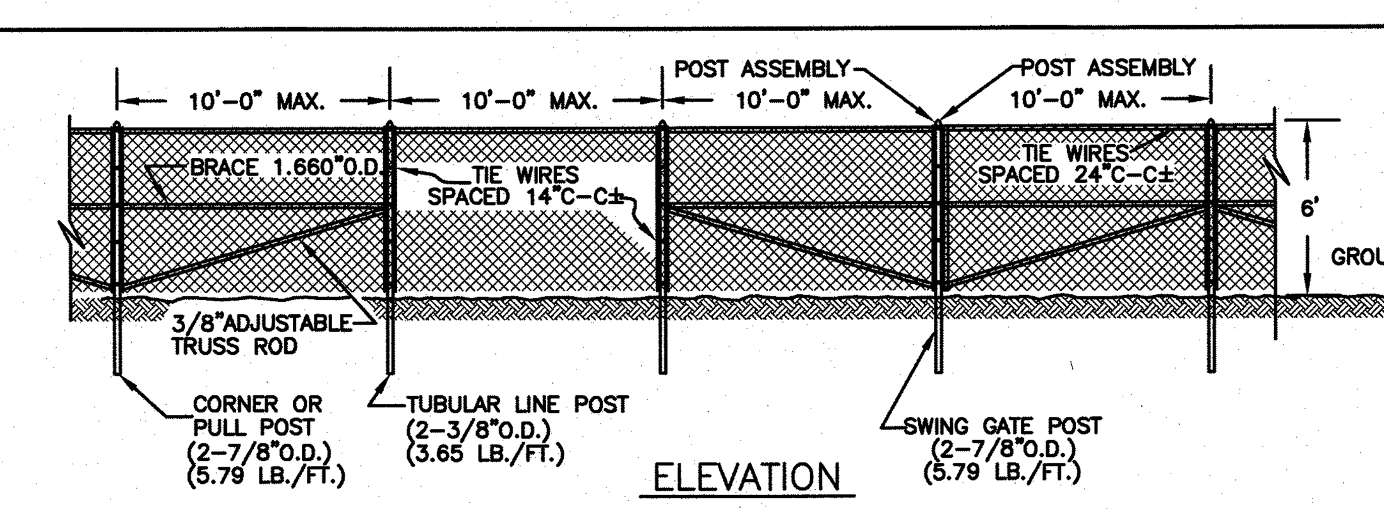
SECURE THE END SECTION:
SLIP THE STAINLESS STEEL ROD THROUGH THE PRE-DRILLED HOLES AT THE TOP OF THE COLLAR. THE ROD SHOULD BE BETWEEN THE CROWNS OF THE TWO PIPE CONNECTIONS. PLACE A WASHER ON EITHER END OF THE ROD. PLACE A NUT ON EITHER END OF THE ROD AND TIGHTEN WITH A WRENCH.

SECURE THE TOE TROUGH:
TO PREVENT WASHOUTS FROM HIGH VELOCITY FLOW, IT IS RECOMMENDED THAT THE TROUGH BE SECURED WITH CONCRETE. POUR CONCRETE IN THE TROUGH UP TO THE LEVEL OF THE TRENCH OR DITCH BOTTOM AND ALONG THE ENTIRE LENGTH OF THE TROUGH.

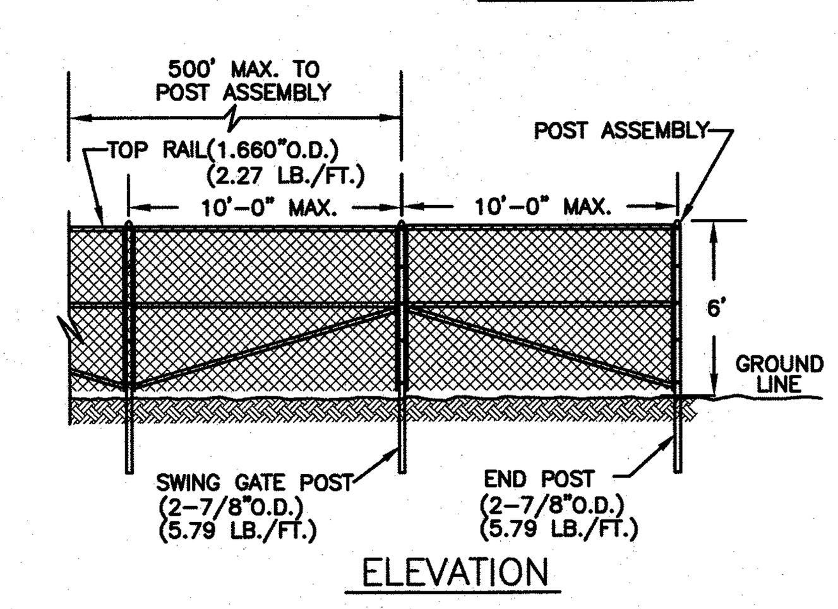
FINISH BACKFILL:
SHOVEL BACKFILL AROUND THE END SECTION IN 6 TO 9 INCH LAYERS EQUALLY ON BOTH SIDES, KNIFING IT TO ELIMINATE VOIDS. TAMP WITH A SMALL-FACED COMPACTOR OR OTHER EQUIPMENT SUITABLE FOR SMALL AREAS. CONTINUE PLACING, KNIFING, AND COMPACTING BACKFILL LAYERS TO THE TOP OF THE END SECTION TO SEAT IT WELL INTO THE BACKFILL.

FLARED END SECTION HIGH DENSITY POLYETHYLENE (HDPE)

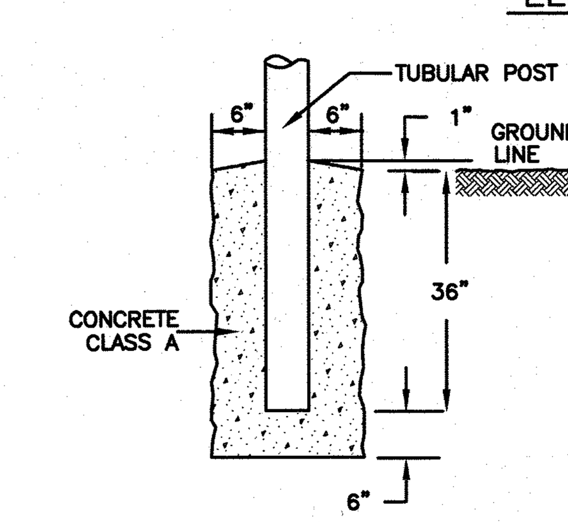
NOT TO SCALE



ELEVATION



ELEVATION

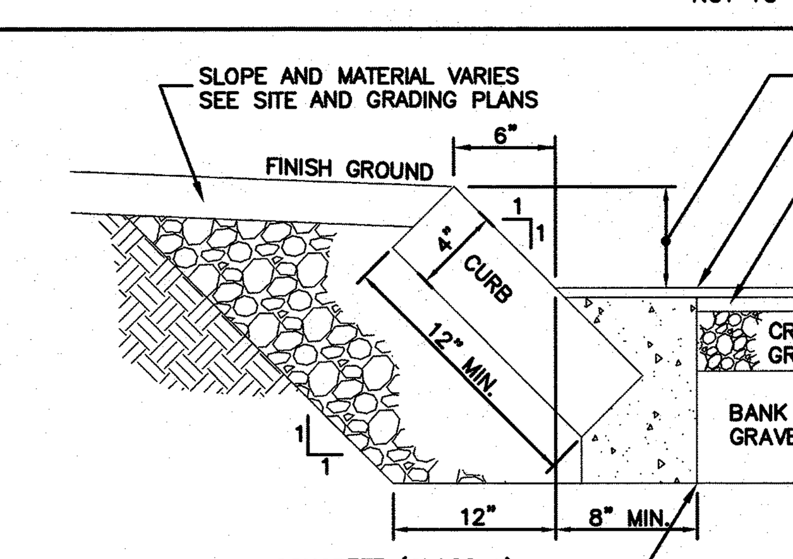


FOOTING DETAIL

NOTES:
1) ALL END POSTS SHALL HAVE ONE BRACE ALL CORNER AND INTERMEDIATE BRACE OR PULL POSTS SHALL HAVE TWO BRACES, WITH A MAXIMUM SPACING OF BETWEEN POST ASSEMBLIES OF 500 FEET.
2) FENCE FABRIC SHALL BE STANDARD 2" CHAIN LINK GALVANIZED MESH WITH BLACK VINYL COATING.
3) ALL POSTS, RAILS, FITTINGS AND ACCESSORIES SHALL BE GALVANIZED WITH BLACK VINYL COATING.

CHAIN LINK FENCE DETAIL

NOT TO SCALE



CONCRETE (CLASS A) ITEM 520.A TOP OF CONCRETE TO BE FLUSH WITH ASPHALT BINDER COURSE

RADIUS FOR STONES WITH SQUARE JOINTS	RADIUS FOR STONES WITH RADIAL JOINTS	MAXIMUM LENGTH
16'-28'	SEE CURB SECTIONS ON RADII DETAIL	1'-6"
29'-41'		2'
42'-55'		3'
56'-68'		4'
69'-82'		5'
83'-96'		6'
97'-110'		7'
OVER 110'		8'

MAXIMUM LENGTH OF STRAIGHT CURB STONES – 18"

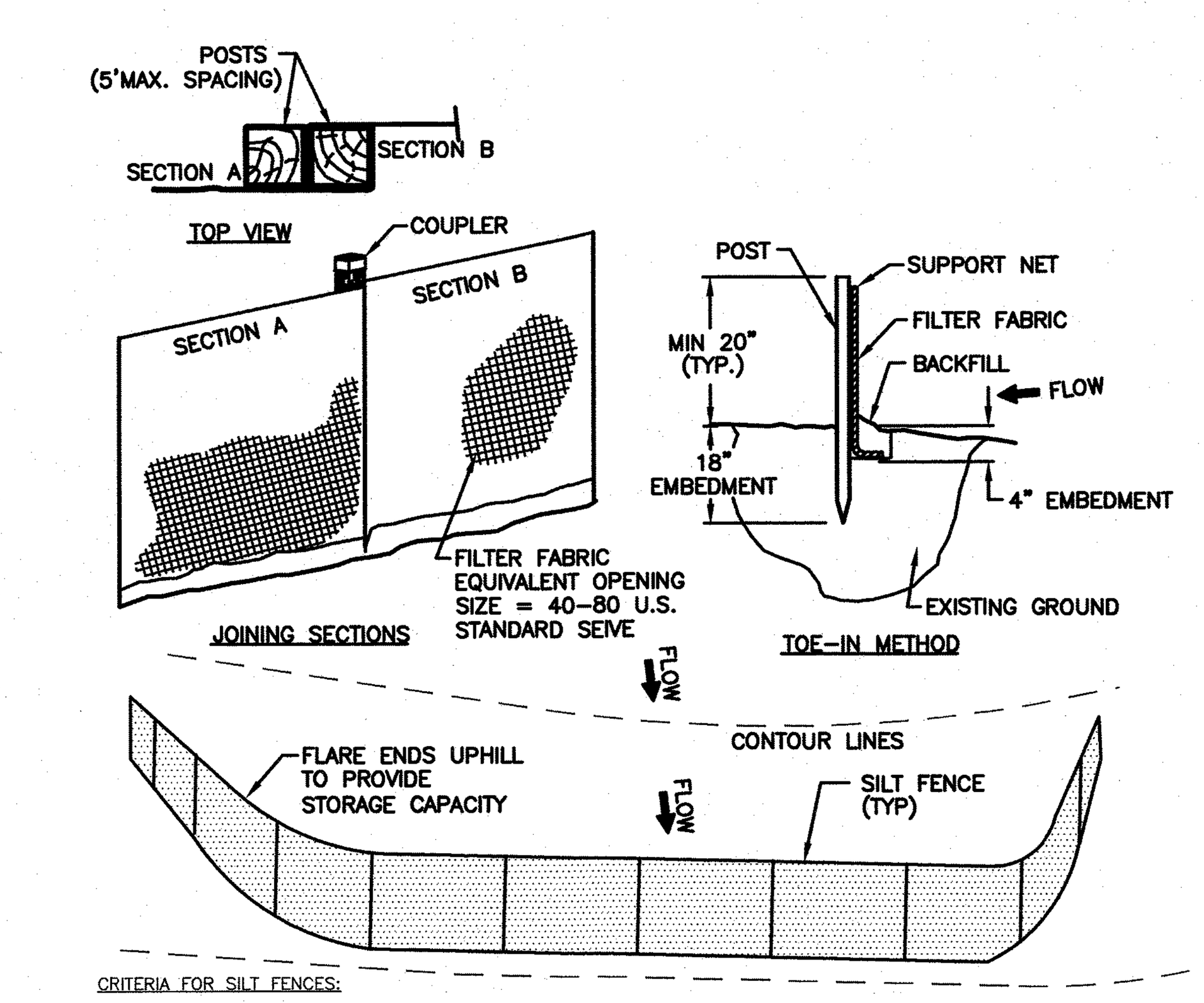
MINIMUM LENGTH OF STRAIGHT CURB STONES – 8'

MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES SEE CHART

ADJOINING STONES OF STRAIGHT CURB LAID ON CURVES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.

SLOPED GRANITE CURB

NOT TO SCALE



CRITERIA FOR SILT FENCES:

1) SILT FENCE FILTER CLOTH: THE FABRIC FOR THE SILT FENCE SHALL MEET THE FOLLOWIING SPECIFICATIONS:

FABRIC PROPERTIES:	MINIMUM ACCEPTABLE VALUES	TEST METHOD
GRAB TENSILE STRENGTH (lbs)	90	ASTM D1682
ELONGATION AT FAILURE (%)	50	ASTM D1682
MULLEN BURST STRENGTH (PSI)	190	ASTM D3786
PUNCTURE STRENGTH (lbs)	40	ASTM D751
EQUIVELANT OPENING SIZE	40-80	US STD SIEVE

2) FENCE POSTS (FOR FABRICATED UNITS) – THE POSTS SHALL BE A MINIMUM OF 36 INCHES LONG. WOOD POSTS WILL BE OF SOUND QUALITY HARDWOOD WITH A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES. STEEL POSTS WILL BE STANDARD T OR U SECTIONS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT. MAXIMUM SPACING SHALL BE 6 LINEAR FEET.

3) WIRE FENCE (FOR FABRICATED UNITS) – WIRE FENCING SHALL BE A MINIMUM 14.5 GUAGE WITH A MAXIMUM 6 INCH MESH OPENING.

4) PREFABRICATED UNITS – PREFABRICATED UNITS MAY BE USED IN LIEU OF THE ABOVE METHOD PROVIDING: (1) THE FILTER CLOTH AND FENCE POSTS MEET THE ABOVE CRITERIA; AND (2) THE UNIT IS INTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

MAINTENANCE:

1) SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE IMMEDIATELY.

2) IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.

3) SEDIMENT DEPOSITS SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACH APPROXIMTELY ONE-HALF THE HEIGHT OF THE BARRIER.

4) SEDIMENT DEPOSITS THAT ARE REMOVED OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

CONSTRUCTION SPECIFICATIONS:

1) THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES.

2) THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 8 INCHES INTO THE GROUND (4" DEEP & 4" WIDE) AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.

3) WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES.

4) FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOVEN WIRE FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP, MID-SECTION AND BOTTOM.

5) WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EAC OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES (24" IS PREFERRED), FOLDED, AND STAPLED.

6) POSTS TO BE SPACED AT A MAXIMUM OF 6' ON CENTER.

SEDIMENT CONTROL FENCE

NOT TO SCALE

NHDES FACILITY ID# 991030A

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE HUDSON, NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE FRANK C. MONTEIRO No. 7152 LICENSED PROFESSIONAL ENGINEER
6/23/23

REVISIONS

NO.	REVISION	DATE
1	ISSUED FOR BID	6/23/23

MAY 1, 2023

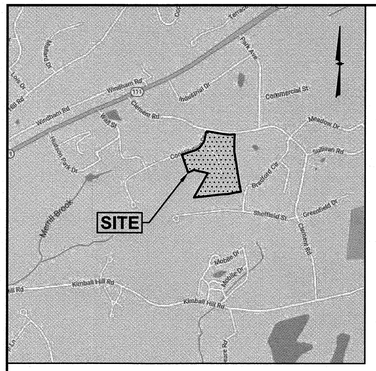
DRAWN/DESIGN BY	CHECKED BY
MDA/FR	HS

DETAIL SHEET

SCALE: AS SHOWN

PROJECT NO. NEX-2300001

C-104



LOCATION MAP
(NOT TO SCALE)

TANK LEGEND:

(1) 4K DIESEL	EXISTING 4,000 GAL STEEL ABOVE GROUND STORAGE TANK WITH INTEGRATED SECONDARY CONTAINMENT INSTALLED 4/1/2000 TO BE REMOVED.
(2) 3K REG UNL	EXISTING 3,000 GAL STEEL ABOVE GROUND STORAGE TANK WITH INTEGRATED SECONDARY CONTAINMENT INSTALLED 4/1/2000 TO BE REMOVED.
(3A)(3B) 14K SPLIT 8K DSL/6K REG	PROPOSED 14,000 GAL. DOUBLE WALL STEEL UL 2085 SPLIT ABOVE GROUND STORAGE TANK (3A) = 8,000 GAL. DIESEL/ (3B) = 6,000 GAL. REGULAR UNLEADED
	⬡ = NHDES TANK DESIGNATION

NOTES:

1) EXISTING BOUNDARY, SITE LAYOUT, GRADING AND UTILITY INFORMATION AS SHOWN ON THIS PLAN IS THE RESULT OF AN ACTUAL FIELD SURVEY BY THIS OFFICE.
2) THE INTENT OF THIS PLAN IS TO SHOW THE INSTALLATION OF A NEW ABOVE GROUND FUEL STORAGE TANK WITH TWO (2) COMPARTMENTS, TWO (2) DISPENSERS, PRODUCT PIPING, AND AN OVERHEAD CANOPY. NEW ENVIRONMENTAL MONITORING CONSOLE, PROBES AND SENSORS TO BE INSTALLED. THIS WILL BE AN UNATTENDED FLEET FUELING FACILITY.
3) NAME OF NEAREST SURFACE WATER: UNNAMED POND
4) DISTANCE TO NEAREST SURFACE WATER: >75±
5) 100 YEAR FLOOD PLAIN INFORMATION: SITE LOCATION IS NOT WITHIN FLOOD PLAIN PER FLOOD INSURANCE RATE MAPS.
6) CONTRACTOR INSTALLING AST SYSTEM SHALL BE CERTIFIED BY THE INTERNATIONAL CODE COUNCIL (ICC) FOR AST INSTALLATIONS. THE SCOPE OF WORK PROPOSED SHALL BE CONDUCTED BY OR OVERSEEN BY A CERTIFIED ICC INSTALLER.

NOTES (CONTINUED):

7) THE NEW UNDERGROUND FUEL STORAGE SYSTEM COMPONENTS WILL BE TESTED BY THE CONTRACTOR PRIOR TO BACKFILLING. THE FOLLOWING TESTS SHALL BE CERTIFIED BY THE INSTALLER PRIOR TO BACKFILLING AND COPIES OF THE RESULTS SHALL BE PROVIDED TO THE NHDES AT THE TIME OF BACKFILL INSPECTION.

A. TANK TESTING:
THE NEW DOUBLE WALL STEEL TANK SHALL BE INSTALLED, HANDLED, AND TESTED IN ACCORDANCE WITH THE TANK MANUFACTURERS INSTALLATION INSTRUCTIONS AND IN ACCORDANCE WITH ENV-OR-300 REGULATIONS. ANY TANK MANUFACTURER CHECKLISTS SHALL BE COMPLETED BY THE CONTRACTOR AND A COPY PROVIDED TO THE OWNER.

B. PRODUCT PIPING – APT

PRIMARY LINE:
APPLY AN AIR SOURCE TO THE XP PIPING. PRESSURIZE THE LINE TO BETWEEN 50 AND 100 PSI (3.5 AND 6.89 BAR) AND ALLOW THE PRESSURE TO SETTLE. AFTER PIPING IS PRESSURIZED, SOAP ALL JOINTS AND FITTINGS. IF A LEAK IN THE TERMINATION FITTING IS DISCOVERED RELIEVE THE AIR PRESSURE, RETIGHTEN AND REPRESSURIZE. A MINIMUM OF A 1-HOUR PRESSURE TEST SHOULD BE OBSERVED WITH NO PRESSURE LOSS. UPON COMPLETION OF A PASSING PRESSURE TEST, PRESSURE CAN BE RELIEVED OR PRESSURE MAY BE HELD UNTIL BACKFILL AND CONCRETE IS POURED.

NOTE: IF PRESSURE IS LEFT ON THE PIPING SYSTEM FOR AN EXTENDED PERIOD OF TIME, THERMAL EXPANSION OR CONTRACTION MAY CAUSE THE PIPING PRESSURE TO FLUCTUATE.

INTERSTITIAL SPACE:
IT IS CRITICAL TO VERIFY THAT THE SCUFF GUARD HAS BEEN PROPERLY CUT BACK TO BE EVEN WITH OR OUTSIDE OF THE CONTAINMENT SUMP TO ENSURE THAT THE APT DUCTED ENTRY BOOT AS WELL AS THE TEST BOOT SEALS TO THE SC JACKET AND NOT ON THE SCUFF GUARD FOR THIS PRESSURE TEST. IF THE TEST BOOT IS NOT SEALED DIRECTLY ONTO THE SC JACKET, YOU COULD GET FALSE READINGS. ONCE THE TEST BOOTS ARE IN PLACE, PRESSURIZE THE PIPING TO BETWEEN 5 AND 8 PSI (0.34 AND 0.55 BAR). AFTER THE PRESSURE HAS STABILIZED, DISCONNECT THE AIR SUPPLY AND MONITOR THE SYSTEM FOR LEAKAGE. THE LINE NEEDS TO REMAIN PRESSURIZED FOR A MINIMUM OF ONE HOUR WITH NO PRESSURE LOSS DETECTED IN ORDER FOR THE PIPING TO PASS. THE CONTRACTOR SHALL MAINTAIN THE REQUIRED PRESSURE FOR A MINIMUM OF 2 HOURS AFTER THE BACKFILL PROCESS HAS BEEN COMPLETED.

NOTE: AFTER TESTING THE SECONDARY LINE, OPEN THE TEST VALVES AND PULL BACK THE TEST BOOTS TO ALLOW ANY LEAK FROM THE PRIMARY LINE TO ENTER INTO THE SUMP WHERE IT CAN BE DETECTED.

C. DISPENSER/TRANSITION SUMPS:

THE NEW SUMPS SHALL BE HYDROSTATICALLY TESTED FOR TIGHTNESS AS FOLLOWS:

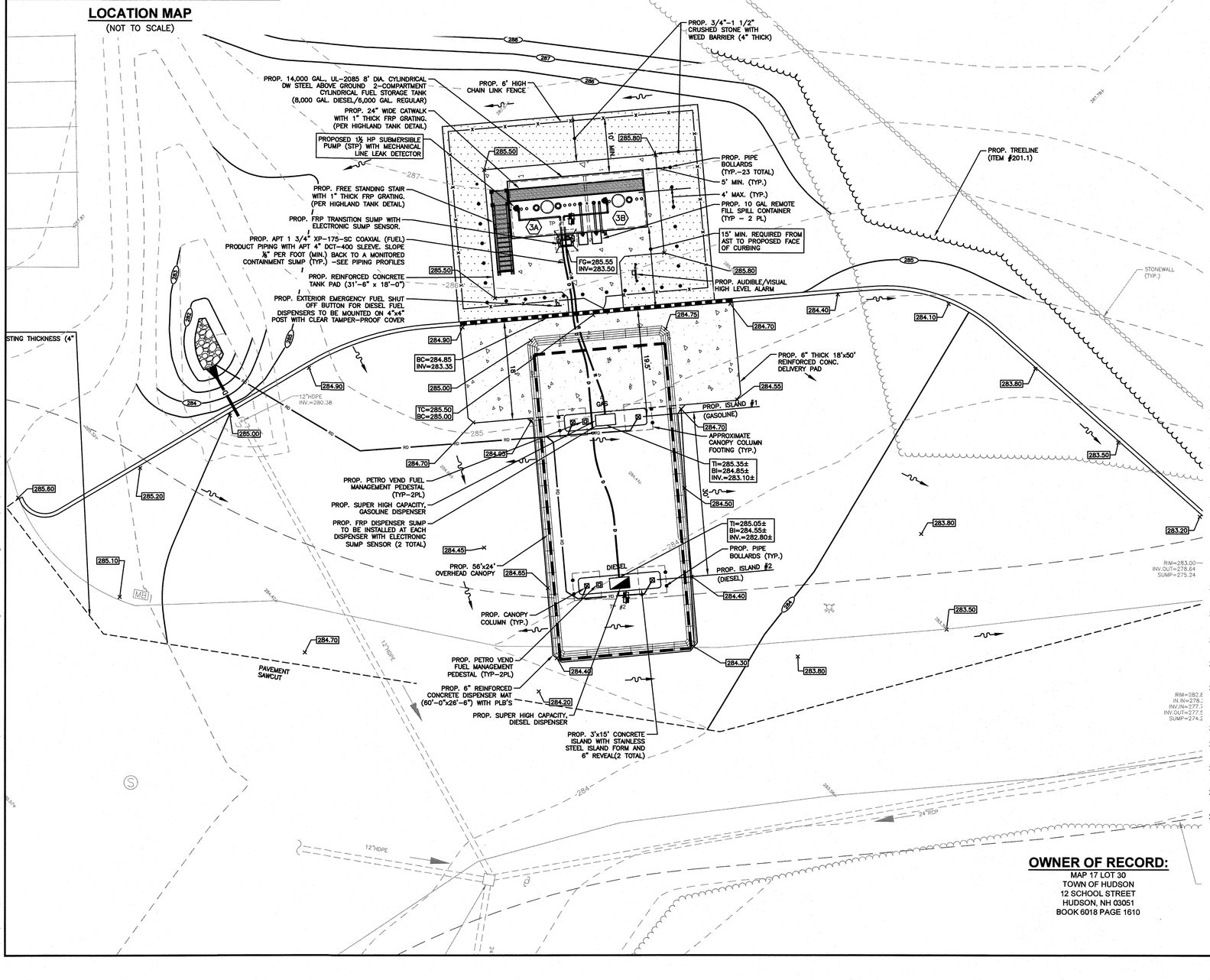
1. AFTER ALL SEAMS AND FITTINGS HAVE BEEN COMPLETED AND ALL PIPING AND CONDUITS HAVE BEEN INSTALLED;
2. AT A LEVEL THAT IS WITHIN ONE INCH OF THE TOP OF THE SUMP OR TEN INCHES ABOVE THE TOP OF THE HIGHEST PENETRATION FITTING, WHICHEVER IS LOWER;
3. BY RECORDING THE LIQUID LEVEL MEASUREMENTS AT THE BEGINNING AND END OF THE TEST;
4. FOR A MINIMUM OF 3 HOURS; AND
5. WITH NO ADDITION OF LIQUID TO THE SUMP.

A PASSING HYDROSTATIC TEST SHALL HAVE NO LOSS OF LIQUID OR OBSERVED LEAKS AFTER THE COMPLETE DURATION OF THE TEST.

D. ABOVEGROUND STEEL FILL AND PRODUCT PIPING

THE PIPING TO BE PRESSURIZED WITH AIR TO A MAXIMUM OF 50 PSI. MAINTAIN THIS PRESSURE FOR ONE HOUR ENSURING THERE IS NO DROP IN PRESSURE. ADDITIONALLY SPRAY FITTINGS WITH A NON-CORROSIVE LEAK CHECK SOLUTION AND LOOK FOR BUBBLES. A PASSING PRESSURE TEST SHALL HAVE NO LOSS OF PRESSURE OR OBSERVED LEAKS AFTER THE COMPLETE DURATION OF THE TEST.

8) THE CONTRACTOR SHALL CALL DIGSAFE (811) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
9) ALL CONSTRUCTION AND EQUIPMENT MUST CONFORM TO THE APPLICABLE REGULATIONS AND CODES OF THE TOWN, THE STATE OF NEW HAMPSHIRE (ENV-OR 300), AND THE NFPA.
10) CONTRACTOR SHALL PROVIDE AT LEAST 5 BUSINESS DAYS ADVANCE NOTICE TO THE N.H. DEPARTMENT OF ENVIRONMENTAL SERVICES, THE MUNICIPAL FIRE DEPARTMENT AND THE ENGINEER TO INSPECT THE INSTALLATION PRIOR TO FINAL BACKFILL. PROVIDE NHDES WITH A COPY OF TEST REPORTS AT TIME OF INSPECTION.
11) ALL PIPING AND DISPENSER SUMPS SHALL BE EQUIPPED WITH LIQUID TIGHT PENETRATION FITTINGS FOR ALL SUMP ENTRIES, AS WELL AS SUMP SENSORS (INSTALLED AT LOWEST POINT OF SUMPS) TO DETECT ACCUMULATION OF LIQUIDS.
12) NHDES REQUIRES THAT A CONCRETE PAD HAVING POSITIVE LIMITING BARRIERS SHALL BE UTILIZED AT DISPENSING AREAS, DISPENSING NOZZLES SHALL NOT EXTEND BEYOND INNERMOST POSITIVE LIMITING BARRIERS (IN ALL DIRECTIONS) AND THE BARRIERS SHOULD HAVE A VOLUME EQUAL TO CONTAIN 5 GALLONS PER DISPENSER (10 GALLONS TOTAL) FOR THE DISPENSER PAD. ALL FUEL NOZZLES, AT MAXIMUM EXTENT OF DISPENSING HOSES, ARE TO BE RETAINED WITHIN THE INNERMOST PLB GROOVE IN ALL DIRECTIONS WHEN HELD 3' ABOVE D-PAD AND NOZZLE-OUTLETS ARE POINTED PERPENDICULAR-TO / ACROSS-FROM PERIMETER GROOVES.
13) THE SITE IS SERVICED BY MUNICIPAL WATER. THERE ARE NO PUBLIC OR NON-PUBLIC WATER SUPPLY WELLS WITHIN THE REQUIRED SETBACKS OF THE PROPOSED SYSTEM.
14) ALL LINE LEAK DETECTORS SHALL BE TESTED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS AND THE PASSING TEST RESULTS SUBMITTED TO THE NHDES BEFORE THE PRODUCT IS USED FOR CONSUMPTION.
15) STORM WATER SHALL NOT BE DIRECTED TO FLOW OVER ANY TANK PAD OR DISPENSING PAD. PROPOSED CANOPY ROOF DRAINS WILL DISCHARGE INTO EXISTING DRAINAGE SWALE.
16) THE PRIMARY OVERFILL PREVENTION DEVICE FOR THIS SITE SHALL CONSIST OF AN OVERFILL ALARM WHICH ALERTS THE TRANSFER OPERATOR BY TRIGGERING AN AUDIBLE & VISUAL ALARM WHEN THE TANK IS NO MORE THAN 90% FULL. A SECONDARY MECHANICAL OVERFILL PREVENTION VALVE WILL ALSO BE PROVIDED. THIS VALVE WILL SHUT OFF FLOW INTO THE TANK WHEN THE TANK IS NO MORE THAN 95% FULL. SEE DETAIL SHEET.
17) ALL ELECTRICAL AND CONDUIT INSTALLATIONS/MATERIALS/OFFSETS SHALL MEET NFPA 70-2020 ARTICLE 514 REQUIREMENTS.
18) PER NFPA 30A-2018, 6.7, EMERGENCY ELECTRICAL DISCONNECTS ARE REQUIRED FOR FUEL DISPENSING SYSTEMS. SUCH DEVICES SHALL BE INTERCONNECTED AND CLEARLY IDENTIFIED AND INSTALLED IN APPROVED LOCATIONS BUT NOT LESS THAN 20' OR MORE THAN 100' FROM THE FUEL DISPENSING DEVICES THEY SERVE.
19) THE PROPOSED ABOVE GROUND STORAGE TANK SHALL BE MARKED WITH INFORMATION REGARDING THE PRODUCT STORED AND SYSTEM SPECIFICATIONS, AS NOTED BELOW:
    a) ALL LETTERING SHALL BE AT LEAST 2 INCHES HIGH IN A COLOR THAT CONTRASTS WITH THE COLOR OF THE TANK, SO AS TO BE READILY DISCERNABLE FROM THE DISTANCE AT WHICH THE LETTERING WILL TYPICALLY BE VIEWED;
    b) THE APPROPRIATE NATIONAL FIRE RATING SYSTEM SYMBOL AS ESTABLISHED BY NFPA-704, IDENTIFICATION OF FIRE HAZARDS AND MATERIALS. THE VALUES IN THE SYMBOL TO BE VERIFIED BY FUEL SUPPLIER;
    c) "TANK #3A-DIESEL" AND "TANK #3B-GASOLINE", REPRESENTING THE TANK NUMBER CORRESPONDING TO THE TANK NUMBER IDENTIFIED ON THE FACILITY REGISTRATION(S) AS DESCRIBED IN ENV-OR 304.02; AND
    d) "SAFE FILL HT. = 8'-5" THE SAFE FILL VOLUME OR SAFE FILL HEIGHT OF THE TANK WHICH CORRESPONDS TO THE HEIGHT AT WHICH THE HIGH LEVEL ALARM IS ACTIVATED IN THE SAME UNITS AS THE TANK GAUGE.
20) THE CONTRACTOR SHALL INSTALL WARNING SIGNS WITH SPECIFIC WORDING WITHIN THE DISPENSING AREA PER NFPA (30A-2018, 9.2.5.4).
21) OUTDOOR FIRE EXTINGUISHERS (80:BC) ARE TO BE LOCATED AT EACH FUEL DISPENSING AREA PER NFPA (30A-2018, 9.2.5.2).
22) RIGID ENTRY BOOTS ARE TO BE USED AT TRANSITION AND DISPENSER SUMPS. CONTRACTOR SHALL NOTE THAT BOSTIK TYPE SEALANTS ARE NOT ALLOWED TO BE USED INSIDE SUMPS
23) TO PROHIBIT FUELING DIRECTLY OVER A CONTROL JOINT, CONTROL JOINTS AT DISPENSER PADS ARE NOT TO BE LOCATED DIRECTLY IN FRONT OF DISPENSERS.
24) AST CLOSURE AND SITE ASSESSMENT REQUIREMENTS FOR THE TWO (2) EXISTING ASTS AND ASSOCIATED DISPENSERS, AND PRODUCT PIPING SHALL BE PERFORMED IN ACCORDANCE WITH ENV-OR 300 ANY INDICATION OF CONTAMINATION REQUIRES IMMEDIATE NOTIFICATION TO NHDES PURSUANT TO THE REQUIREMENTS OF ENV-OR 604.06. THE AST CLOSURE WILL BE COORDINATED BY THE TOWN OF HUDSON UNDER SEPARATE CONTRACT.
25) ALL TANKS AND ABOVEGROUND PIPING SHALL BE PAINTED AND COATED PER ENV-OR 305.06(C)
26) ALL ABOVEGROUND VALVES, PIPING, AND EQUIPMENT THAT CONTACT THE STORED PRODUCT SHALL BE STEEL OR STAINLESS STEEL AND NOT CONSTRUCTED OF SOFT METALS AS INDICATED IN NFPA 30A 27.4.
27) FOLLOWING COMPLETION OF THE INSTALLATION AND PRIOR TO NHDES ISSUING AUTHORIZATION TO OPERATE THE ICC INSTALLER SHALL SUBMIT A REPORT TO NHDES AS REQUIRED BY ENV-OR 307.09.
28) PER ENV-OR 306.02 AN NH P.E. STAMPED SPCC PLAN CERTIFICATION PAGE UPDATED TO INCLUDE PROPOSED TANK SHALL BE PROVIDED TO NHDES PRIOR TO AUTHORIZATION TO OPERATE TANK.
29) GALVANIZED PIPE SHALL NOT BE USED FOR SYSTEMS STORING DIESEL FUEL, KEROSENE OR JET FUEL. PEI/RP200-13 9.2



OWNER OF RECORD:
MAP 17 LOT 30
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051
BOOK 6018 PAGE 1610

NHDES FACILITY ID# 991030A

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE
HUDSON, NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE
FRANK C. MONTEIRO
No. 7155
LICENSED
PROFESSIONAL ENGINEER
6/21/23

REVISIONS		
2	ISSUED FOR BID	6/23/23
1	ADDRESS NHDES COMMENTS	6/14/23
NO.	REVISION	DATE

MAY 1, 2023

DRAWN/DESIGN BY	CHECKED BY
SJB/DJP	HS

AST PLAN

SCALE: 1"=10'

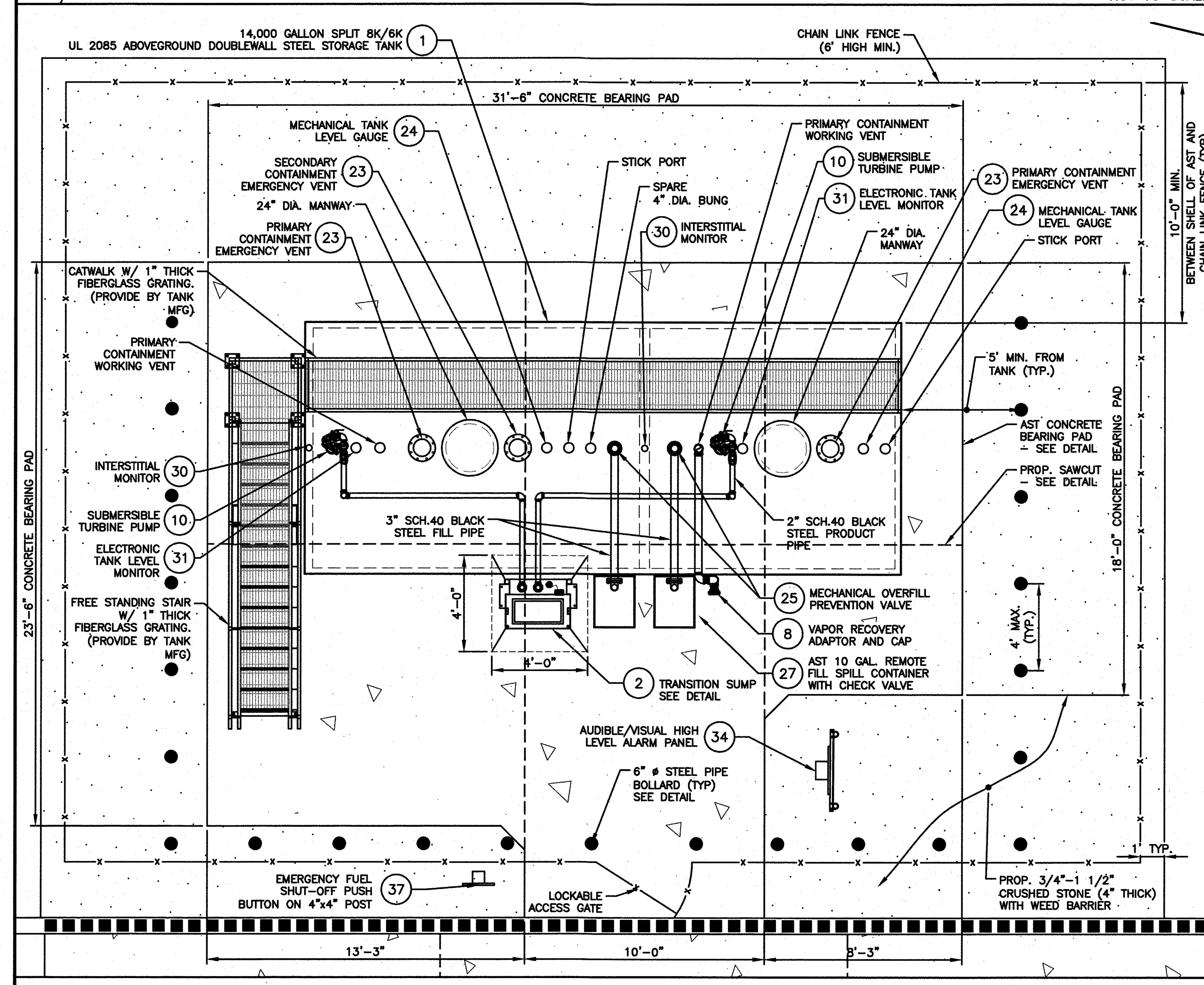
PROJECT NO. NEX-2300001

M-100

F:\Projects\NEX-2300001 - Hudson, NH - DPW\AST\2300001_AST Plans.dwg Tank & Piping Plan 6/22/23 4:57pm sbonfanti

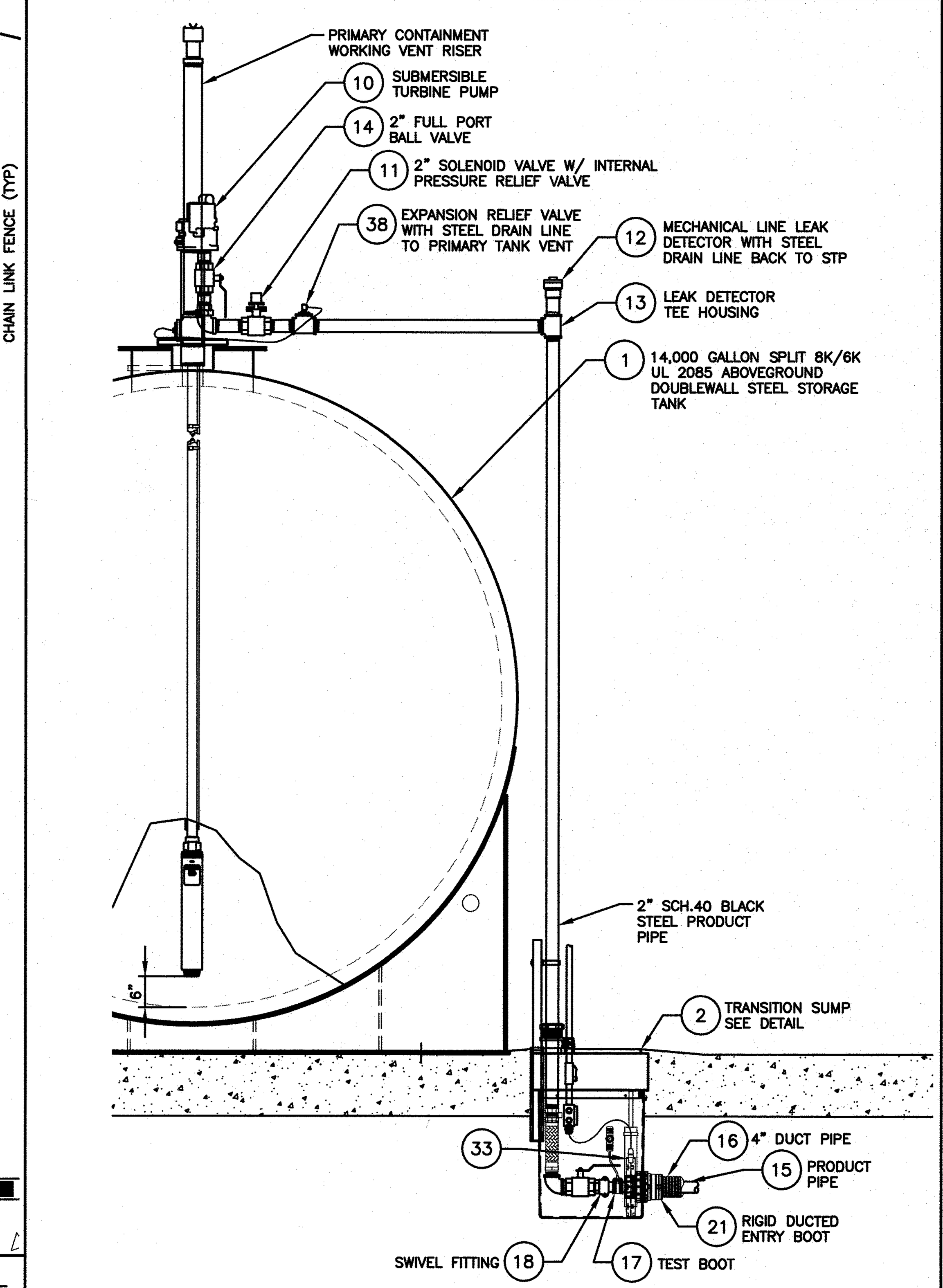
14,000 GAL. SPLIT ABOVEGROUND STORAGE TANK – PLAN VIEW

NOT TO SCALE



SUBMERSIBLE PUMP DETAIL

NOT TO SCALE



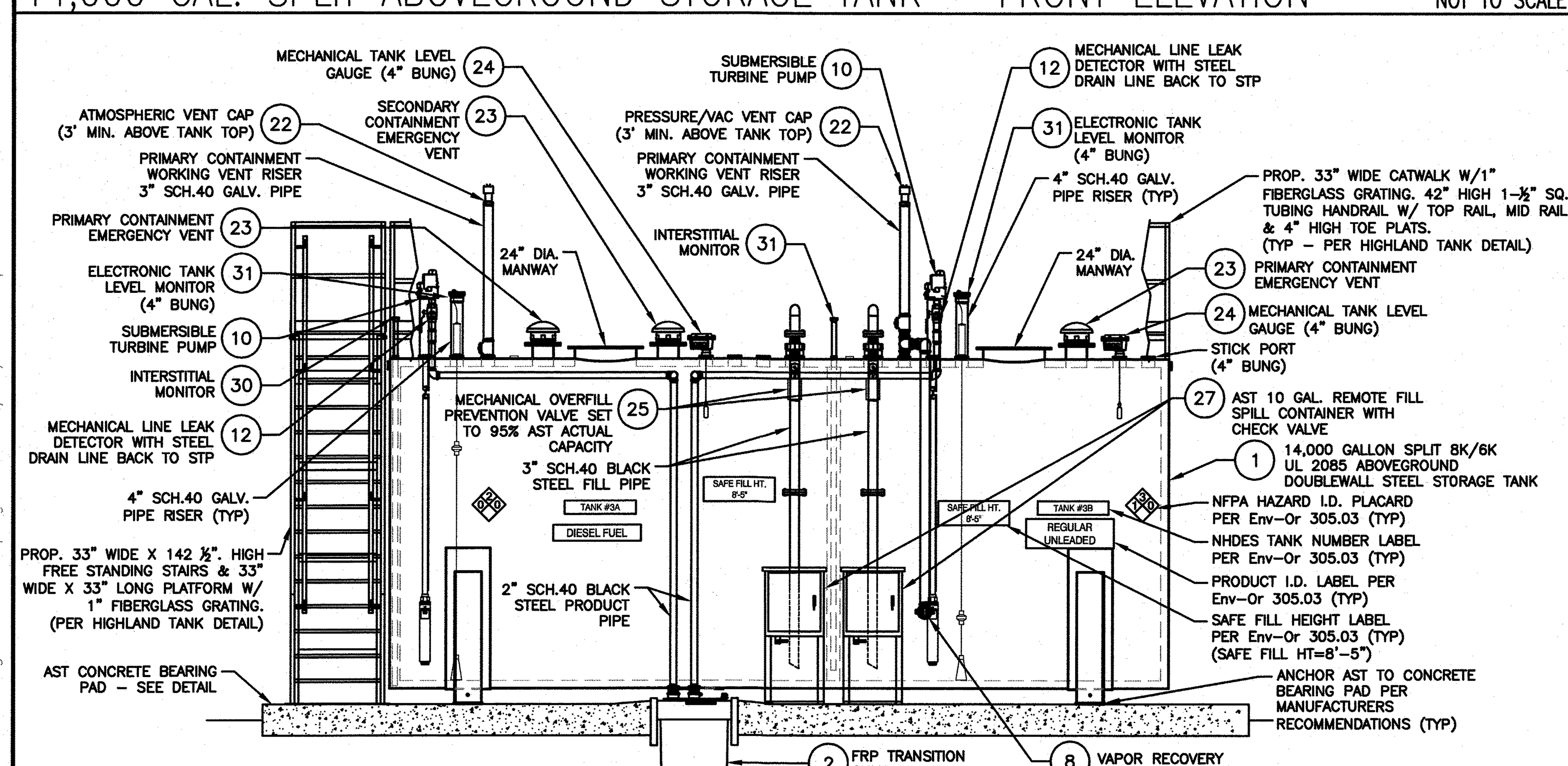
EQUIPMENT LIST

NOT TO SCALE

PART NO.	QTY.	ITEM	MAKE/MODEL	COMMENTS	BY
1	1	DW STEEL ABOVEGROUND STORAGE TANK	HIGHLAND TANK FIREGUARD	14,000 GAL. SPLIT 8K DIESEL/6K REG., UL 2085	OWNER
2	1	TRANSITION SUMP	BRAVO B-S01-S200	SW FRP SUMP w/ (1) 2" AST FITTIING	OWNER
3	2	DISPENSER	WAYNE SELECT (SHC) 3/G7227D/GJKM	SINGLE REMOTE MASTER DISPENSER w/HOSE MAST (LANE)	OWNER
4	GASOLINE HANGING HARDWARE				
	1	3/4" x 8.5' HOSE KIT	OPW VA-PK0400-075	INCL. WHIP, BREAKAWAY, HOSE, SWIVEL & NOZZLE	OWNER
	DIESEL HANGING HARDWARE				
	1	WHIP HOSE	VST V10CP-060-MRMS	1" x 5' CURB PUMP HOSE	OWNER
	1	BREAK-A-WAY	OPW 66-1300	1" SINGLE USE	
	1	HOSE	VST V10CP-120-MRMS	1" x 10' CURB PUMP HOSE	
	1	HOSE SWIVEL	OPW 4S-5075	1" MULTI-PLANE HOSE SWIVEL	
	1	NOZZLE	OPW 7H-0100	1" HEAVY DUTY, HIGH FLOW, AUTOMATIC SHUT-OFF	
5	2	DISPENSER SUMP	APT SINGLEWALL FIBERGLASS LMM-2715-S	CONDUITLESS (FOR WAYNE SELECT)	OWNER
6	6	STABILIZER BAR	APT SBK-3	(FOR WAYNE SELECT)	OWNER
7	6	PRODUCT CRASH VALVE	OPW #10BU-S92S	1-1/2" UNION TOP (OUTLET)	OWNER
8	1	3" VAPOR RECOVERY ADAPTER AND CAP	OPW #1611AV-1605/#1711T-708S-EVR		OWNER
9	2	FLEX CONNECTOR (TRANS. SUMP)	OPW FC20-SWM12	2" x 12"; FEMALE x MALE SWIVEL	OWNER
10	2	1-1/2 HP SUBMERGED TURBINE PUMP	FE PETRO STP1S0-VL2-12, 40201091	ADJUSTABLE (91"-152") - 12" RISER	OWNER
11	2	SOLONOID VALVE	MORRISON BROS. 710FSS2200 1V	2", NORMALLY CLOSED, SS	OWNER
12	1	DIESEL MECHANICAL LINE LEAK DETECTOR	FE PETRO STP-MLD+D 403170901		OWNER
	1	GAS MECHANICAL LINE LEAK DETECTOR	FE PETRO STP-MLD+G 403168901		OWNER
13	2	LEAK DETECTOR TEE HOUSING	FE PETRO 400S18001		OWNER
14	4	BALL VALVE	OPW 21BV0200SS	2", FULL PORT, SS	OWNER
15	100LF	PRODUCT PIPING	APT XP-17S-SC	1 3/4" DW POLYETHYLENE COAXIAL FLEX PIPE	GC
16	100LF	PRODUCT PIPING DUCT	APT DCT-400	4" CORRUGATED DUCT PIPE	GC
17	4	SECONDARY TEST BOOT	APT STB-17S	w/ APT BPT-175 BY-PASS TUBE	GC
18	4	SWIVEL PIPE FITTING	APT-MS-XP-17S-200		GC
19					OWNER
20	2	2" x 1-1/2" BLACK STEEL BUSHING			OWNER
21	4	SUMP PENETRATION FITTING	APT RDEB-17S-SC	SINGLEWALL DUCTED RIGID ENTRY BOOT	OWNER
22	1	DIESEL PRIMARY TANK VENT	MORRISON BROS. 3S4-0300 AV	3" ATMOSPHERIC UPDRAFT SLIP-ON	OWNER
	1	GASOLINE PRIMARY TANK VENT	OPW 723V-3203(EVR)	3" PRESSURE/VACCUM	OWNER
23	3	PRIMARY AND SECONDARY EMERGENCY VENT	MORRISON BROS. 244OM-0600AVEVR	8", 8 OZ. PRESSURE MALE THREADED EMERGENCY VENT	OWNER
24	2	MECHANICAL TANK LEVEL GAUGE	OPW 200TG-ENG		OWNER
25	2	MECH. OVEFILL PREVENTION VALVE	OPW 61FSTOP-30S0T	CARB APPROVED, 3" NPT WITH CYLINDERICAL FLOAT	OWNER
26	2	DROP TUBE	OPW 61FT-0312	3" x 12' ALUMINUM DROP TUBE FOR OPW 61FSTOP	OWNER
27	2	FREESTANDING REMOTE FILL CONTAINER	FAIRFIELD ARFP-2-T-LEGS	10 GAL., SS WITH QUICK DISCONNECT AND BALL VALVE	OWNER
28	1	FUEL MANAGEMENT SYSTEM	PETRO VEND 200		OWNER
29	1	ENVIRONMENTAL MONITORING CONSOLE	VEEDER ROOT TLS-4S0		OWNER
30	1	INTERSTITIAL MONITOR	VEEDER ROOT 794390-420	INTERSTITIAL SENSOR FOR STEEL TANKS	OWNER
31	2	TANK PROBE	VEEDER ROOT 846390-110	10'-6" MAG PLUS PROBE	OWNER
32	1	GASOLINE FLOAT KITS FOR PROBE	VEEDER ROOT 886100-001		OWNER
	1	DIESEL FLOAT KITS FOR PROBE	VEEDER ROOT 859080-001		OWNER
33	3	PIPING SUMP SENSOR	VEEDER ROOT 794380-208	FLOAT SWITCH	OWNER
34	1	HIGH LEVEL ALARM HORN/STROBE w/ ALARM ACKNOWLEDGEMENT SWITCH	VEEDER ROOT 790091-001 VEEDER ROOT 79009S-001	MOUNTED ON SUPPORT POSTS (SEE DETAIL) WITH WARNING SIGN	OWNER
35	2	ISLAND FORMS, DISPENSERS	BURTCO STAINLESS STEEL ISLAND FORMS	15'x3'x9" STAINLESS, 6" RADIUS	OWNER
36	31	6" PIPE BOLLARD	BURTCO STEEL STRAIGHT PIPE BOLLARD	S-1/2" I.D x 6" O.D. x 7' HIGH STEEL	OWNER
37	1	EMERGENCY STOP OPERATOR ASSEMBLY	POWER INTEGRITY #1A-ESOC	CONTRACTOR TO INSTALL ON 4"X4" POST	OWNER
38	2	1/2" EXPANSION RELIEF VALVE	MORRISON BROS. 78DI-0200AV		OWNER

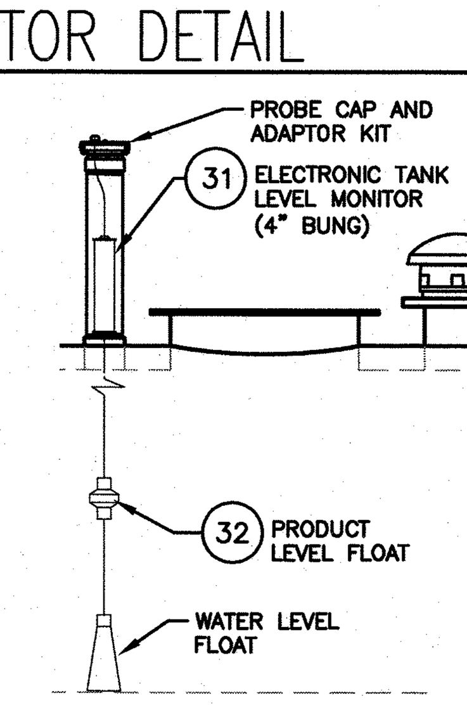
14,000 GAL. SPLIT ABOVEGROUND STORAGE TANK – FRONT ELEVATION

NOT TO SCALE



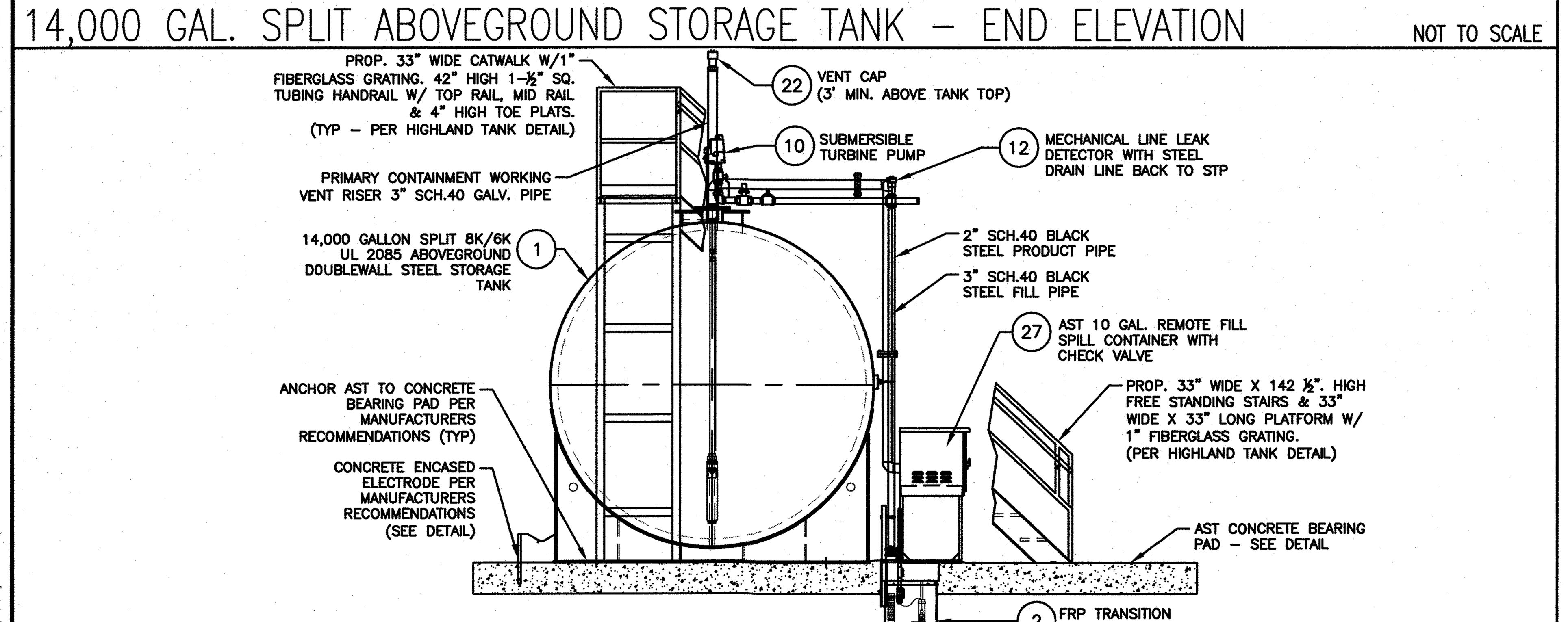
TANK LEVEL MONITOR DETAIL

NOT TO SCALE



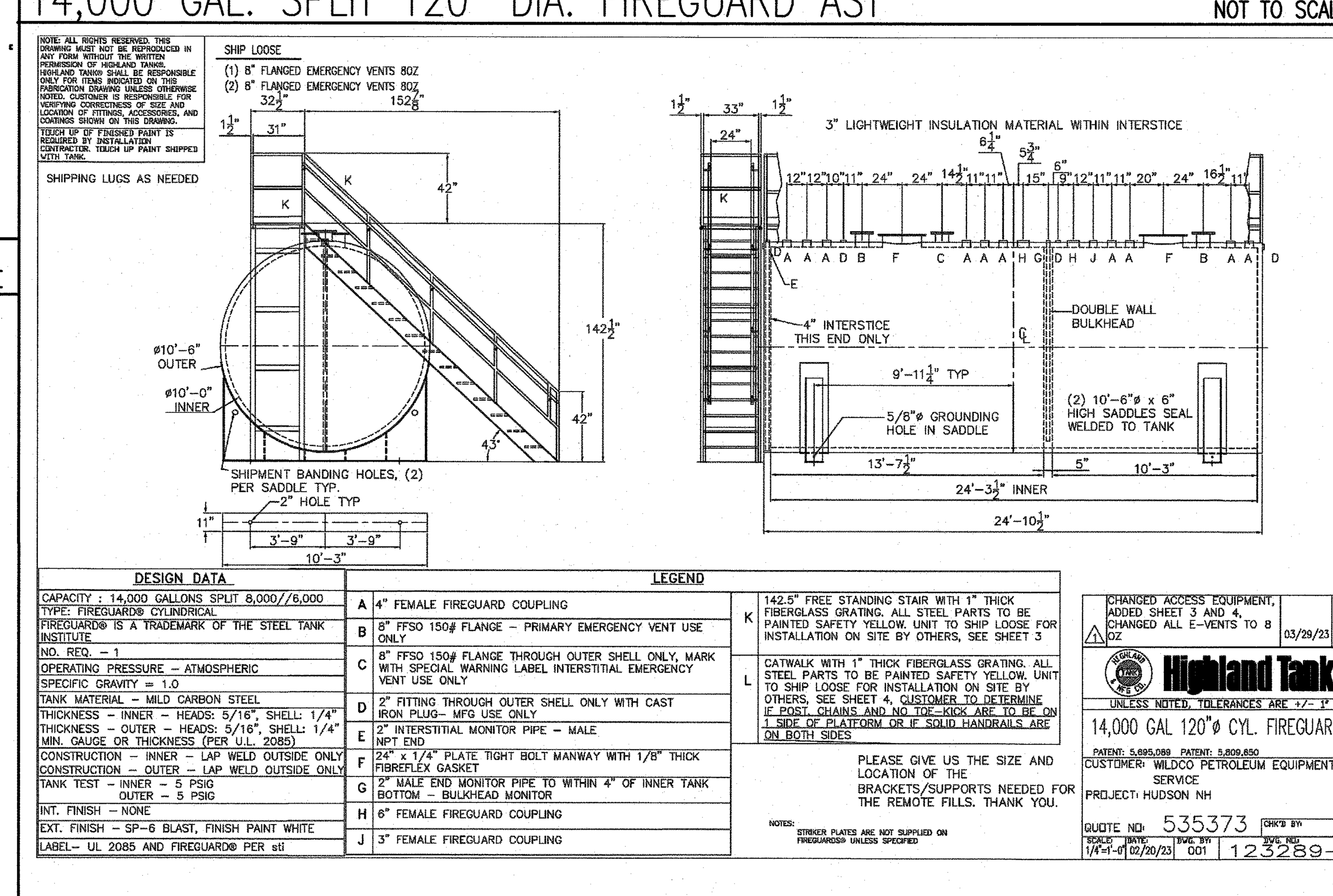
14,000 GAL. SPLIT ABOVEGROUND STORAGE TANK – END ELEVATION

NOT TO SCALE

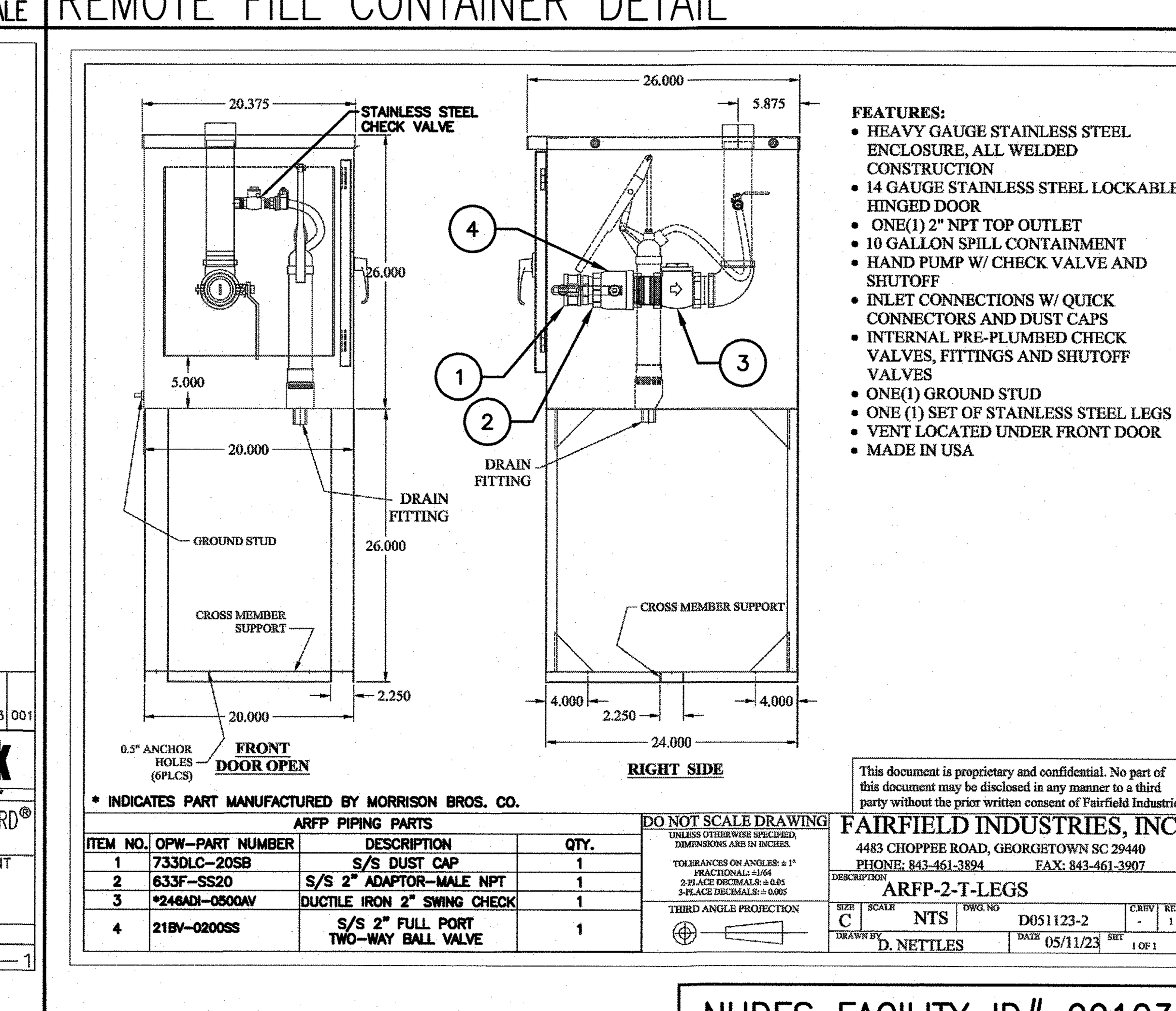


14,000 GAL. SPLIT 120" DIA. FIREGUARD AST

NOT TO SCALE



REMOTE FILL CONTAINER DETAIL



NHDES FACILITY ID# 991030A

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR

TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE
HUDSON, NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE — FRANK C. MONTEIRO — No. 7152 — LICENSED — PROFESSIONAL ENGINEER — 6/23/23

REVISIONS

NO.	REVISION	DATE
2	ISSUED FOR BID	6/23/23
1	ADDRESS NHDES COMMENTS	6/14/23

MAY 1, 2023

DRAWN/DESIGN BY	CHECKED BY
SJB/DJP	HS

TANK AND PIPING DETAILS

SCALE: AS SHOWN

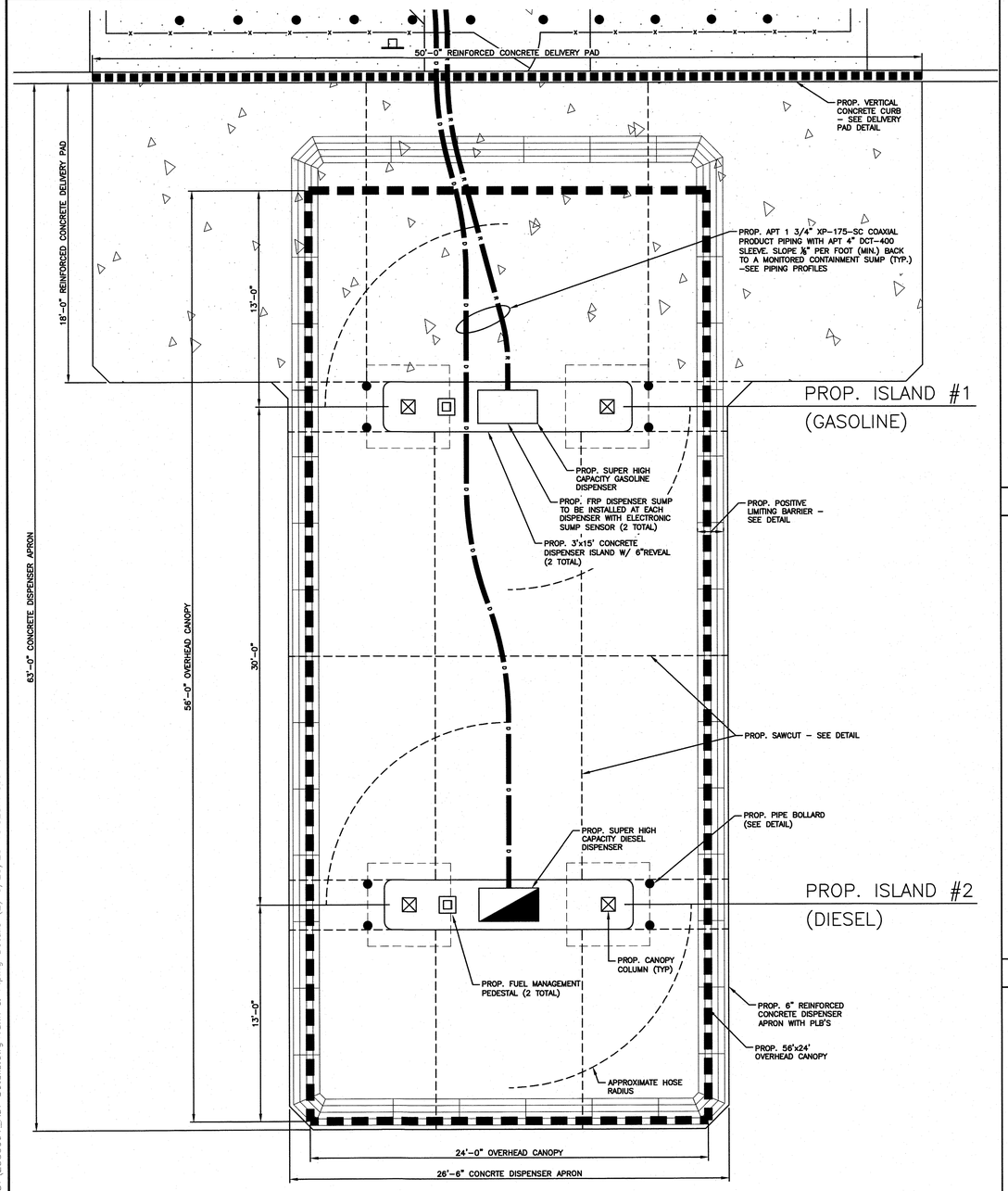
PROJECT NO. NEX-2300001

M-101

F:\Projects\NEX-2300001 – Hudson, NH – DPW\AST\2300001_AST Details.dwg Tank & Piping Details 6/22/23 4:57pm sbonfanti

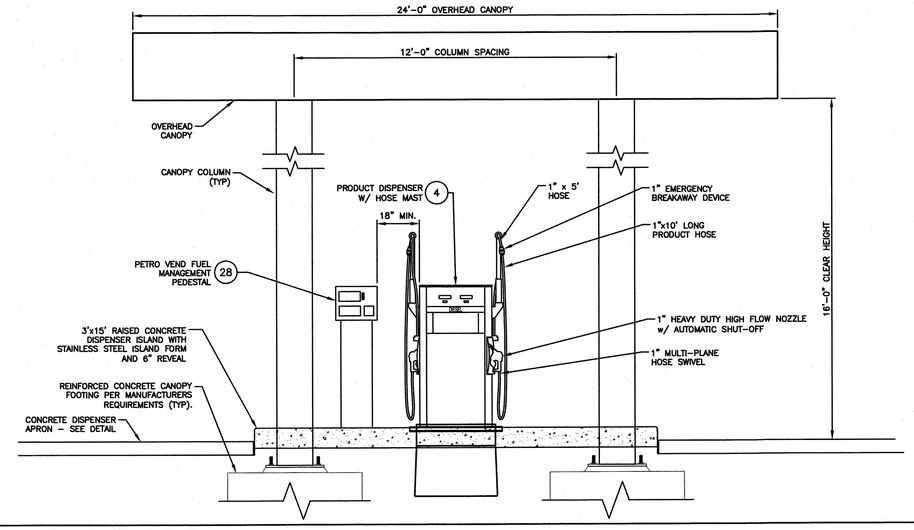
CONCRETE DISPENSER APRON – PLAN VIEW

NOT TO SCALE



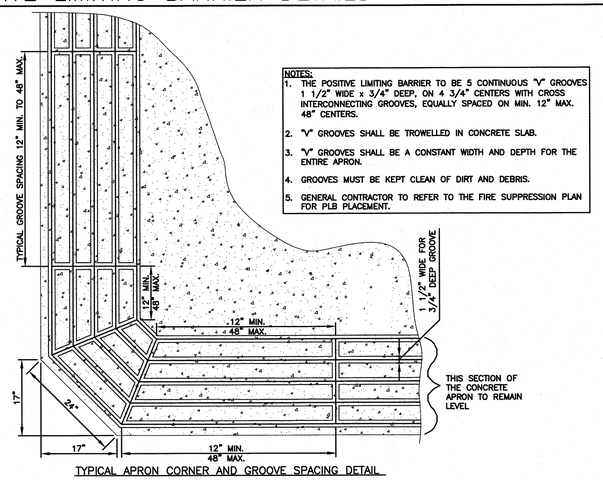
DISPENSER ISLAND ELEVATION (TYPICAL)

NOT TO SCALE



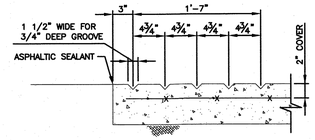
POSITIVE LIMITING BARRIER DETAILS

NOT TO SCALE



TYPICAL APRON CORNER AND GROOVE SPACING DETAIL

NOTES:
1. THE POSITIVE LIMITING BARRIER TO BE 5 CONTINUOUS "V" GROOVES 1 1/2" WIDE x 3/4" DEEP, ON 4 3/4" CENTERS WITH CROSS INTERCONNECTING GROOVES, EQUALLY SPACED ON MIN. 12" MAX. 48" CENTERS.
2. "V" GROOVES SHALL BE TROWELLED IN CONCRETE SLAB.
3. "V" GROOVES SHALL BE A CONSTANT WIDTH AND DEPTH FOR THE ENTIRE APRON.
4. GROOVES MUST BE KEPT CLEAN OF DIRT AND DEBRIS.
5. GENERAL CONTRACTOR TO REFER TO THE FIRE SUPPRESSION PLAN FOR PLB PLACEMENT.

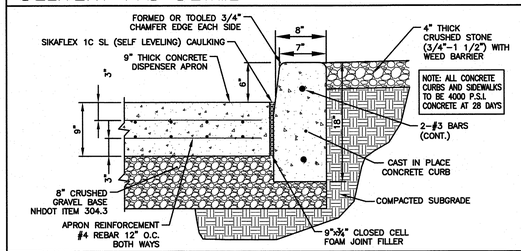


V-GROOVE EDGE OF SLAB SECTION

V-GROOVE INNER SLAB SECTION

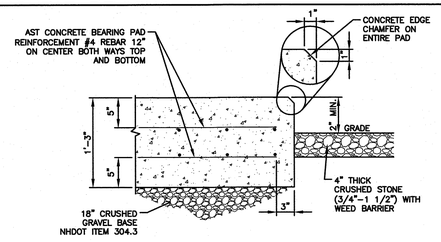
DELIVERY PAD DETAIL

NOT TO SCALE



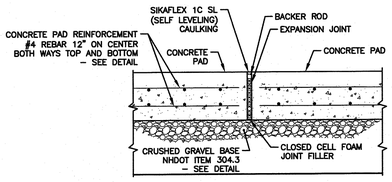
AST CONCRETE BEARING PAD

NOT TO SCALE



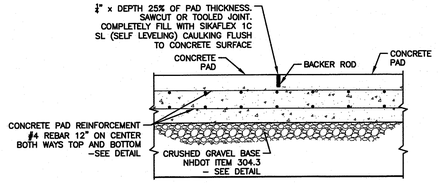
CONCRETE CONSTRUCTION JOINT DETAIL

NOT TO SCALE



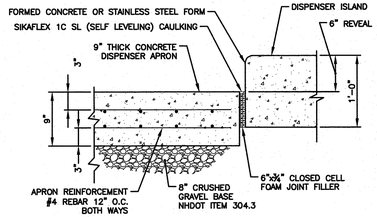
CONCRETE SAWCUT DETAIL

NOT TO SCALE



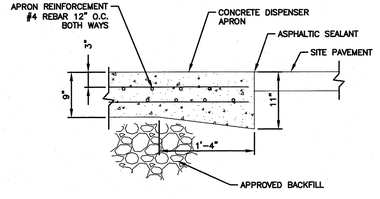
DISPENSER ISLAND/APRON DETAIL

NOT TO SCALE



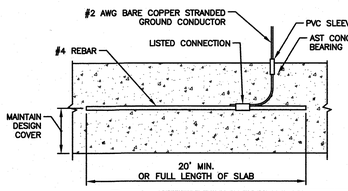
DISPENSER APRON EDGE DETAIL

NOT TO SCALE



CONCRETE ENCASED ELECTRODE

NOT TO SCALE



NHDES FACILITY ID# 991030A

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE
HUDSON, NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE
FRANK C. MONTEIRO No. 7462 LICENSED PROFESSIONAL ENGINEER
6/23/23

REVISIONS		
2	ISSUED FOR BID	6/23/23
1	ADDRESS NHDES COMMENTS	6/14/23
NO.	REVISION	DATE

MAY 1, 2023

DRAWN/DESIGN BY	CHECKED BY
SJB/DJP	HS

TANK AND PIPING DETAILS

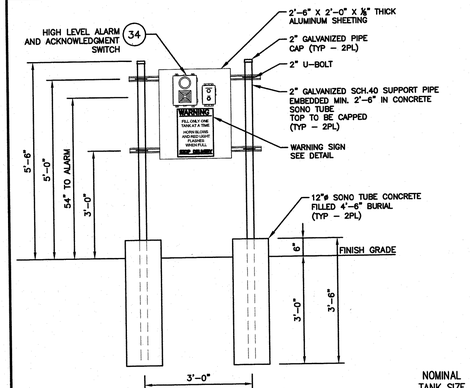
SCALE: AS SHOWN

PROJECT NO. NEX-2300001

M-102

OVERFILL ALARM

NOT TO SCALE



OVERFILL ALARM SUPPORT – ELEVATION

12"

WARNING

FILL ONLY ONE TANK AT A TIME

HORN BLOWS AND RED LIGHT FLASHES WHEN FULL

STOP DELIVERY

16"

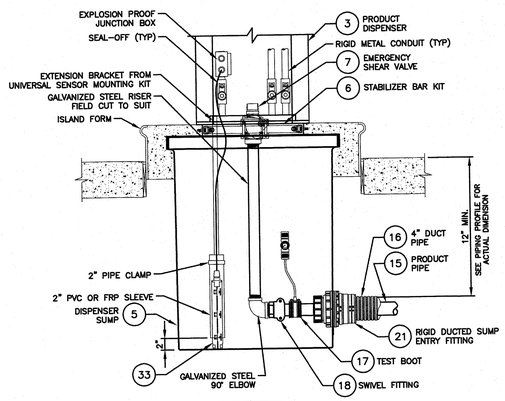
WARNING SIGN DETAIL

NOT TO SCALE

NOMINAL TANK SIZE (GAL)	ACTUAL VOLUME (GAL)	90% TANK CAPACITY (GAL)	HIGH LEVEL ALARM SETTING OFF BOTTOM OF FUEL TANK
8,000 DIESEL	7,980	7,182	8'-5"
6,000 REG. UNLEADED	6,022	5,419	8'-5"

DISPENSER SUMP PIPING ELEVATION

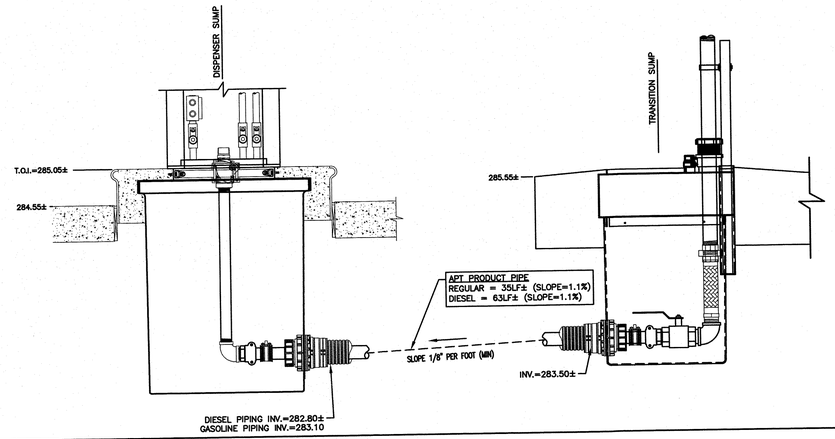
NOT TO SCALE



USE BLACK STEEL PIPE & FITTINGS FOR DIESEL PIPING.

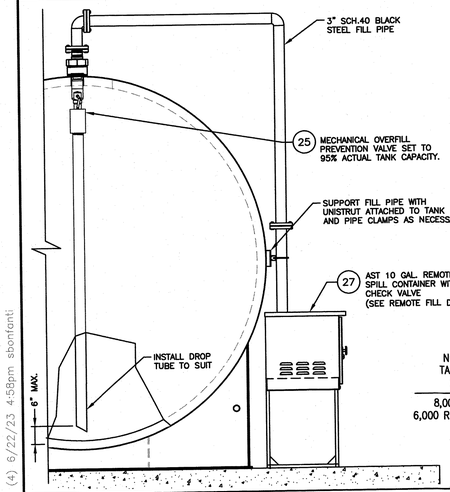
PRODUCT PIPING PROFILE

NOT TO SCALE



OVERFILL PREVENTION VALVE DETAIL (MECHANICAL)

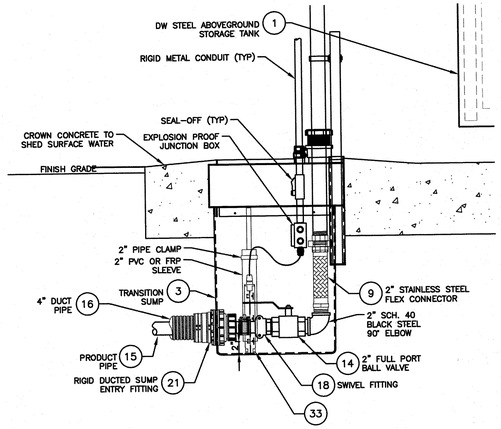
NOT TO SCALE



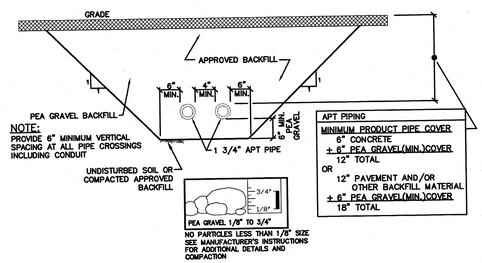
NOMINAL TANK SIZE (GAL)	ACTUAL VOLUME (GAL)	95% TANK CAPACITY (GAL)	SHUT OFF SETTING FROM BOTTOM OF FUEL TANK
8,000 DIESEL	7,980	7,581	9'-0"
6,000 REG. UNLEADED	6,022	5,720	9'-0"

TRANSITION SUMP DETAIL

NOT TO SCALE

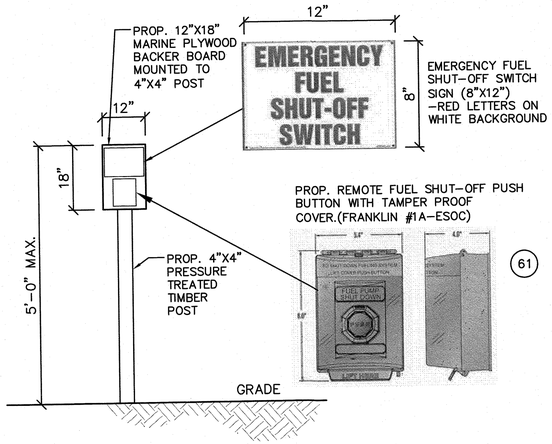


PIPING TRENCH DETAILS–APT PIPING



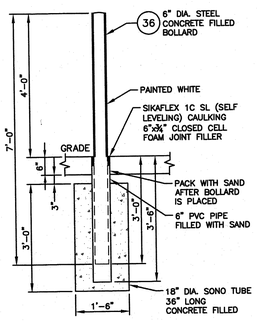
EMERGENCY STOP BUTTON DETAIL

NOT TO SCALE



PIPE BOLLARD DETAIL

NOT TO SCALE



PIPE BOLLARD

OVERFILL PROTECTION VALVE INSTALLATION INSTRUCTIONS

NOT TO SCALE

OPW Installation and Maintenance Instructions

OPW 61fSTOP-XXXXT Series Above Ground Storage Tank Overfill Prevention Valve

IMPORTANT: Please read these warnings and use the assembly instructions completely and carefully before starting. Failure to do so may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

IMPORTANT: The OPW 61fSTOP-*T Overfill Prevention Valve is pre-assembled for your convenience and ease of installation. Check to make sure the unit is intact and undamaged and all parts have been supplied. Never substitute parts for those supplied. Doing so may cause product failure.

WARNING-DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in a fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.
NOTE: At all times when product is in the storage tank keep the riser pipe capped, so the vapors cannot escape into the environment.

Notice: OPW products must be used in compliance with applicable federal, state, and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and material to be handled. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specification are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

Standard Product Warranty

OPW warrants that products sold by it are free from defects in materials and workmanship for a period of one year from the date of manufacture by OPW (ECO products two years from date of manufacture.) Proof of purchase may be required. As the exclusive remedy under this limited warranty, OPW, will at its sole discretion, repair, replace, or issue credit for future orders for any product that may prove defective within the one year date of manufacture period (repairs, replacements, or credits may be subject to prorated warranty for remainder of the original warranty period, complete proper warranty claim documentation required.) This warranty shall not apply to any product that has been altered in any way, which has been repaired by any party other than a service representative authorized by OPW, or when failure is due to misuse, or improper installation or maintenance. OPW shall have no liability whatsoever for special, incidental or consequential damages to any party, and shall have no liability for the cost of labor, freight, excavation, clean up, downtime, removal, reinstallation, loss of profit, or any other cost or charges.

For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND SPECIFICALLY THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

PRODUCT SPECIFICATIONS

Pressure Rating: 150PSI*
*OPW Does not recommend pumping pressures above 100PSI for Class 1B Fuels.
Flow Rate:
1000T and 2000T: 20GPM min to 150GPM max
3050T: 30GPM min to 400GPM max

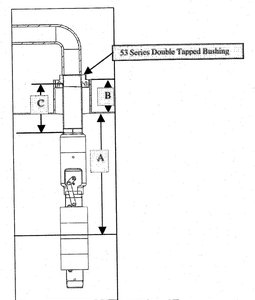


Figure 3: 61fSTOP-1000T/3050T Remote fill

Step 1:
Determine the necessary length (C) for the 2" (3" for 61fSTOP-3050T) nipple. The length can be found by first using the appropriate tank chart to find 10% of total tank capacity (A) and then measuring the length from the inside top of the tank to the top of the tank riser(B). The following equations will give the length necessary for the nipple for each type of overfill prevention valve. **(See Figure 3 or 4)**

61fSTOP	Equation
61fSTOP-1000T	*C=A+B-13"*
61fSTOP-2000T	*C=A+B-11"*
61fSTOP-3050T	*C=A+B-13"*

NOTE: Dimension A must be a minimum of 4" for 61FSTOP-2000T or 7" for the 61FSTOP-1000T or 61FSTOP-3050T. The float must have ample clearance to prevent striking against foreign objects or structures. If the float is obstructed the valve will not close resulting in a hazardous condition.

Step 2:
Cut and thread the 2" or 3" nipple to the length found in Step 1.

Step 3:
Apply pipe dope to one end of the nipple and thread into the top of the 61fSTOP. Pipe dope is to be a non-hardening, gasoline resistant pipe thread seal compound.

Step 4:
Apply pipe dope to the other end of the nipple and thread into the 53 Double Tapped Bushing. Pipe dope is to be a non-hardening, gasoline resistant pipe thread seal compound.

Step 5:
Set the assembly upright, lift and release the float to verify that the valve moves freely.

Step 6:
Apply pipe dope to the Double Tapped bushing and thread the assembly onto the tank. Pipe dope is to be a non-hardening, gasoline resistant pipe thread seal compound.

NHDES FACILITY ID# 991030A

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE
HUDSON, NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE – FRANK C. MONTEIRO No. 7162 LICENSED PROFESSIONAL ENGINEER – 6/23/23

REVISIONS		
2	ISSUED FOR BID	6/23/23
1	ADDRESS NHDES COMMENTS	6/14/23
NO.	REVISION	DATE

MAY 1, 2023

DRAWN/DESIGN BY	CHECKED BY
SJB/DJP	HS

TANK AND PIPING DETAILS

SCALE: AS SHOWN

PROJECT NO. NEX-2300001

M-103

ABBREVIATIONS

A	AMPERE(S)
AC	ALTERNATING CURRENT
ACC	AIR COOLED CONDENSING UNIT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
ASD	ADJUSTABLE SPEED DRIVE
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
B	BOILER
BKR	BREAKER
BLDG	BUILDING
C	CONDUIT
CB	CIRCUIT BREAKER
CCT	CIRCUIT
CKT	CIRCUIT
CLG	CEILING
COL	COLUMN
COMB	COMBINATION
CU	CONDENSING UNIT
△	DELTA CONNECTION
D	DEEP
DIA	DIAMETER
DN	DOWN
DP	DISTRIBUTION PANEL
DWG	DRAWING
E	EAST
EA	EACH
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ELEC	ELECTRIC(AL)
ELU	EMERGENCY LIGHTING UNIT
EM, EMER	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WALL HEATER
EXIST	EXISTING
F	FUSE(D)
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FC	FAN COIL UNIT
FIXT	FIXTURE
FLEX	FLEXIBLE
FLR	FLOOR
FLUOR	FLUORESCENT
FS	FOOD SERVICE
FURN	FURNISH(ED)
FUT	FUTURE
G	GROUND
GC	GENERAL CONTRACTOR
GEC	GROUNDING ELECTRODE CONDUCTOR
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
H	HIGH
HID	HIGH INTENSITY DISCHARGE
HO	HIGH OUTPUT
HOA	HAND-AUTO-OFF
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
IG	ISOLATED GROUND
I/L	INTERLOCK
J	JUNCTION
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERE
KW	KILOWATT(S)
LTG	LIGHTING
LT(S)	LIGHT(S)

MAX	MAXIMUM
MC	METAL CLAD
MCB	MAIN CIRCUIT BREAKER
MCM	THOUSAND CIRCULAR MILS
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MT	MOUNT
MTD	MOUNTED
N	NORTH, NEUTRAL
NAC	NOTIFICATION APPLIANCE CIRCUIT
NC	NORMALLY CLOSED, NURSE CALL
NEC	NATIONAL ELECTRICAL CODE
NF	NON-FUSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OH	OVERHEAD
OHD	OVERHEAD DOOR OPERATOR
OL	OVERLOAD
OO	ON-OFF
P	PANEL, POLE(S)
PB	PULL BOX, PUSHBUTTON
PF	POWER FACTOR
PH, Ø	PHASE
PL	PILOT LIGHT
PP	POWER POLE
PR	PAIR
PVC	POLYVINYL CHLORIDE
RA	RETURN AIR
REC	RECEPTACLE
RECEPT	RECEPTACLE
RP	REFRIGERATION POWER
RGS	RIGID GALVANIZED STEEL CONDUIT
RM	ROOM
RTH	RADIANT TUBE HEATER
RTU	ROOF TOP UNIT
S	SOUTH
SA	SUPPLY AIR
SCHED	SCHEDULE
SCP	SECURITY CONTROL PANEL
SEC	SECONDARY
SFL	SUB-FEED LUGS
SPC	SPACE
SPKR	SPEAKER
SPR	SPARE
SS	START-STOP
SW	SWITCH
TCP	TEMPERATURE CONTROL PANEL
TEL	TELEPHONE
TFL	THRU - FEED LUGS
TS	TIME SWITCH
T-STAT	THERMOSTAT
TTB	TELECOMM. TERMINAL BOARD
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
TYP	TYPICAL
U/C	UNDER CABINET
UG	UNDERGROUND
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
UV	UNIT VENTILATOR
V	VOLT(S)
VA	VOLT-AMPERE(S)
W	WATT, WEST, WIRE
W/	WITH
WCR	WITHSTAND CURRENT RATING
WH	WATER HEATER
WP	WEATHERPROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF
Y	WYE CONNECTION

RACEWAY SYSTEMS

- CONDUIT OR CABLE AS SPECIFIED
- CONDUIT OR CABLE TURNING UP
- CONDUIT OR CABLE TURNING DOWN
- CONDUIT STUB (REAMED, BUSHED AND OR CAPPED)
- CONNECTION TO EQUIPMENT
- CONDUIT CUT
- P/1,2,3 — HOMERUN TO PANELBOARD (PANEL AND CIRCUITS INDICATED)
- UE — UNDERGROUND ELECTRIC
- JUNCTION BOX, CLASS 1 DIV. 2 UON

DEVICES AND OUTLETS

NOTE:
- "G" INDICATES GROUND FAULT CIRCUIT INTERRUPTER

- DUPLEX RECEPTACLE - (18" AFF)

POWER DISTRIBUTION EQUIPMENT

- DISTRIBUTION PANELBOARD
- BRANCH CIRCUIT PANELBOARD (SURFACE MOUNT)
- GROUND ROD, 3/4"DIA. X 10'L COPPER CLAD STEEL

MOTORS AND CONTROLS

- ELECTRIC MOTOR (DESIGNATION INDICATED)

DRAWING LIST

NOTES TO ELECTRICAL SYMBOLS

1. ALL ABBREVIATIONS AND SYMBOLS MAY OR MAY NOT BE USED.
2. INDIVIDUAL CIRCUIT BREAKERS, SAFETY SWITCHES, STARTERS, AND THE LIKE: WHEREVER PRACTICABLE, MOUNT WITH CENTER LINE OF ENCLOSURE AT 60" AFF, BUT ADJUST AS NECESSARY SO THAT TOP OF ENCLOSURE IS AT MAXIMUM 72" AFF.
3. SOLID LIGHT/GRAY LINES: INDICATE EXISTING ELECTRICAL ITEMS TO REMAIN, UNLESS INDICATED OTHERWISE.
4. BLACK DASHED LINES: INDICATE EXISTING ELECTRICAL ITEMS TO BE REMOVED, UNLESS INDICATED OTHERWISE.
5. BLACK SOLID LINES: INDICATE NEW ELECTRICAL WORK, UNLESS INDICATED OTHERWISE.

LIGHTING

FIXTURE IDENTIFICATION

L1 ← FIXTURE TYPE INDICATED ADJACENT TO OR NEAR FIXTURE SYMBOL

FIXTURE TYPES

- LED CANOPY SURFACE LIGHT FIXTURE

LIGHTING CONTROLS

LINE VOLTAGE

- $ — SWITCH, 1-POLE - (48" AFF)
- $M — SWITCH SUBSCRIPTS: LOWER CASE LETTERS INDICATE CONTROL; M = MANUAL MOTOR STARTER
- PC — PHOTOCELL

FUEL TANK/DISPENSING SYSTEMS

- FSMS — FUEL SYSTEM MONITORING SYSTEM PANEL
- FOA — FUEL TANK OVERFILL ALARM STATION
- FD — FUEL DISPENSER
- FE — FIRE EXTINGUISHER
- FIT — FUEL ISLAND TERMINAL PEDESTAL
- FP — FUEL PUMP
- FS — FUEL LINE SOLENOID VALVE
- FEPO — FUEL SYSTEM EMERGENCY POWER OFF PUSH BUTTON - (54" AFG)
- LP — LEVEL PROBE
- DS — DISPENSER SUMP LEAK SENSOR
- IS — INTERSTITIAL SPACE LEAK SENSOR
- TS — TRANSITION SUMP LEAK SENSOR

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE
HUDSON, NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE — JOHN R. RAVENSMITTE — No. 16940 — LICENSED PROFESSIONAL ENGINEER

05/02/2023

REVISIONS		
NO.	REVISION	DATE

MAY 1, 2023

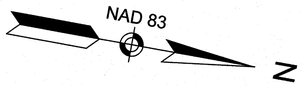
DRAWN/DESIGN BY	CHECKED BY
MDA/FR	HS

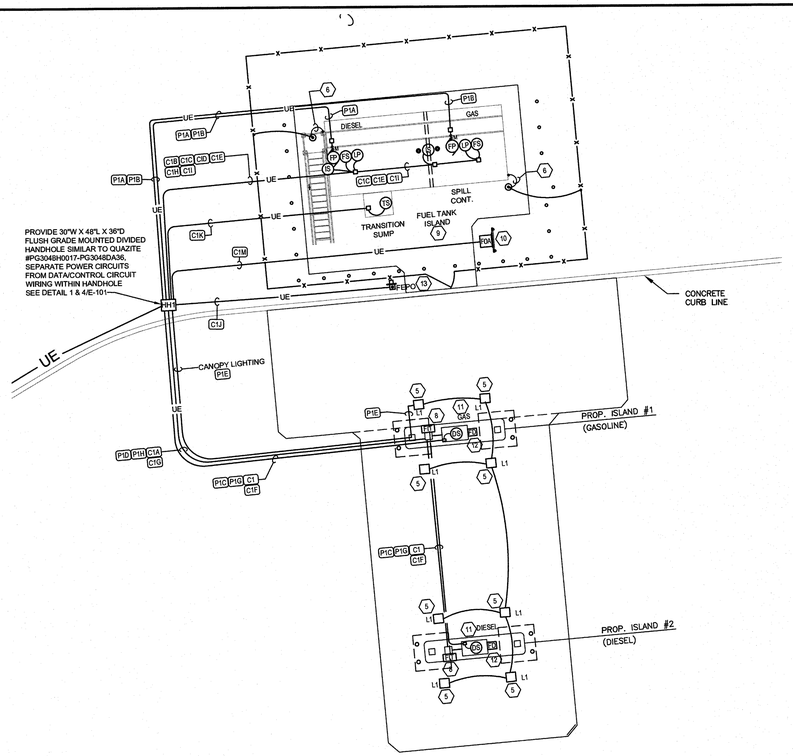
ELECTRICAL LEGEND & ABBREVIATIONS

SCALE: N.T.S

PROJECT NO. NEX-2300001

E-001



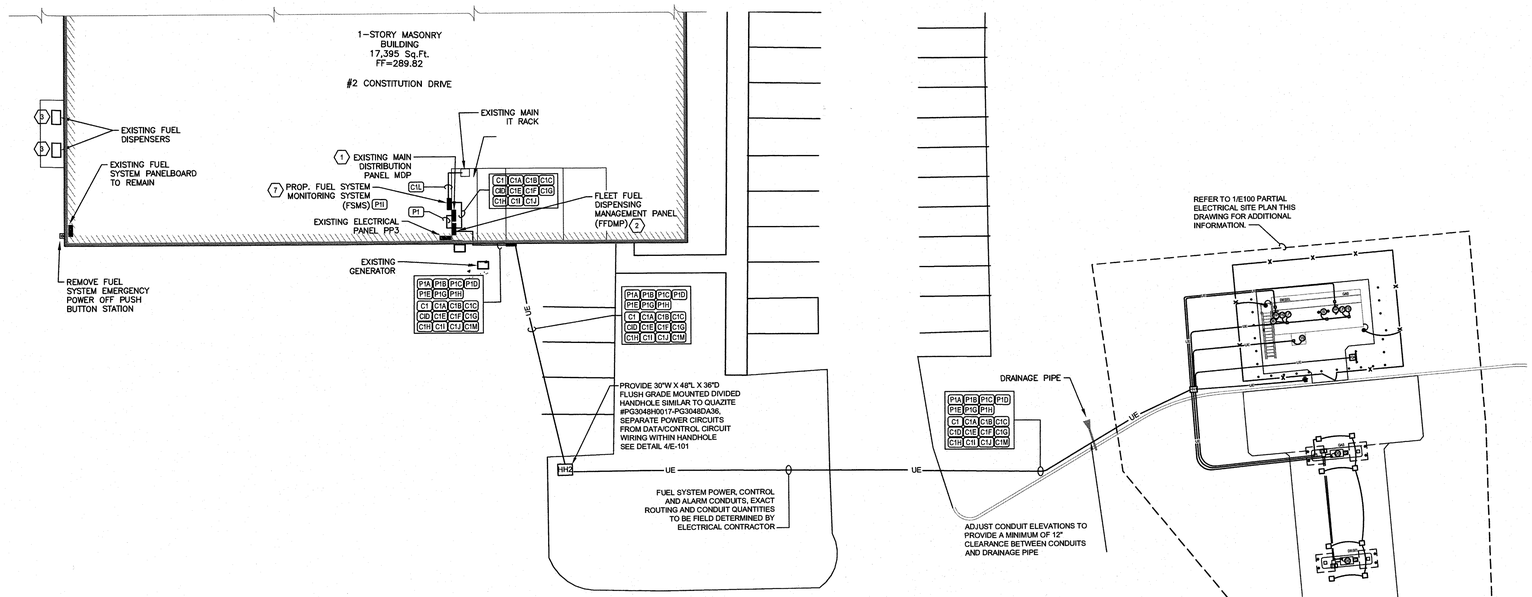


1 E-100 PARTIAL ELECTRICAL SITE PLAN

SCALE: 1" =10'

0 10 20 30 40

SCALE: 1" = 10'



2 E-100 PARTIAL ELECTRICAL SITE PLAN

SCALE: 1" =20'

0 20 50 100

SCALE: 1" = 20'

GENERAL NOTES

A. EXISTING UNDERGROUND UTILITY LINES: BEFORE DIGGING ON SITE, FIELDS VERIFY LOCATIONS FOR ALL EXISTING UNDERGROUND LINES AND STRUCTURES, AND PROTECT SAME.

B. COORDINATION: COORDINATE ALL ELECTRICAL SITE WORK WITH OTHER SITE AND UNDERGROUND UTILITY WORK. SEE SITE DRAWINGS FOR LAYOUT, GRADING, UTILITY WORK, ETC. ALSO COORDINATE ALL WORK WITH RESPECTIVE UTILITY COMPANIES SERVING THE FACILITY (AS APPLICABLE).

C. CONDUIT BURIAL DEPTH: INSTALL ALL UNDERGROUND ELECTRICAL CONDUITS AT 36" BELOW FINISH GRADE, UNLESS INDICATED OTHERWISE.

D. MINIMUM UNDERGROUND CONDUIT SIZE: ALL UNDERGROUND ELECTRICAL CONDUITS TO BE MINIMUM 3/4" SIZE, LARGER AS INDICATED OR REQUIRED.

E. SOLID LIGHT/GRAY LINES: INDICATE EXISTING ELECTRICAL ITEMS TO REMAIN, UNLESS INDICATED OTHERWISE.

F. BLACK SOLID LINES: INDICATE NEW ELECTRICAL WORK, UNLESS INDICATED OTHERWISE.

G. FUEL TANK ISLAND & FUEL DISPENSER ISLANDS: PROVIDE ALL CONDUITS AND WIRES PER FUEL SYSTEMS MANUFACTURES REQUIREMENTS. REFER TO "FUEL SYSTEM CIRCUIT SCHEDULE" ON DRAWING E-101 FOR ADDITIONAL WIRING REQUIREMENTS. ALL SUCH ELECTRICAL WORK TO COMPLY WITH CURRENT EDITIONS OF NEC AND, NFPA 30 - FLAMMABLE AND COMBUSTION LIQUIDS CODENFPA 30A - CODE FOR MOTOR FUEL DISPENSING FACILITIES. AND REPAIR GARAGES. ALL CONDUITS AND WIRING TO BE INSTALLED PER APPLICABLE REQUIREMENTS OF NEC AND NFPA 30A FOR CLASS I DIVISION 2 LOCATIONS. PROVIDE RATED CONDUIT SEAL-OFFS AT ALL CONDUIT STUB-UPS, PRIOR TO CONDUITS ENTERING EQUIPMENT, ETC.

H. FUEL SYSTEM SENSORS AND PROBES: PROVIDE NECESSARY CABLE CONNECTOR AT FINAL CONNECTION J-BOX, TO SUIT CABLE PROVIDED BY DIV. 23.

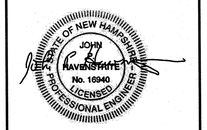
KEYED NOTES

1. EXISTING MAIN 120/208V, 3Ø, 4W DISTRIBUTION PANEL (MDP).
2. PROVIDE FLEET FUEL DISPENSING MANAGEMENT PANEL (FFDMP) AT LOCATION INDICATED.
3. DISCONNECT AND REMOVE ALL ELECTRICAL SERVICES TO FUEL DISPENSERS. REMOVE ALL ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.
4. DISCONNECT AND REMOVE ALL ELECTRICAL SERVICES TO FUEL TANKS. REMOVE ALL ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE. REMOVE EXPOSED PORTIONS OF UNDERGROUND CONDUIT TO 6" BELOW FINISHED GRAD, REMOVE ALL WIRING , CAP AND ABANDON BELOW GRADE CONDUIT.
5. LIGHTING FIXTURES TYPE "L1" TO BE CREE FIXTURE CAT #CPY250-C-8L-40K7-F-UL-DM-WH-10KV-PML(PHOTOCELL 7 MOTION SENSOR) PROGRAM FIXTURE TO TURN ON AT DUSK, OFF AFTER 5 MINUTES OF NO MOTION SENSED, FULL OFF AT DAWN.
6. 1#3/0 COPPER GROUND CABLE. CONNECT TO GROUNDING POINT ON TANK SADDLE AND TO BURIED 3/4"Ø X 10' COPPERWELD GROUND ROD, WITH TOP OF ROD 6" ABOVE CONCRETE PAD. BOND CHAIN LINK FENCE POST AND STAIR/WALKWAY SUPPORT COLUMN TO GROUND ROD WITH #6CU CONDUCTOR.
7. FUEL TANK MONITOR PANEL FURNISHED BY DIV. 23 CONTRACTOR INSTALLED AND WIRED BY EC. PROVIDE INDICATED 120V HARDWIRED CONNECTION FOR CONTROL POWER FROM EXISTING PANEL MDP (2#12, 1#12G IN 3/4"C. PROVIDE 1P-20AMP BREAKER AT POSITION #28 TO SERVE THIS PANEL). PROVIDE NEW CAT-6 CABLE CONNECTION TO EXISTING GARAGE NETWORK, OR RECONNECT TO EXISTING IF THERE IS ONE ALREADY. COORDINATE WITH TOWN OF HUDSON DPW IT DEPT.
8. WIRE FUEL DISPENSER MANAGER PANEL PER MANUFACTURES INSTRUCTIONS, COORDINATE WITH DIV. 23 CONTRACTOR TO OBTAIN ELECTRICAL ROUGH-IN REQUIREMENTS..
9. CONNECT ALL EQUIPMENT AND DEVICES FOR ABOVE GROUND FUEL TANK AS REQUIRED. COORDINATE CONDUIT ROUTINGS WITH FUEL TANK INSTALLER / VENDOR.
10. U-CHANNEL STAND AND EQUIPMENT PROVIDED BY DIV. 23. MAKE ALL ELECTRICAL CONNECTIONS AND PROVIDE RECEPTACLE AS REQUIRED.
11. CONNECT ALL EQUIPMENT AND DEVICES AT FUEL DISPENSER ISLAND AS REQUIRED BY FUEL DISPENSER INSTALLER / SUPPLIER.
12. TWIN HOSE FUEL DISPENSER.
13. PROVIDE FUEL SYSTEM "FEPO" STATION AND SIGN. PROVIDE CONCRETE FILLED 10' LONG x 4" DIAMETER RIGID STEEL POST (OR EQUIVALENT) WITH CAP. BURY POST 4' INTO 12" DIA. x 5' L BURIED CONCRETE BASE. MOUNT STATION AT 54" AFG.

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE
HUDSON, NEW HAMPSHIRE



05/02/2023

REVISIONS		
NO.	REVISION	DATE

MAY 1, 2023

DRAWN/DESIGN BY	CHECKED BY
SJB/DJP	HS

ELECTRICAL SITE PLAN

SCALE: AS NOTED

PROJECT NO. NEX-2300001

E-100

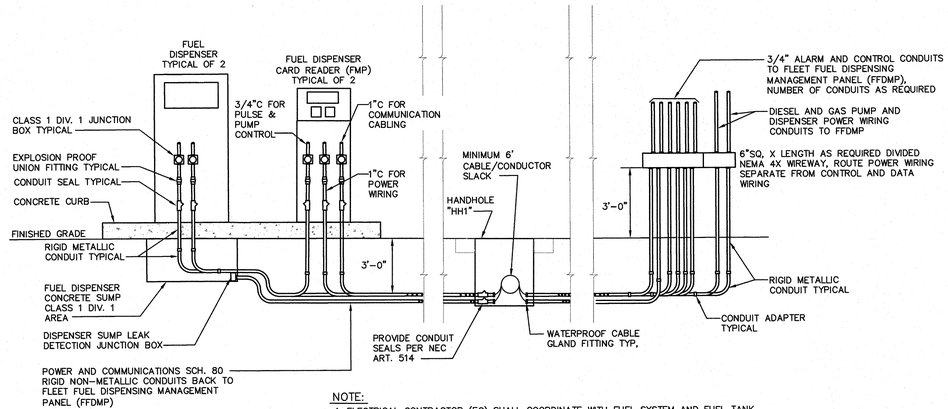
811 DigSafe MA-ME-NH-RI-VT

PANEL:	FFDMP, INTERNAL PANELBOARD			VOLTS, PHASE, WIRE:		120/208V, 3Ø, 4W + G			
LOCATION:	ELECTRIC ROOM			MAINS:		60A MCB			
MOUNTING:	WITH-IN FFDMP			SHORT CIRCUIT RATING:		10,000A			

CKT	LOAD DESCRIPTION	CONN LOAD KVA	WIRE SIZE	CB AMPS/ POLE	PHASE	CB AMPS/ POLE	WIRE SIZE	CONN LOAD KVA	LOAD DESCRIPTION	CKT
1	FUEL PUMP- GASOLINE	1.0	#6	20/2	A	20/2	#6	1.0	FUEL PUMP - DIESEL	2
3	-	1.0	#6	-	B	-	#6	1.0	-	4
5	V-SMART/OM CONTROL STAND BOX	0.5	#10	20/1	C	20/1	#10	0.5	FUEL DISPENSER - DIESEL	6
7	FUEL DISPENSER GAS	1.0	#10	20/1	A	20/1	#10	0.2	CANOPY LIGHTS	8
9	FUEL MANAGMENT SYSTEM (FMP)	-	-	20/1	B	20/1	-	-	SPARE	10
11	SPARE	-	-	20/1	C	20/1	-	-	SPARE	12

NOTE:

1. BRANCH CIRCUIT DISTRIBUTION SHALL BE PROVIDED INTEGRAL WITH FLEET FUEL DISPENSING MANAGEMENT PANEL (FFDMP).
2. PROVIDE HACR RATED BREAKERS FOR PUMPS AND DISPENSERS.

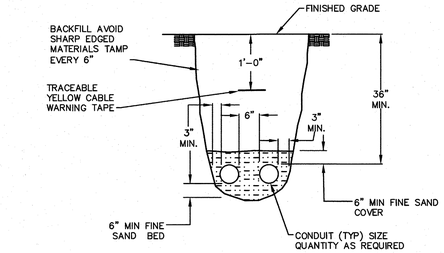


NOTE:

1. ELECTRICAL CONTRACTOR (EC) SHALL COORDINATE WITH FUEL SYSTEM AND FUEL TANK SUPPLIER FOR ALL ELECTRICAL ROUGH-IN REQUIREMENTS. EC TO PROVIDE THE REQUIRED CONDUITS AND WIRING.

1 E101 TYPICAL FUEL DISPENSER ROUGH-IN DETAIL

SCALE: NOT TO SCALE

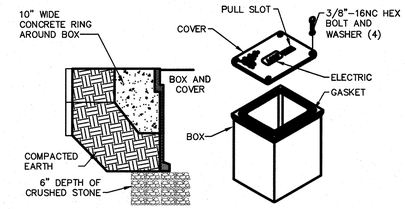


NOTE:

1. FOR STACKED CONDUITS MAINTAIN A MINIMUM VERTICAL DISTANCE OF 3" BETWEEN CONDUITS.

2 E101 ELECTRICAL TRENCH DETAIL

SCALE: NONE

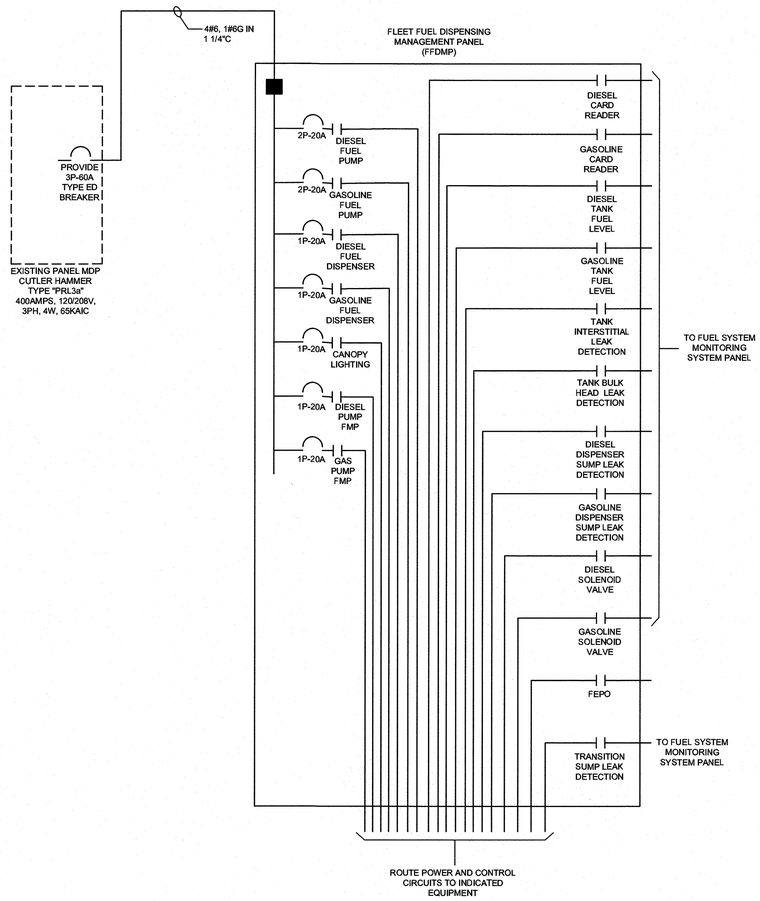


NOTES

1. REPLACE EXISTING SURFACE CONDITIONS IN KIND TO INCLUDE, BUT NOT LIMITED TO: CONCRETE, CRUSHED STONE, SELECT GRAVEL, ASPHALT CONCRETE, TOPSOIL AND GRASS.

4 E101 HANDHOLE "HH1 & HH2" INSTALLATION DETAIL

SCALE: NONE



3 E101 FUEL DISPENSING MANAGEMENT PANEL ONE LINE DIAGRAM (FFDMP)

SCALE: NOT TO SCALE

FUEL SYSTEMS CIRCUIT SCHEDULE

TAG	FROM	TO		FOR	CONDUIT & CONDUCTORS	NOTES
PWR.						
P1	MDP CKT 2,4,6	FFDMP		POWER FEEDER	1 1/4"C., 4#6 & 1#6G	
P1A	FFDMP	DIESEL TANK FUEL PUMP		FUEL PUMP & SOLENOID VALVE POWER- DIESEL	1"C., 3#6 & 1#10G	
P1B	FFDMP	GASOLINE TANK FUEL PUMP		FUEL PUMP & SOLENOID VALVE POWER- GASOLINE	1"C., 3#6 & 1#10G	
P1C	FFDMP	DIESEL FUEL DISPENSER		DISPENSER POWER	1"C., 2#8 & 1#8G	
P1D	FFDMP	GASOLINE FUEL DISPENSER		DISPENSER POWER	1"C., 2#8 & 1#8G	
P1E	FFDMP	FUEL CANOPY LIGHTING		LIGHTING FIXTURE POWER	3/4"C., 2#10 & 1#10G	
P1F	FFDMP	TANK MONITORING CONTROL PANEL		MONITORING TANK FUEL LEVELS, LEAK DETECTORS	1"C., CABLE(S) BY FUEL SYSTEM CONTRACTOR	SIZE CONDUIT PER NEC REQUIREMENTS
P1G	FFDMP	DIESEL FUEL MANAGEMENT SYSTEM (FIT)		DIESEL FUEL DISPENSER CARD READER (FIT)	3/4"C., 2#10 & 1#10G	
P1H	FFDMP	GASOLINEFUEL MANAGEMENT SYSTEM (FIT)		GASOLINE FUEL DISPENSER CARD READER (FIT)	3/4"C., 2#10 & 1#10G	
P1I	MDP CKT 30	FUEL SYSTEM MONITORING SYSTEM PANEL (FSMS)		120V FEED	3/4"C., 2#12 & 1#12G	
CONTROL						
C1	FFDMP VIA VEEDER-ROOT PANEL	DIESEL FUEL ISLAND TERMINAL (FIT)		ACTIVATION OF DIESEL DISPENSER	1"C., CABLE(S) BY FUEL SYSTEM CONTRACTOR	SIZE CONDUIT PER NEC REQUIREMENTS
C1A	FFDMP VIA VEEDER-ROOT PANEL	GASOLINE FUEL ISLAND TERMINAL (FIT)		ACTIVATION OF GASOLINE DISPENSER	1"C., CABLE(S) BY FUEL SYSTEM CONTRACTOR	SIZE CONDUIT PER NEC REQUIREMENTS
C1B	FFDMP VIA VEEDER-ROOT PANEL	J-BOX @ FUEL SOLENOID VALVE- DIESEL		SOLENOID VALVE POWER - DIESEL	3/4"C., 2#10 & 1#10G	
C1C	FFDMP VIA VEEDER-ROOT PANEL	J-BOX @ FUEL SOLENOID VALVE- GASOLINE		SOLENOID VALVE POWER - GASOLINE	3/4"C., 2#10 & 1#10G	
C1D	FFDMP VIA VEEDER-ROOT PANEL	FUEL TANK INTERSTITIAL SPACE LEAK DETECTOR		TANK LEAK DETECTION	LEAK SENSOR CABLE BY FUEL SYSTEM CONTRACTOR	SIZE CONDUIT PER NEC REQUIREMENTS
C1E	FFDMP VIA VEEDER-ROOT PANEL	FUEL TANK BULK HEAD INTERSTITIAL SPACE LEAK DETECTOR		BULK HEADLEAK DETECTION	LEAK SENSOR CABLE BY FUEL SYSTEM CONTRACTOR	SIZE CONDUIT PER NEC REQUIREMENTS
C1F	FFDMP VIA VEEDER-ROOT PANEL	DIESEL DISPENSER SUMP LEAK DETECTOR		DIESEL DISPENSOR LEAK DETECTION	LEAK SENSOR CABLE BY FUEL SYSTEM CONTRACTOR	SIZE CONDUIT PER NEC REQUIREMENTS
C1G	FFDMP VIA VEEDER-ROOT PANEL	GASOLINE DISPENSER SUMP LEAK DETECTOR		GASOLINE DISPENSOR LEAK DETECTION	LEAK SENSOR CABLE BY FUEL SYSTEM CONTRACTOR	SIZE CONDUIT PER NEC REQUIREMENTS
C1H	FFDMP VIA VEEDER-ROOT PANEL	DIESEL TANK LEVEL PROBE		DIESEL TANK LEVEL	3/4"C., CABLE(S) BY FUEL SYSTEM CONTRACTOR	LEVEL PROBE CABLE BY FUEL SYSTEM CONTRACTOR
C1I	FFDMP VIA VEEDER-ROOT PANEL	GASOLINE TANK LEVEL PROBE		GASOLINE TANK LEVEL	3/4"C., CABLE(S) BY FUEL SYSTEM CONTRACTOR	LEVEL PROBE CABLE BY FUEL SYSTEM CONTRACTOR
C1J	FFDMP	SYSTEM EMERGENCY POWER OFF PUSH BUTTON (FEPO)		EMERGENCY POWER AND CONTROL SYSTEMS OFF	3/4"C., 2#10 & 1#10G	
C1K	FFDMP VIA VEEDER-ROOT PANEL	TRANSITION SUMP		LEAK DETECTION	3/4"C., 2#10 & 1#10G	
C1L	FUEL SYSTEM MONITORING SYSTEM (FSMS)	EXISTING IT RACK		LOCAL BUILDING INTRANET AND INTERNET CONNECTIONS	1"C., (3)-CAT 6A CABLES.	
C1M	FFDMP VIA VEEDER-ROOT PANEL	FUEL TANK OVERFILL ALARM STATION		TANK OVERFILL	3/4"C., CABLE(S) BY FUEL SYSTEM CONTRACTOR	

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR

TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE
HUDSON, NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE — JOHN R. RAVENSMITH — No. 16940 — LICENSED PROFESSIONAL ENGINEER

05/02/2023

REVISIONS		
NO.	REVISION	DATE
MAY 1, 2023		

DRAWN/DESIGN BY	CHECKED BY
MDA/FR	HS

ELECTRICAL DETAILS & SCHEDULES

SCALE: N.T.S

PROJECT NO. NEX-2300001

E-101

ADDITIONAL FIXTURE INFO

CPY Series - Version C

CPY250® LED Canopy/Soffit Luminaire

Rev. Date: V4 07/11/2022

Product Description

The CPY250® LED Canopy/Soffit Luminaire has an extremely thin profile constructed of rugged cast aluminum. It can be surface mounted easily from below the canopy deck and can be pendant mounted. Direct imaging of the LEDs is eliminated with a highly efficient patterned flat or 0.91" (23mm) drop glass lens.
Applications: Petroleum canopies, CNG fueling stations, soffits

Performance Summary

Assembled in the USA by Cree Lighting from US and imported parts

Initial Delivered Lumens: Up to 21,000

Efficacy: Up to 165 LPW

CRI: Minimum 70 CRI (40K, 50K, 57K); 80 CRI (30K); 90 CRI (40K, 50K)

CCT: 3000K, 4000K, 5000K, 5700K

Limited Warranty†: 10 years on luminaire/10 years on Colorfast DeltaGuard® finish/5 years on PML sensor/up to 5 years for Synapse® accessories/1 year on field-installed accessories

IP66 Rated (select models only)

Class I, Division 2 Hazardous Location for select models

† See http://creelighting.com/warranty for warranty terms

Accessories

Field-Installed

Direct Mount Luminaires

Canopy Upgrade Kits (18 ga. steel, except where noted)
CPY-AP304* – for use with Cree Lighting CAN-304 luminaires, 16 ga. 5052 aluminum
XA-BXCCMW – for use with Jet-Philips, 21.60" (549mm) square, white
XA-BXCCNW – for use with Elsco Franciscan, 22.06" (560mm) square, white
XA-BXCCPW – for use with LSI Dakota or Masters, 22.50" (572mm) square, white
XA-BXCCQW – for use with Whiteway Riviera or Rig-A-Lite, 20.60" (523mm) square, white
XA-BXCCRW – for use with Elsco Merrit, 18.06" (459mm) square, white
XA-BXCCSW – for use with LSI Richmond or Whiteway Civic, 23.00" (584mm) L x 13.00" (330mm) W, white

Direct Mount Junction Box/Stem Kit
XA-BXCCJBOX – 6.0" (152mm) H x 3/4" (19mm) NPT Stem
- Watertight
- Rated for feed through 8 (4 in, 4 out) #12 AWG conductors

Direct Mount Beauty Plates
XA-BXCCBPW – 26.17" (665mm) Beauty Plate Only (18 ga. steel), white
XA-BXCCBPB12W – 26.17" (665mm) Beauty Plate (18 ga. steel) w/12" (305mm) Backer Plate (16 ga. steel), white
- For use in canopies where deck opening is larger than what is required for mounting the CPY250 luminaire. Maximum deck opening 10.75" x 15" (183mm x 375mm)
XA-BXCCBPB16W – 26.17" (665mm) Beauty Plate (18 ga. steel) w/16" (406mm) Backer Plate (16 ga. steel), white
- For use in canopies where deck opening is larger than what is required for mounting the CPY250 luminaire. Maximum deck opening 12" x 15" (305mm x 375mm)

Pendant Mount Luminaires

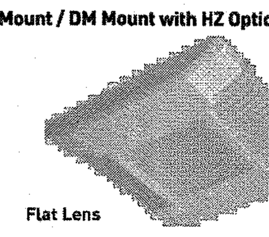
Pendant Mount Kits
XA-PS12KIT* – 5" (127mm) pendant
XA-PS18KIT* – 11" (279mm) pendant
XA-PS22KIT* – 15" (381mm) pendant
- Includes two conduit fittings and 3/4-14 NPT pipe threaded on two ends

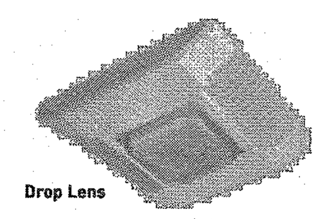
Hand-Held Remote
XA-SENSREM
- For successful implementation of the programmable multi-level option, a minimum of one hand-held remote is required

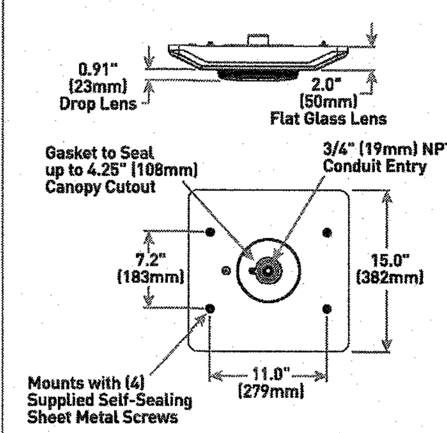
Synapse® SimplySnap 10V Interface
DIM10-220F
- 120V-277V
- Requires other Synapse components to complete system
- Refer to DIM10-220F spec sheet for details

* Must specify color: BK (Black), BZ (Bronze), SV (Silver) or WH (White)

DM Mount / DM Mount with HZ Option


Flat Lens


Drop Lens



Weight
12.5 lbs. (5.7kg)

Refer to Page 4 for additional mounts.

Ordering Information

Example: CPY250-C-13L-57K7-D-UL-DM-SV

CPY250	C								
Product	Version	Lumen Package*	CCT/CRI	Optic	Voltage	Mounting	Color Options	Controls	Options
CPY250	C	**2L** 2,000 Lumens **4L** 4,000 Lumens **8L** 8,000 Lumens **13L** 13,000 Lumens **21L** 21,000 Lumens	**30K8** 3000K, 80 CRI **40K7** 4000K, 70 CRI **40K9** 4000K, 90 CRI **50K7** 5000K, 70 CRI **50K9** 5000K, 90 CRI **57K7** 5700K, 70 CRI	**D** 0.91" (23mm) Drop Lens **F** Flat Lens	**UL** Universal 120-277V **UH** Universal 347-480V - Available only in 4L-21L lumen packages	**DM** Direct **HC** Hook & Cord **PD** Pendant **H6** Car Wash	**BK** Black **BZ** Bronze **SV** Silver **WH** White	**BLANK** Non-Dimming **10V** 0-10V Dimming - Control by others - Refer to Dimming spec sheet for details **PML** Programmable Multi-Level - Available with UL voltage only - Refer to PML spec sheet for details	**10KV 10kV/5kA Surge Suppression** - Replaces standard 6kV/3kA surge suppression - Not for use with PML as PML option includes10kV/5kA surge as standard **HZ Class I, Div. 2 Hazardous Location Certification** - Available with DM and PD mounts only - Not available with PML control or K option **K NSF 2 Certification** - Luminaires include NSF certification mark - Suitable for DM mount only - Not available with PML control or HZ option

* Lumen Package codes identify approximate light output only. Actual lumen output levels may vary depending on CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values.

US: creelighting.com T (800) 236-6800
Canada: creelighting-canada.com T (800) 473-1234

CREE LIGHTING

CPY250® LED Canopy/Soffit Luminaire - Version C

Product Specifications

CONSTRUCTION & MATERIALS
- Slim, low profile design
- Easy mounting and servicing from below the deck
- Luminaire housing is constructed of rugged cast aluminum with integral heat sink specifically designed for LED
- Flat lens is 0.125" tempered Solite® glass
- Drop lens is 0.157" molded borosilicate glass
- Direct mount is suitable for use in single or double skin canopies with a minimum 4.0" (102mm) wide panels and a minimum 22 gauge, 0.030" (0.7mm) canopy thickness
- Direct mount luminaire mounts directly to the canopy deck with the drilling of a single 2" to 4" (51mm to 102mm) round hole, is secured in place with self-sealing screws that provide a weathertight seal and includes 3/4" (19mm) conduit entry for direct wire feed
- Hook and cord mount includes a 3' (0.91m) cord out of the luminaire and is intended to hang from the single hook
- Standard pendant mount includes a mounting bracket and a J-Box for customer wiring and is intended to be mounted by 3/4 IP pendant (by others)
- Hazardous location pendant mount has a threaded hub which accepts 3/4" NPT conduit (by others) and secures with a 1/4"-20 set screw
- H6 mount includes cable gland with 3' (0.91m) cord out of the luminaire and is intended to hang from the single hook
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Black, bronze, silver and white are available
- **Weight:** 12.5 lbs. (5.7kg)

ELECTRICAL SYSTEM
- **Input Voltage:** 120-277V or 347-480V, 50/60Hz
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 6kV/3kA surge suppression protection standard; 10kV/5kA surge suppression protection optional
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current

CONTROLS
- 10V option provides continuous dimming to 10% with 0-10V DC control protocol
- **Maximum 10V Source Current:** 1mA
- Use only lighting controls with neutral connection or controls intended for use with LED fixtures
- Reference LED Dimming spec sheet for additional dimming information

REGULATORY & VOLUNTARY QUALIFICATIONS
- cULus Listed
- Suitable for wet locations when ordered with DM, DM mount w/HZ option, PD mount w/HZ option, and H6 mounts. Covered ceiling required only when not used with cULus Listed, wet location junction box or XA-BXCCJBOX accessory
- Suitable for damp locations when ordered with HC and PD mounts. Designed for indoor use only
- Enclosure meets IP66 requirements per IEC 60529 when ordered with DM and H6 mounts
- ANSI C136.2 6kV/3kA (standard) and 10kV/5kA (optional) surge protection, tested in accordance with IEEE/ANSI C62.41.2. PML option includes 10kV surge protection
- Meets FCC Part 15, Subpart B, Class A limits for conducted and radiated emissions
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Assembled in the USA by Cree Lighting from US and imported parts
- Meets Buy American requirements within ARRA
- RoHS compliant. Consult factory for additional details
- Class I, Division 2 Hazardous Location rated when ordered with the DM or PD mount and the HZ option. Not available with K or PML options. Rated for Groups A, B, C & D. Bears a T3C (160°C) temperature classification within a 25°C ambient
- NSF Certified when ordered with DM mount and K option. Not available with HZ or PML options. Refer to http://info.nsf.org/Certified/Food/ for additional details
- Dark Sky Friendly, IDA Approved when ordered with 30K CCT and Flat Lens (F). Please refer to https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/fsa-products/ for most current information
- DLC Premium qualified for Fuel Pump Canopies. DLC Standard qualified for High-Bay/Low Bay Luminaires when ordered with 8L and 30K8, 40K9 and 50K9 CCTs, 13L or 21L lumen packages with all CCTs. Please refer to https://qpl.designlights.org/solid-state-lighting for most current information
- **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – www.p65warnings.ca.gov

Electrical Data*

Lumen Package	System Watts 120-480V**	Total Current (A)					
		120V	208V	240V	277V	347V	480V
2L	14	0.11	0.07	0.06	0.05	N/A	N/A
4L	29	0.24	0.14	0.12	0.10	0.08	0.06
8L	53	0.45	0.26	0.22	0.19	0.15	0.11
13L	86	0.73	0.42	0.36	0.32	0.25	0.19
21L	132	1.13	0.64	0.56	0.49	0.38	0.28

* Electrical data at 25°C (77°F). Actual wattage may differ by +/- 10% when operating between 120-277V or 347-480V +/- 10%.
** 2L not available in 347-480V.

CPY Series (Version C) Ambient Adjusted Lumen Maintenance[1]

Ambient	Luminaire Mounting Surface	Initial LMF	25K hr Reported[2] LMF	50K hr Reported[2] LMF	75K hr Estimated[3] LMF	100K hr Estimated[3] LMF
5°C (41°F)	2L-13L Plywood/ 2L-21L Metal	1.02	0.99	0.96	0.94	0.92
	21L Plywood	1.02	0.99	0.96	0.93	0.90
10°C (50°F)	2L-13L Plywood/ 2L-21L Metal	1.02	0.98	0.96	0.93	0.91
	21L Plywood	1.02	0.98	0.95	0.92	0.90
15°C (59°F)	2L-13L Plywood/ 2L-21L Metal	1.01	0.98	0.95	0.93	0.91
	21L Plywood	1.01	0.98	0.95	0.92	0.89
20°C (68°F)	2L-13L Plywood/ 2L-21L Metal	1.01	0.97	0.95	0.92	0.90
	21L Plywood	1.01	0.97	0.94	0.91	0.89
25°C (77°F)	2L-13L Plywood/ 2L-21L Metal	1.00	0.97	0.94	0.92	0.90
	21L Plywood	1.00	0.96	0.94	0.91	0.88
30°C (86°F)	2L-13L Plywood/ 2L-21L Metal	0.99	0.96	0.94	0.91	0.89
	21L Plywood	0.99	0.96	0.93	0.90	0.87
35°C (95°F)	2L-13L Plywood/ 2L-21L Metal	0.99	0.95	0.93	0.91	0.88
	21L Plywood	0.99	0.93	0.89	0.84	0.80
40°C (104°F)	2L-13L Plywood/ 2L-21L Metal	0.98	0.95	0.92	0.90	0.88
45°C (113°F)	2L-4L Plywood/ 2L-13L Metal	0.98	0.93	0.89	0.86	0.82
50°C (122°F)	2L-4L Metal	0.97	0.90	0.84	0.78	0.73

[1] Lumen maintenance values at 25°C (77°F) are calculated per IES TM-21 based on IES LM-80 report data for the LED package and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors. Please refer to the Temperature Zone Reference Document for outdoor average nighttime ambient conditions.
[2] In accordance with IES TM-21, Reported values represent interpolated values based on time durations that are up to 6x the tested duration in the IES LM-80 report for the LED.
[3] Estimated values are calculated and represent time durations that exceed the 6x test duration of the LED.

Operating Temperature Range

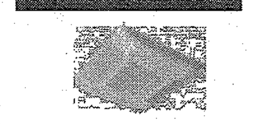
Lumen Package	Direct Mount to Plywood	Direct Mount to Sheet Metal/Suspended	Class 1, Division 2 Hazardous Location	
			Direct Mount to Plywood	Direct Mount to Sheet Metal/Suspended
2L	-40°C to +45°C	-40°C to +50°C	-40°C to +25°C	
4L	-40°C to +45°C	-40°C to +50°C		
8L	-40°C to +40°C	-40°C to +45°C		
13L	-40°C to +40°C	-40°C to +45°C		
21L	-40°C to +35°C	-40°C to +40°C		

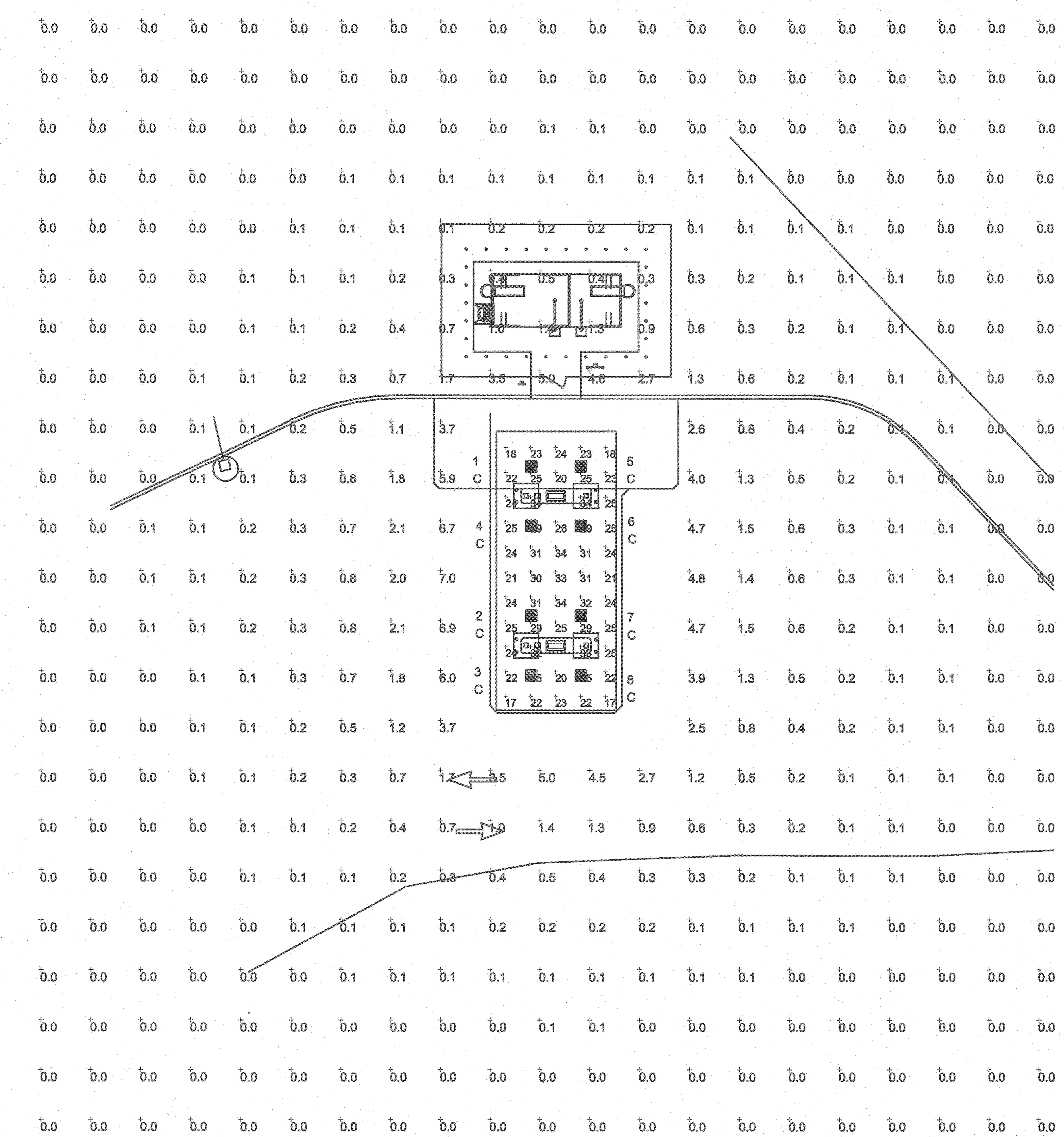
NOTE: Standard luminaires are UL rated at 40°C, and hazardous location luminaires are UL rated at 25°C, but will operate in the ambients listed above
WARNING: Exceeding maximum operating temperature may result in thermal foldback

US: creelighting.com T (800) 236-6800
Canada: creelighting-canada.com T (800) 473-1234

CREE LIGHTING

	QTY	LABEL	DESCRIPTION
CANOPY	8	C	CPY250-C-8L-40K7-F-UL-DM-XX





NOTE:
CANOPY HEIGHT ESTIMATED AT 18 FT.

LUMINAIRE LOCATION SUMMARY

LUM NO.	LABEL	MTG. HT.
1	C	18
2	C	18
3	C	18
4	C	18
5	C	18
6	C	18
7	C	18
8	C	18

FOOTCANDLE LEVELS CALCULATED AT GRADE USING INITIAL LUMEN VALUES

LABEL	AVG	MAX	MIN	AVG/MIN	MAX/MIN
CANOPY	25.64	34	17	1.51	2.00
UNDEFINED	0.38	7.0	0.0	N.A.	N.A.

LUMINAIRE SCHEDULE

SYMBOL	QTY	LABEL	ARRANGEMENT	LUMENS	LLF	BUG RATING	WATTS/LUMINAIRE	TOTAL WATTS	MANUFACTURER	CATALOG LOGIC
	8	C	Single	8475	1.020	B3-U0-G1	53	424	Cree Lighting	CPY250-C-8L-40K7-F-UL-DM-XX

REDLEONARD ASSOCIATES
1340 Kemper Meadow Dr, Forest Park, OH 45240
513-574-9500 | redleonard.com

REV.	BY	DATE	DESCRIPTION
R1	JAN	04/14/23	LOWERED LIGHTING LEVELS PER REQUEST

DISCLAIMER

ANY SITE PLAN(S), FLOOR PLAN(S), RENDERING(S), LIGHTING LAYOUT(S) AND PHOTOMETRIC PLAN(S) INCLUDING BUT NOT LIMITED TO ANY PROJECT(S) CREATED/PRODUCED BY RED LEONARD ASSOCIATES INC., ARE ONLY INTENDED FOR ILLUSTRATION AND QUOTING PURPOSES ONLY. RED LEONARD ASSOCIATES HAS THE RIGHT TO USE THIRD PARTY LASERS, SCANNERS, AND CAMERAS BUT ACTUAL PROJECT CONDITIONS, DIMENSIONS, AND ACCURACY OF MEASUREMENTS MAY DIFFER FROM THESE OR ANY PARAMETERS. RED LEONARD ASSOCIATES INC. ASSUMES NO LIABILITY FOR WHAT IS CREATED/PRODUCED IN THESE RECREATIONS. THIS INCLUDES BUT IS NOT LIMITED TO THE USE OF, INSTALLATION OF AND/OR INTEGRITY OF EXISTING BUILDING(S), SURROUNDING AREA FOR PRODUCT(S) SUCH AS EXISTING POLE(S), ANCHOR BOLT(S), BASE(S), ARCHITECTURAL AND SIGNAGE STRUCTURE(S), LANDSCAPING PLAN(S), LIGHTING PLAN(S), FIXTURE SELECTION(S) AND PLACEMENT, MATERIAL(S), COLOR ACCURACY, TEXTURE(S), AND ANYTHING ATTRIBUTED TO PHOTO REALISM THAT IS CREATED. FURTHERMORE, RED LEONARD ASSOCIATES INC., DOES NOT ASSUME LIABILITY WHATSOEVER FOR ANY PURCHASES MADE BY CLIENT BEFORE, DURING, OR AT THE CONCLUSION OF THE PUBLISHED WORK. THE CUSTOMER, ITS RELATIVE AFFILIATES, AS WELL AS ANY OTHER PERSON(S) IN VIEWING OF THIS PRODUCT IS RESPONSIBLE FOR VERIFYING COMPLIANCE WITH ANY BUT NOT LIMITED TO ALL CODES, PERMITS, RESTRICTIONS, INSTRUCTIONS, PURCHASES, AND INSTALLATIONS OF OBJECTS VIEWED WITHIN THIS DOCUMENT(S) OR PROJECT(S). SYMBOLS ARE NOT DRAWN TO SCALE. SIZE IS FOR CLARITY PURPOSES ONLY. SIZES AND DIMENSIONS ARE APPROXIMATE, ACTUAL MEASUREMENTS MAY VARY. DRAWINGS ARE NOT INTENDED FOR ENGINEERING OR CONSTRUCTION USE. THIS DOCUMENT, ANY RED LEONARD DRAWING(S), OR PROJECT(S) IS NOT TO BE USED AND/OR INTENDED FOR ENGINEERING OR CONSTRUCTION PURPOSES, BUT FOR ILLUSTRATIVE PURPOSES ONLY. ANY LOCATIONS OF EMERGENCY LIGHTING SHOWN WERE PROVIDED BY OTHERS. RED LEONARD ASSOCIATES IS NOT RESPONSIBLE FOR INSUFFICIENT LIGHTING DURING AN EMERGENCY EVENT. ANY USE OF THIS DOCUMENTATION AND/OR OTHER ARTICLES PRODUCED BY RED LEONARD WITHOUT WRITTEN AUTHORIZATION FROM JAYME J. LEONARD IS STRICTLY PROHIBITED.

SCALE: 1" = 20'
LAYOUT BY: JAN
DWG SIZE: D
DATE: 04/11/23

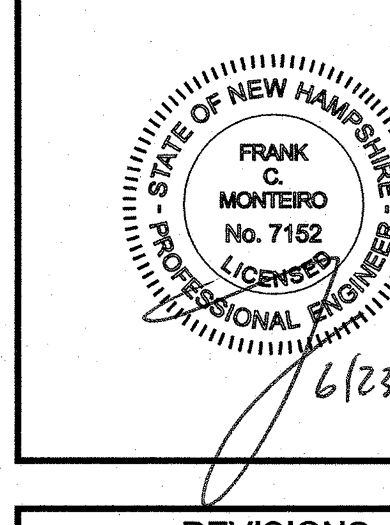
PROJECT NAME:
TOWN OF HUDSON
DEPT. PUBLIC WORKS
HUDSON, NH
DRAWING NUMBER:
RL-8759-S1-R1

NHDES FACILITY ID# 991030A

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE HUDSON, NEW HAMPSHIRE



REVISIONS

NO.	REVISION	DATE
1	ISSUED FOR BID	6/23/23

MAY 1, 2023

DRAWN/DESIGN BY	CHECKED BY
MDA/FR	HS

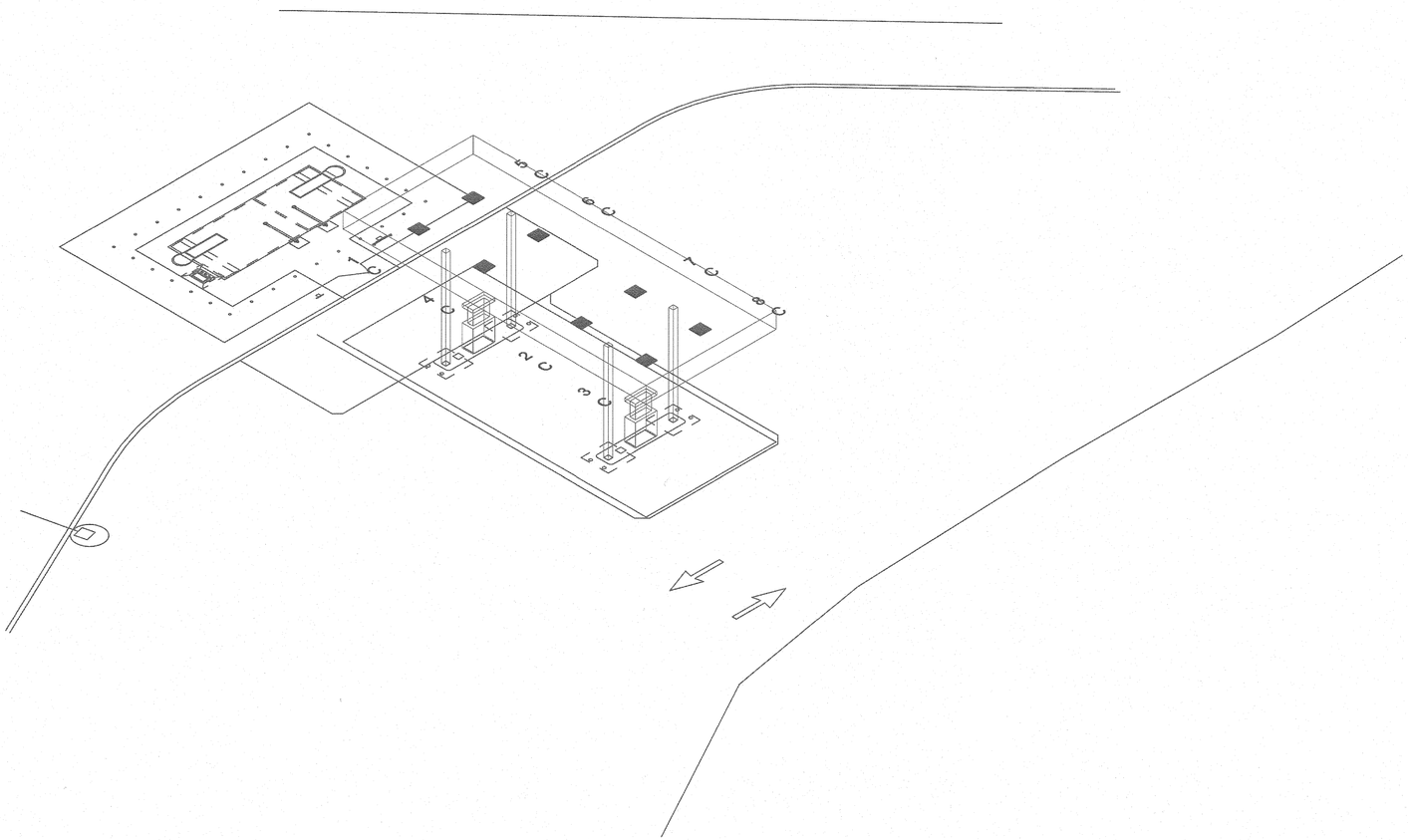
CANOPY LIGHTING PHOTOMETRIC PLAN

SCALE: 1"=20'

PROJECT NO. NEX-2300001

E-200

CANOPY	
	



GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR
TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE
HUDSON, NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE
FRANK C. MONTEIRO
No. 7152
LICENSED
PROFESSIONAL ENGINEER
6/23/23

REVISIONS		
1	ISSUED FOR BID	6/23/23
NO.	REVISION	DATE

MAY 1, 2023

DRAWN/DESIGN BY	CHECKED BY
MDA/FR	HS

CANOPY LIGHTING ISOMETRIC PLAN

SCALE: NOT TO SCALE

PROJECT NO. NEX-2300001

E-201

REDLEONARD ASSOCIATES
1340 Kemper Meadow Dr, Forest Park, OH 45240
513-574-8500 | redleonard.com

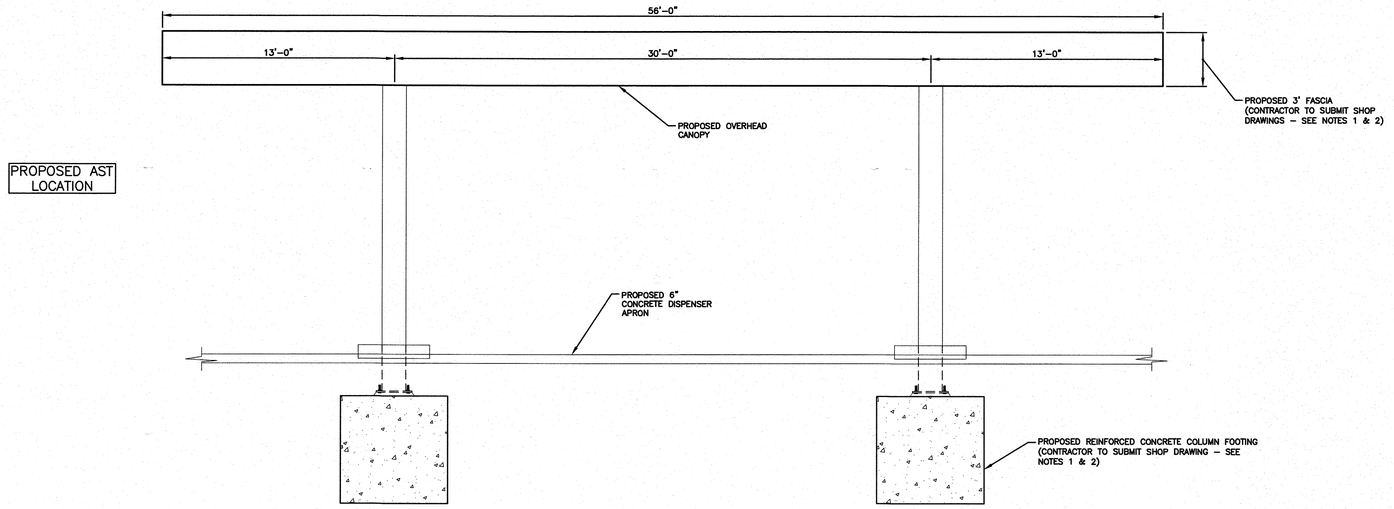
REV.	BY	DATE	DESCRIPTION
R1	JAN	04/14/23	LOWERED LIGHTING LEVELS PER REQUEST
.	.	.	.
.	.	.	.
.	.	.	.

SCALE: 1" = 20'
LAYOUT BY: JAN
DWG SIZE: D
DATE: 04/11/23

PROJECT NAME:
TOWN OF HUDSON
DEPT. PUBLIC WORKS
HUDSON, NH
DRAWING NUMBER:
RL-8759-S1-R1

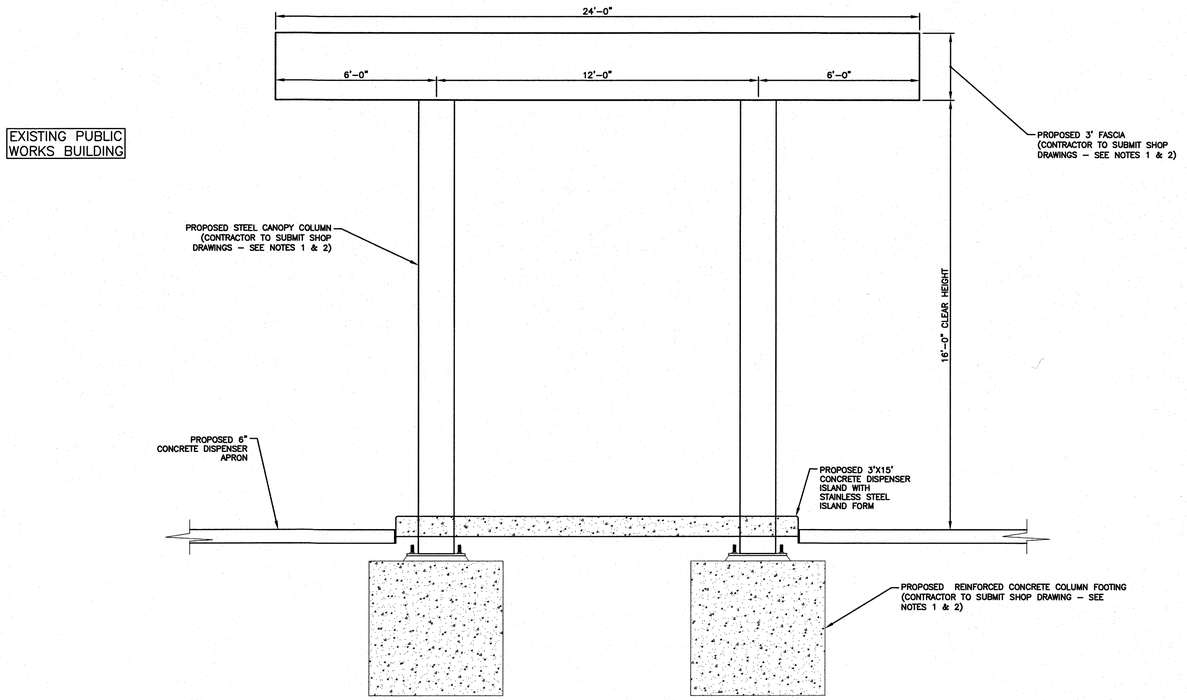
NHDES FACILITY ID# 991030A

F:\Projects\NEX-2300001 - Hudson, NH - DPW\CAD Files\2300001_LIGHTING.dwg E-201 6/22/23 4:58pm sbonferti



CANOPY SIDE VIEW

SCALE: 1/4" = 1"



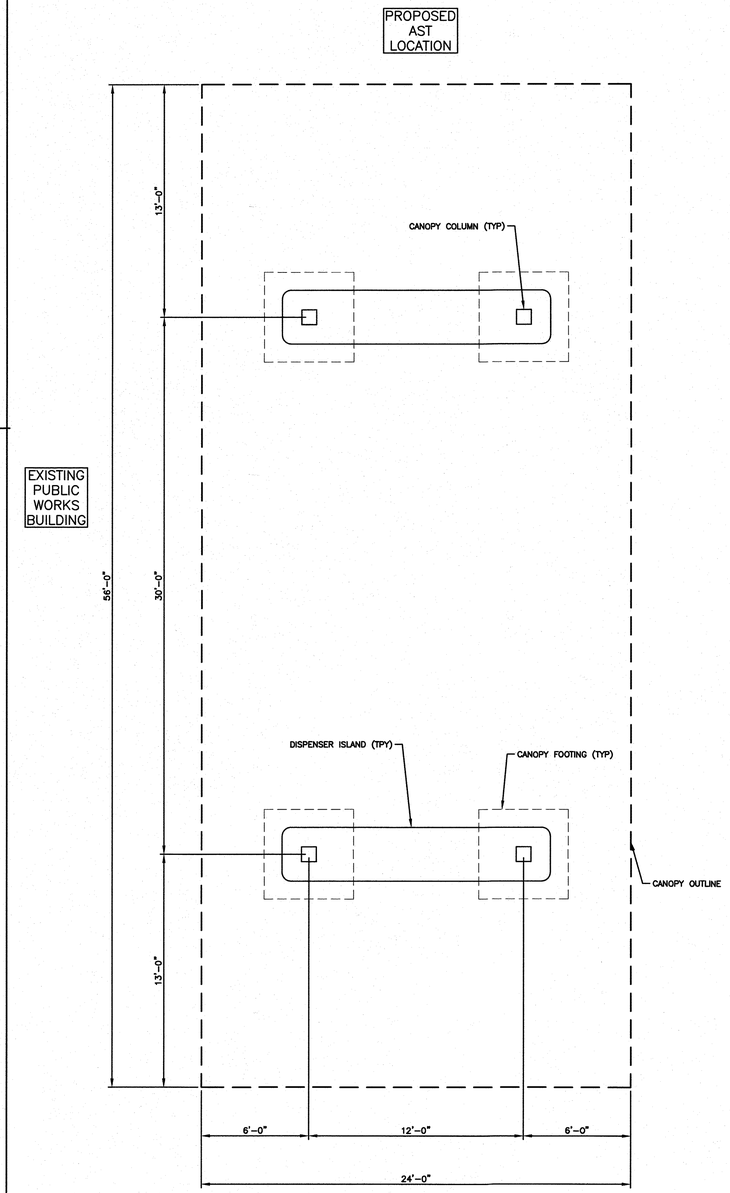
CANOPY FRONT VIEW

SCALE: 3/8" = 1"

NOTES:

1) THE CONTRACTOR SHALL DESIGN, FURNISH, ASSEMBLE AND INSTALL A FUELING CANOPY, INCLUDING CONCRETE FOOTINGS AND LIGHTING, IN ACCORDANCE WITH THE SIZE AND LINES INDICATED ON THE CONSTRUCTION DRAWINGS AS WELL AS SECTION 230000 OF THE TECHNICAL SPECIFICATIONS.

2) THE CONTRACTOR SHALL FURNISH AND INSTALL A FUELING CANOPY AND ASSOCIATED APPURTENANCES IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND THE APPROVED SHOP DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING DESIGN DRAWINGS, INCLUDING FOOTING DESIGN, SIGNED AND SEALED BY A NH LICENSED PROFESSIONAL ENGINEER, FOR APPROVAL WITHIN 21 DAYS OF THE CONTRACT AWARD.



CANOPY PLAN VIEW

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

NHDES FACILITY ID# 991030A

GPI Engineering Design Planning Construction Management
603.893.0720 GPINET.COM
Greenman-Pedersen, Inc.
44 Stiles Road, Suite One
Salem, NH 03079

PREPARED FOR

TOWN OF HUDSON
12 SCHOOL STREET
HUDSON, NH 03051

HUDSON PUBLIC WORKS DEPARTMENT
VEHICLE FUELING FACILITY
2 CONSTITUTION DRIVE
HUDSON, NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE – FRANK C. MONTEIRO No. 7152 LICENSED PROFESSIONAL ENGINEER
6/23/23

REVISIONS		
1	ISSUED FOR BID	6/23/23
NO.	REVISION	DATE

MAY 1, 2023

DRAWN/DESIGN BY	CHECKED BY
MDA/FR	HS

CONCEPTUAL CANOPY ELEVATIONS

SCALE: AS SHOWN

PROJECT NO. NEX-2300001

S-100