

TOWN OF RIDGEFIELD
Office of the Facilities Director

RIDGEFIELD, CONNECTICUT

***Energy Conservation & Building
Maintenance***

***Parks and Recreation Center HVAC Renovations;
190 Danbury Road, Ridgefield, Connecticut
Bid by Invitation***

April 2019

DETAILED SPECIFICATIONS:

BIDDING REQUIREMENTS

PROJECT DESCRIPTION

Plans



**RUDY MARCONI
FIRST SELECTMAN**

Bid Number 20-17

LEGAL NOTICE

INVITATION to BID

The **Town of Ridgefield** invites all interested parties to submit sealed bids on the following:

BID DUE DATE: Thursday, April 23, 2020

BID DUE TIME: 11:00 AM

BID ITEM: Parks & Recreation Center HVAC Roof Top Unit Replacment

BID NUMBER: 20-17

Terms and conditions as well as the description of items being bid are stated in the specifications. **Specifications may be obtained at the following address:**

**Town of Ridgefield
Jacob Muller
400 Main Street
Ridgefield, CT 06877
203 - 431 – 2720**

The return bid must be sent via FAX or email to the below contact:

**TOWN OF RIDGEFIELD
DIRECTOR OF PURCHASING
BID NUMBER: 20-17
400 MAIN STREET
RIDGEFIELD, CT. 06877**

Bids must be received no later than the date and time stated above at the Purchasing Director's via FAX or email only. If you do not have fax or email access, please see contact information below. **For further information**, please call **Jacob Muller** at **(203) 431-2720** or E-Mail at **purchasing@ridgefieldct.org**

Results may be viewed at www.ridgefieldct.org in the Purchasing Section under Departments after the bid opening.

TOWN OF RIDGEFIELD CONNECTICUT

BOARD OF SELECTMEN

INSTRUCTIONS TO BIDDERS

1. Submit proposals; via FAX or email only in response to the COVID-19 public health emergency. Contact information as follows; email: purchasing@ridgefieldct.org and/or FAX (203) 431-2723
2. Withdrawals of or amendments to bids received later than the time and date specified for bid opening will not be considered.
3. The Board of Selectmen of the Town of Ridgefield reserves the right to accept or reject any or all options, bids or proposals; to waive any technicality in any bid or part thereof, and to accept any bid deemed to be in the best interest of the Town of Ridgefield, Connecticut.
4. Bidders may be present at the opening of bids.
5. Bids may be held by the Town of Ridgefield for a period not to exceed forty-five (45) days from the opening of bids for the purpose of reviewing bids and investigating the qualifications of bidders prior to the awarding of the contract.
6. Insurance requirements, if any, must be submitted with the bid. This includes any Hold Harmless requirements as well as Certificates of Insurance for the full amounts specified. **Unauthorized changes** to these forms, i.e. adding, striking out and/or changing any words, language or limits **will cause the bidder to be disqualified**.

Please Note: Certificates of Insurance, if required, MUST name the Town of Ridgefield as **Additional Insured**. Failure to do so will mean disqualification from the Bid. There will no exceptions.

7. **Permits:** It is the Contractor's responsibility to obtain any necessary permits prior to the start of construction. All work shall be completed in compliance with the latest edition of the prevailing fire prevention and building codes in effect in the State of Connecticut, the latest edition of the State of Connecticut Department of Transportation Standard

Specifications for Roads, Bridges and Incidental Construction, Town of Ridgefield Road Construction Standards, or as set forth in these specifications.

8. **Emergency Work:** The Contractor shall file with the Engineer a telephone number of a person authorized by him who may be contacted regarding emergency work at the job site that may be required during non-working hours for reasons of public safety. The person shall be readily available and have full authority to deal with any emergency that may occur.
9. **Sales Tax:** In accordance with the provisions of Special Act No. 77-98, as amended, and Section 12-412(a) of the Connecticut General Statutes, sales of tangible personal property and services to the Town are not subject to the Connecticut Sales and Use Tax, and such tax shall not be included as part of the bid.
10. **Bidding Schedule:**
 - All Pre-Bid Site Walks will be held by appointment only, please contact Craig Arsenault at (203) 241-8921 to schedule an appointment.
 - All Request for Information are due Tuesday, April 14, 2020
 - Bids due (via FAX or email) on April 23, 2020 at 11:00 AM, complete instructions listed in the Invitation to Bid.
11. **Contractor's Qualification Statement:** The Contractor's Qualification Statement must be filled out as part of the bid package and the experience and references listed therein will be one to the determining factors in the awarding of the bid.
12. **Hold Harmless Agreement:** In order for the bid to be considered valid, the Contractor **must** sign the enclosed hold harmless agreement. Bids submitted without the signed hold harmless agreement will be rejected.
13. **Prevailing Wage Rates:** This project **is** subject to the State of Connecticut's prevailing wage rates.
14. **SBE/MBE and Contract Compliance Requirements:** This project **is not** subject to the State of Connecticut SBE/MBE set aside and contract compliance requirements.
15. **Time of Completion:** All work must be completed within **90 days** from receipt of the notice to proceed.
16. **Omitted:**

17. **Bonds:** A Payment and Performance bond in the full amount of the Proposal will be required of the successful bidder. The bond must be in the form of a surety bond of a type satisfactory to the Town of Ridgefield. All sureties must be listed on the most recent IRS Circular 570. The bond shall be delivered to the Office of the Facilities Director before commencing the work.
18. **Bid Bond:** A Bid Bond in the amount 5% of the base bid in a format similar to that required for both the payment and performance bonds is required.
19. **Project Location:** The project is located at the Parks and Recreation Center, 195 Danbury Road.
20. **Questions:** regarding bid procedures and technical specifications should be directed via email to Jacob Muller, Director of Purchasing, purchasing@ridgefieldct.org.
21. **Bid Submissions:** The following items shall be submitted for a bid to be considered complete:
 - (a) Executed proposal sheets, pages P-1 to P-3
 - (b) Executed Hold Harmless Agreement
 - (c) Executed Anti-Fracking Waste Ordinance Acknowledgment Form
 - (d) Certificates of Insurance in conformance to Item 6 above
 - (e) Contractor's List of Subcontractor's (if none, state none)
 - (f) Contractor's Qualification Statement
 - (g) Bid Bond in the amount of 5% of the base bid

Supplemental Information for Bidders and General Contract Provisions

1. PREPARATION OF PROPOSALS

Proposals must be made upon forms contained herein or as directed elsewhere. The blank spaces in the Proposal must be filled in correctly where indicated. The Bidder must state the prices for which he proposes to do each item of the work contemplated. In case of discrepancy where both words and the numerals are requested, the words shall govern. Ditto marks are not considered writing or printing and shall not be used. The Bidder shall sign his Proposal correctly. If the Proposal is made by an individual, his name, post office addresses and telephone number must be shown. If made by a firm, partnership, or corporation, the Proposal must be signed by an official of the firm, partnership, or corporation authorized to sign contracts, and must show the post office address and telephone number of the firm, partnership, or corporation. Failure to do so may disqualify the bid.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the Bidder, post office address, bid number, and name of the project for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed to: The Director of Purchasing, Town Hall, 400 Main Street, Ridgefield, CT 06877.

All information shall be entered in ink or by typewriter. Mistakes may be crossed out and corrections inserted before submission of your bid. The person signing the bid shall initial corrections in ink.

Corrections and/or modifications received after the closing time specified will not be accepted.

2. SUBMISSION OF PROPOSALS

Descriptive literature containing complete specifications must accompany each bid. If a bidder wishes to furnish additional information, more sheets may be added.

3. INCURRING COSTS

The Town of Ridgefield is not liable for any cost incurred for the preparation of proposals or submission of samples by the firms submitting proposals for the work requested in this bid document or request for proposals.

4. FAMILIARITY WITH THE WORK

Each bidder is considered to have examined the work to fully acquaint him with the exact existing conditions relating to the work and has fully informed himself as to the work involved and the difficulties and restrictions attending the performance of this bid. The

submission of a bid will be considered as conclusive evidence that the bidder has made such examination.

5. CONSIDERATION OF PRIOR SERVICE

Previous performance, quality of service and merchandise will be considered.

6. ADDENDA AND INTERPRETATIONS & ALTERNATE PROPOSALS

At the time of the opening of bids each bidder will be presumed to have inspected the work and to have read and to be thoroughly familiar with all of the Contract Documents (including all addenda). The failure or omission of any bidder to receive or examine any form, instruction or document shall in no way relieve any bidder from any obligation in respect to his bid.

If any person contemplating submitting a proposal is in doubt as to the true meaning of any part of these specifications, he may submit a written request for an interpretation to the Purchasing Director. No interpretations as to the meaning of the plans, specifications or other Contract Documents will be made to any bidder orally. Every request for such interpretation should be in writing addressed to the Town of Ridgefield, Director of Purchasing, 400 Main Street, Ridgefield, Connecticut 06877, and to be given consideration, must be received at least five (5) days prior to the date fixed for the opening of Bids. Any and all such interpretations and any supplementary instructions will be in the form of written Addenda to the Specifications which, if issued, will be mailed by Registered Mail with Return Receipt Requested to all prospective bidders at the respective addresses furnished for such purposes, not later than three (3) days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such Addendum or interpretations shall not relieve any bidder from any obligations under his bid as submitted. All Addenda so issued shall become part of the Contract Documents. Oral explanations will not be binding on the Town.

The specifications listed are to be interpreted as meaning the minimum acceptable by the Town of Ridgefield. Bidders are requested to submit quotations on the basis of these specifications. Alternative bids providing a broader scope and/or services than requested in these specifications may receive consideration providing such equipment and/or service is clearly explained. Any exceptions to the specifications requested herein must be clearly noted in writing and are to be included as a part of your bid proposal. If none are included it will be assumed that there are none.

Definition of the word "complete" means that each unit of the equipment proposed shall include all appurtenances, fasteners, parts, accessories, and services ordinarily catalogued.

An item equal to that named or described in the specifications may be furnished by the Bidder, except where expressly noted as "no substitutions." The naming of any

commercial name, trademark, or other identification shall not be construed to exclude any item of any manufacturer not mentioned by name, nor limit competition, but shall establish a standard of equality only. An item shall be considered equal to the item so named or described if:

- a. It is at least equal in quality, durability, appearance, strength and design.
- b. It will perform at least equally the function imposed by the design for the work being contracted for or the material being purchased.
- c. It conforms substantially, even with deviations, to the detailed requirements for the item in the specifications.

The Bidder shall hold the Town of Ridgefield, its officers, agents, servants, and employees, harmless from liability of any nature or kind because of use of any copyrighted or uncopyrighted compositions, secret process, patented or unpatented inventions, articles or appliances furnished or used under this bid, and agrees to defend, at his own expense, any and all actions brought against the Town of Ridgefield or himself because of the unauthorized use of such articles.

7. QUOTATION LIMITATION

Bidders shall offer only **ONE ITEM AND PRICE** for each line item bid. If an or-equal item is to be bid, the bidder is to select the brand and model that meets or exceeds the specified item, and submit his bid for that item.

8. ESTIMATE OF WORK

For bidding purposes, the work has been subdivided into unit price items. The quantities shown are to be considered as approximate only. The Purchasing Agent does not expressly or by implication agree that the actual quantity will correspond therewith, but reserves the right to increase or decrease the amount of any item or portion of the work as deemed necessary.

9. SAMPLES

Samples of articles, when required shall be furnished free of cost of any sort to the Town of Ridgefield. Samples received may be retained by the Town for future comparison. Samples which are not destroyed by testing, or which are not retained for future comparison will be returned upon request at the bidder's expense.

10. WITHDRAWAL OF BID

Bidders may withdraw their proposals at any time prior to the bid date. No agent/broker shall withdraw or cancel their proposal for a period of sixty (60) days after the bid closing date. The successful agent/broker shall not withdraw, cancel or modify their proposal.

11. POWER OF ATTORNEY

Attorneys-in-fact who sign contract bonds must file, with each bond, a certified and effectively dated copy of their power of attorney.

12. SUBCONTRACTORS

Each bidder contemplating the use of any subcontractor shall submit a list of subcontractors as listed on the Bid Form. The apparent low bidder shall file with the Town of Ridgefield, within five (5) days after the date of bid opening, a complete list of the names and addresses of competent, responsible and qualified subcontractors who are actually to perform major portions of the work. This in no way restricts or limits the requirement that all subcontractors must be approved by the Town. Subcontractors listed on the Bid Form or those previously approved may not be changed without the approval of the Town of Ridgefield. Local subcontractors, material suppliers, and labor in the Town of Ridgefield should be considered and sought insofar, as is practical in the performance of this project.

13. QUALIFICATION OF BIDDER

In determining the qualifications of a bidder, the Town may consider his record in the performance of any contracts for similar work into which he may have previously entered; and the Town expressly reserves the right to reject the bid of such bidder if such record discloses that such bidder, in the opinion of the Town, has not properly performed such contracts or has habitually, and without just cause, neglected the payment of bills or has otherwise disregarded his obligations to subcontractors, suppliers, state or local codes, men or employees of subcontractors. The Town may make such investigation as he deems necessary to determine the ability of the bidder to perform the work and the bidder shall furnish to the Town all such information and data for this purpose as the Town may request. The Town reserves the right to reject any bid if the evidence submitted by or the investigation of such bidder fails to satisfy the Town that such bidder is properly qualified, or that such bidder misrepresented material facts in the bid documents.

14. DISQUALIFICATION OF BIDDERS

More than one proposal from an individual, firm, partnership, corporation, or an association under the same or different names will not be considered. Reasonable grounds for believing that any Bidder is interested in more than one proposal for the work contemplated will cause the rejection of all proposals in which such Bidder is interested. Any or all proposals in which such Bidder is interested will be rejected if there is reason for believing that collusion exists among the Bidders and all participants in such collusion will not be considered in future proposals for the same work. Proposals in which the prices are obviously unbalanced may be rejected. No Contract will be awarded except to competent Bidders capable of performing the class of work contemplated.

15. DELIVERY

Inasmuch as this work concerns a needed public improvement, the provisions of this bid relating to the time of delivery, performance and completion of the work are of the essence of this bid. Accordingly, the successful bidder shall commence work **upon receipt of the signed Purchase Order** unless the Town shall authorize or direct a further delay. Time of delivery shall be stated as the number of calendar days following receipt of the Purchase Order by the Bidder to receipt of the goods or services by the Town of Ridgefield. Prices quoted must include delivery to the Town of Ridgefield as specified on the Purchase Order. No charges will be allowed for parking, crating, freight, express or cartage unless specifically stated and included in this bid.

Time of delivery may be considered in the award.

16. PAYMENT

The Town, after inspection and acceptance of workmanship, and in consideration of the faithful performance by the Bidder of all and singular his covenants, promises, and agreements contained herein, agrees to pay the Bidder for the full completion by him of the work embraced in this Contract, within (30) Thirty Days of the receipt of the final invoice. When subcontractors or suppliers are utilized, the successful Bidder for this project shall be required to submit a Mechanics Lien Waiver, acceptable to the Town, with each progress payment and/or at time of final payment prior to any payment being made.

Time, in connection with any discount offered, will be computed from the date of delivery to the Town or from the date a correct invoice is received by the Town's Finance Department, if the latter date is later than the date of delivery. Prices will be considered as **NET**, if no cash or payment discount is shown.

The successful bidder shall submit invoices to the following address:

Town of Ridgefield
Office of the Facilities Director
400 Main Street
Ridgefield, CT 06877

IT IS UNDERSTOOD AND AGREED THAT SHOULD A BID BE ACCEPTED, IT WILL AUTOMATICALLY BECOME THE CONTRACT OR AN ADDENDUM TO ANY CONTRACT AGREED UPON.

Notification of the bid award will be made by issuance of a purchase order. Bidders are to list their bids on the appropriate attached sheets. Bidders may attach a letter of explanation. A clear notification should be made on the standard bid sheets at the appropriate point of explanation that there is a letter of explanation attached. All bids

must be NET prices.

The successful bidder shall submit an itemized invoice to the Town of Ridgefield for the work as described herein.

The bidder shall be required to submit a Mechanics Lien Waiver, acceptable to the Town of Ridgefield, with each progress payment and at time of final payment prior to any payment being made.

At the time of award, the successful bidder shall be required to supply the Town of Ridgefield a Certificate of Good Standing, certifying that the corporation is in fact a valid corporation and presently licensed to conduct business in the State of Connecticut.

17. SALES TAX

Certain materials and supplies incorporated in the work of this project are exempt from Connecticut Sales Tax. The Bidder shall familiarize himself with current regulations of the State Tax Department. The tax on materials or supplies exempted by such regulations shall not be included as part of the bid. The Town will furnish the successful Bidder sales tax exemption authorization.

18. CARE AND PROTECTION OF PROPERTY

The Bidder shall take particular care to avoid damages to all private and public property and to private or public improvements within the Town's right of way. He shall make good any damages to the satisfaction of the Town. There shall be no additional compensation for the repair or restoration of private or public property improvements.

19. COMPLIANCE WITH FEDERAL, STATE AND LOCAL CODES

The Bidder shall be responsible for full compliance with any Federal, State and/or Local codes, laws, regulations and standards, as applicable.

20. AWARD

The Town of Ridgefield reserves the right to accept or reject any bid to best serve its interests, or to hold the bids for sixty (60) days before decision.

The Town reserves the right to reject any and all bids (or any part thereof), to waive defects in proposals, or to accept any proposal deemed to be in its best interest.

Exceptions will be considered to the specification provided, providing they are listed and fully explained on a separate page entitled "EXCEPTIONS TO SPECIFICATIONS"

Each exception will be considered as to its degree of impact and total effect on the bid. The purchaser shall determine which (if any taken) exceptions are acceptable, and this determination shall be final.

The Town of Ridgefield reserves the right:

- a. To award bids received on the basis of individual items, or groups of items, or on the entire list of items.
- b. To reject any or all bids, or any part thereof.
- c. To waive any informality in the bids.
- d. To accept the bid that is in the best interest of the Town of Ridgefield. The Purchasing Agent's decision shall be final.

21. INSURANCE

Insurance requirements are detailed under the attached "Insurance Requirements."

22. GUARANTEE

The bidder shall unconditionally guarantee for a period of one (1) year, except as specifically noted within these documents, from the date of acceptance, all materials, supplies, equipment, and services; including but not limited to its workmanship, delivery and installation. If within the guarantee period there are any defects or signs of deterioration the bidder shall repair, adjust or replace the item(s) to the complete satisfaction of the Town. These repairs, adjustments, or replacements are at the sole expense of the bidder and shall be made at such times that are agreeable to the Purchasing Agent so that it is least detrimental to instructional programs.

23. PERMITS

When required all licenses and permits for complying with any applicable Federal, State, and Municipal laws, codes, regulations in connection with the prosecution of the work shall be obtained by the Bidder, at no additional cost to the Town.

24. NONDISCRIMINATION IN EMPLOYMENT

The successful bidder shall agree and warrant that, in the performance of this contract, he will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, sex, religion, or national origin in any manner prohibited by State, Federal, County, or Municipal law. A certification of Non-Segregated Facilities and a Certification Regarding Equal Employment Opportunity shall be considered a part of this contract.

25. MECHANICS LIEN WAIVERS

The successful Bidder shall be required to submit a Mechanics Lien Waiver, acceptable to the Town of Ridgefield, with each progress payment, and/or at time of final payment, prior to any payment made.

APPENDIX - INSURANCE REQUIREMENTS

Each bidder shall carry and maintain the following insurance coverage during the period of the contract : The Certificate of Insurance for the Limits of Liability stated below should be submitted with your bid to the Purchasing Department at Town Hall. **Bidders may not perform any work until all insurance requirements are met.**

1. **Comprehensive General Liability Insurance** as will protect him, the Town, and any subcontractor performing work covered by this Contract, from claims for damages for personal injury, including accidental or wrongful death, as well as claims for property damages, which may arise from operations under this Contract whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them. Liability insurance shall include premises and operations, products, contractual, owners, and contractors protective. The minimum amounts of such insurance shall be as follows:
 - Bodily Injury Liability and Property Damage Liability:
\$1,000,000 each occurrence.
 - **The Town shall be named as an Additional Insured**
This **MUST** be stated explicitly on the Certificate or you will be **disqualified**
2. **Worker's Compensation Insurance and Employer's Liability** for all of his employees, employed at the site and in case any work is sublet, the Contractor shall require the subcontractor similarly to provide Workmen's Compensation Insurance for all employees of the later unless such employees are covered by the protection afforded by the Contractor.
 - Worker's Compensation and Employer Liability:
Statutory Limits
3. **Comprehensive Auto Liability Insurance:**
 - **Bodily Injury Insurance and Property Damage Insurance** covering the operation of all Motor Vehicles owned, hired and/or non-owned by the Contractor, or used by the Contractor in the Prosecution of the work

under the Contract, shall be in the minimum of **\$1,000,000 each occurrence.**

All policies relating to this Contract shall be so written so that the Town shall be notified of cancellation or change at least thirty (30) days prior to the effective date for each policy and type of coverage except for nonpayment which shall be ten (10) days prior to the cancellation. Renewal certificate covering the renewal of all policies expiring during the life of the Contract shall be filed with the Town not less than ten (10) days before the expiration of such policies. Failure to do so will result in work stoppage and possible contract cancellation.

HOLD HARMLESS AGREEMENT

The undersigned covenants and agrees to and shall at all times indemnify, protect and save harmless the Town of Ridgefield from and against all costs or expenses resulting from any and all losses, damages, detriments, claims, demands, cost and charges including attorneys fees the Town of Ridgefield may directly or indirectly suffer, sustain or be subjected to by reason or on account of the work to be performed pursuant to this Contract or any activities in connection with said Contract whether such losses and damages be suffered or sustained by the Town of Ridgefield directly or by its employees, licenses or invitees or be suffered or sustained by other persons or corporations who may seek to hold the Town of Ridgefield liable therefore.

The Contractor shall comply with the Provisions of the Immigration Reform and Control Act of 1986 effective and enforceable as of June 6, 1987 which Act makes unlawful the hiring for employment or subcontracting individuals failing to provide documentation of legal eligibility to work in the United States. The Contractor shall hold the Town of Ridgefield harmless for the failure of the Contractor to comply with the provisions of said Act.

IN WITNESS WHEREOF, the parties hereto have set their hand and seal this on the _____ day of _____

Signed, Seated and Delivered in the
Presence of:

Signed:

Notary Public

FRACKING WASTE ORDANINCE NOTICE

On January 9, 2019, The Town of Ridgefield approved and adopted an Ordinance prohibiting the storage, disposal or use of fracking waste on Town of Ridgefield land and/or projects. The complete Ordinance can be viewed at the Town Clerk's Office located at 400 Main Street, Ridgefield, CT or on the town website at the following link;

<https://ecode360.com/RI2176/laws/LF1067113.pdf#search=fracking>

Bidders shall follow this Ordinance in preparation and submission of their bid.

- 1.) No materials containing natural gas or oil waste shall be utilized in providing and retaining services to construct or maintain publicly owned and/or maintained road or real property with the Town of Ridgefield.
- 2.) No materials containing natural gas or oil waste shall be utilized in the purchase or acquisition of materials to construct or maintain publicly owned and/or maintained road or real property with the Town of Ridgefield.
- 3.) We _____ hereby submit a bid for materials, equipment and/or labor for the Town of Ridgefield. The bid is for bid documents titled _____. We hereby certify under penalty of perjury that no natural gas waste or oil waste will be used by the undersigned bidder or any contractor, sub-contractor, agent or vendor agent in connection with the bid; nor will the undersigned bidder or any sub-contractor, agent or vendor agent thereof apply any natural gas waste or oil waste to any road or real property within the Town of Ridgefield as a result of the submittal of this bid if selected.

4.) The successful bidder shall submit certificates of origin for project materials, fill and other.

Signed and sealed in
the presence of:

Contractor

By_____

Date_____

IN WITNESS WHEREOF, the parties hereto have set their hand and seal this
day on the_____ day of_____

Signed, Seated and Delivered in the
Presence of:

Signed:

Notary Public

CONTRACTOR'S QUALIFICATION STATEMENT

List below references for similar projects, including all information requested. This page must be completed and submitted with the bid.

1. Client: _____

Project Address: _____

Approximate Value: _____ Date: Started _____ Completed _____

Contact: Name _____ Telephone _____

2. Client: _____

Project Address: _____

Approximate Value: _____ Date: Started _____ Completed _____

Contact: Name _____ Telephone _____

3. Client: _____

Project Address: _____

Approximate Value: _____ Date: Started _____ Completed _____

Contact: Name _____ Telephone _____

4. Client: _____

Project Address: _____

Approximate Value: _____ Date: Started _____ Completed _____

Contact: Name _____ Telephone _____

Company: _____ *Bid Title:* _____

Street: _____ *Bid No.:* _____

City, State: _____ *Telephone No.:* _____

CONTRACTOR'S LIST OF SUBCONTRACTORS

List below the subcontractors intended to be utilized for this project. This page must be completed and submitted with the bid.

1. Firm: _____

Firm's Address: _____

Contact: Name _____ Telephone _____

Type of Work to be Performed: _____

2. Firm: _____

Firm's Address: _____

Contact: Name _____ Telephone _____

Type of Work to be Performed: _____

3. Firm: _____

Firm's Address: _____

Contact: Name _____ Telephone _____

Type of Work to be Performed: _____

4. Firm: _____

Firm's Address: _____

Contact: Name _____ Telephone _____

Type of Work to be Performed: _____

Company: _____

Bid Title: _____

Street: _____

Bid No.: _____

City, State: _____

Telephone No.: _____

PROPOSAL

Proposal of: _____
to furnish and deliver all materials and to do and perform all works in accordance with the Contract Documents for **Parks & Recreation Center HVAC RTU Replacement**, the plans and specifications prepared by Jacob Muller, Facilities Director and Southport Associates, mechanical engineer, the works being situated within the Town of Ridgefield, Connecticut.

The undersigned bidder has carefully examined the Contract Documents referred to in the "Information for Bidders", and also the site of the work, and will provide all necessary labor, machinery, tools, apparatus, and other means of construction, and do all the work and furnish all material called for by the Contract Documents in the manner prescribed therein and in said Contract, and in accordance with the requirements of the Engineer under them for the following sums:

Estimated Quantities

<u>Item</u>	<u>Estimated Quantity</u>	<u>Computed Total</u>
<u>Base Bid: Complete Installation of the new HVAC Roof Top Unit</u> the lump sum price of:		
_____	dollars	
and _____	cents	
(\$ _____) Lump Sum	LS	\$ _____

Grand Total, Base Bid

\$ _____

The Lump Sum price shown above is for all labor, tools, materials, and equipment necessary to complete all of the improvements shown on the plans or as specified herein.

For purposes of comparison, the computed Grand Total, Base Bid will serve as the basis of comparison of all bids. The computed total is not an official part of this proposal.

The Town reserves the right to eliminate any item or portion of the work that it deems to be in the best interest of the Town.

Any inconsistencies between the plans and specifications shall be reported to the Facilities Director and shall make the final decision on any inconsistencies and their intent.

The Undersigned Also Agrees as Follows:

First: To do any extra work not covered by the above schedule of prices, which may be ordered by the Engineer and to accept as full compensation therefor such prices as may be agreed upon in writing by the Engineer and the Contractor in accordance with Article 5, "General Conditions".

Second: Within **seven (7)** days from the date of the "Notice to Proceed", to execute the Contract and to furnish to the Owner a satisfactory performance and payment bond in the sum of the full amount of the contract.

Dated: _____

Signature of Bidder: _____

By: _____

Title: _____

Business Address: _____

GENERAL CONDITIONS

1. CONTRACTOR'S UNDERSTANDING:

It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature and location of the work, the conformation of the ground, the character quality and quantity of materials to be encountered, the character of equipment and facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work under this Contract. No verbal agreement or conversation with any officer, agent or employee of the Owner, either before or after the execution of this contract, shall affect or modify any of the terms or obligations herein contained.

2. DEFINITIONS:

OWNER:

The word "Owner" when it appears in the Contract Documents shall mean The Town of Ridgefield, Connecticut.

ENGINEER:

The word "Engineer" when it appears in the contract Documents shall mean: Jacob Muller, Facilities Director, or his specifically designated Agent.

CONTRACTOR:

The word "Contractor" when it appears in the Contract Documents shall mean the party to whom the Contract has been awarded.

3. MATERIALS, APPLIANCES AND EMPLOYEES:

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation and other facilities necessary for the execution and completion of the work. Unless otherwise specified, all materials shall be new and both workmanship and materials shall be of good quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

The Contractor shall at all times endorse strict discipline and good order among his employees, and shall not employ on the work any unfit person or any one not skilled in the work assigned to him.

4. PROTECTION OF WORK AND PROPERTY:

The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect the Owner's property from injury or loss arising in connection with this Contract. He shall make good any such damage, injury or loss, except such as may be directly due to errors in the Contract Documents or caused by agents or employees of the Owner. He shall adequately protect adjacent property as provided by law and the Contract Documents. He shall provide and maintain all passageways, guard fences, lights and other facilities for protection required by public authority or local conditions.

In an emergency affecting the safety of life or of the work or of adjoining property, the Contractor, without special instruction or authorization from the Engineer, is hereby permitted to act at his discretion, to prevent such threatened loss or injury, and he shall so act, without appeal, if so instructed or authorized. Any compensation claimed by the Contractor on account of emergency work, shall be determined by agreement or arbitration.

5. CHANGES IN THE WORK:

The Owner, without invalidating the Contract, may order extra work or make changes by altering, adding to or deducting from the work, the Contract Sum being adjusted accordingly. All such work shall be executed under the conditions of the original Contract except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change.

In giving instructions, the Engineer shall have authority to make minor changes in the work, not involving extra cost, and not inconsistent with the purposes of the work, but otherwise, except in an emergency, endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the Engineer, and no claim for an addition to the Contract Sum shall be valid unless so ordered.

The value of any such extra work or change shall be determined in one or more of the following ways:

- (a) By estimate and acceptance in a lump sum.
- (b) By unit prices named in the Contract subsequently agreed upon.
- (c) By cost and percentage or by cost and a fixed fee.

If none of the above methods is agreed upon, the Contractor, provided he receives an order as above, shall proceed with the work. In such case, and also under case (c), he shall keep and present in such form as the Engineer may

direct, a correct account of the net cost of labor and materials, together with vouchers. In any case, the Engineer shall certify to the amount, including reasonable allowance for overhead and profit, due to the Contractor. Pending final determination of value, payments on account of changes shall be made on the Engineer's estimate.

6. CLAIMS FOR EXTRA COST:

If the Contractor claims that any instructions by drawings or otherwise involve extra cost under this Contract, he shall give the Engineer written notice thereof within a reasonable time after the receipt of such instructions and in any event before proceeding to execute the work, except in emergency endangering life or property, and the procedure shall then be as provided for changes in the work. No such claim shall be valid unless so made.

7. SUSPENSION OF WORK:

The Owner may at any time suspend the work, or any part thereof by giving 24 hours notice to the Contractor in writing. The work shall be resumed by the Contractor within ten (10) days after the date fixed in the written notice from the owner to the Contractor to do so. The Owner shall reimburse the Contractor for expense incurred by the Contractor in connection with the work under this contract as a result of such suspension.

8. THE OWNER'S RIGHT TO DO WORK:

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

9. PAYMENTS WITHHELD:

The Owner may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any certificate to such extent as may be necessary to protect him from loss on account of the following:

- (a) Defective work not remedied.
- (b) Claims filed or reasonable evidence indicating probable filing of claims.
- (c) Failure of the Contractor to make payments properly to subcontractors or for material or labor.
- (d) A reasonable doubt that the Contract can be completed for the balance then unpaid.
- (e) Damage to another Contractor.

When the above grounds are removed, payment shall be made for amount withheld because of them.

10. CONTRACTOR'S LIABILITY INSURANCE:

The Contractor shall maintain such insurance as will protect him from claims under workmen's compensation acts and from any other claims for damages for personal injury, including death, which may arise from operations under this Contract, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them. Certificates of such insurance shall be filed with the engineer, if he so requires and shall be subject to his approval for adequacy of protection.

11. INDEMNITY:

The Contractor shall indemnify and save harmless the Owner from and against all losses and all claims, demands, payments, suits, actions, recoveries and judgments of every nature and description brought or recovered against him, by reason of any act or omission of the said Contractor, his agents or employees, in the execution of the work or in the guarding of it.

The Contractor shall, and is hereby authorized to maintain and pay for such insurance, issued in the name of the Owner, as will protect the Owner from his contingent liability under this Contract, and the Owner's right to force against the Contractor any provision of this article shall be contingent upon the full compliance by the Owner with the terms of such insurance policy or policies, a copy of which shall be deposited with the Owner.

12. DAMAGES:

Any claim for damage arising under this Contract shall be made in writing to the party liable within a reasonable time of the first observance of such damage and not later than the time of final payment, except as expressly stipulated otherwise in the case of faulty work or materials, and shall be adjusted by agreement or arbitration.

13. ASSIGNMENT:

Neither party to the Contract shall assign the Contract or sublet it as a whole without the written consent of the other, nor shall the Contractor assign any moneys due to or to become due to him hereunder, without the previous written consent of the Engineer.

14. ENGINEER'S STATUS:

The Engineer shall have general supervision and direction of the work. He has authority to stop the work whenever such stoppage may be necessary to insure the proper execution of the Contract. He shall also have authority to reject all work and materials which do not conform to the Contract, to direct the

application of forces to any portion of the work, as in his judgment is required, and to order the force increased or diminished, and to decide questions which arise in the execution of the work.

15. METHOD OF PAYMENT:

At the end of each calendar month, the Contractor shall submit to the Engineer a requisition for payment which requisition shall be based upon the actual amount of the work performed during the previous month. The requisition may include materials stored on the site but not installed. The Engineer shall, within ten (10) days, check the requisition against his review of the work which has been done and submit it to the Owner, a written statement as to the validity of the requisition. The Owner shall then pay to the Contractor one **hundred percent (100%)** of the amount stated in the Engineer's report. **No payment shall be made until the Contractor has satisfied all prevailing wage reporting requirements if prevailing wages are a part of this contract.**

16. FINAL PAYMENT:

When the Contract has been completed, the Contractor shall notify the Engineer in writing. Upon receipt of this notification, the Engineer shall proceed to make final measurements of the work done under the provisions of this Contract. The Engineer shall then submit to the Owner a written statement setting forth these final measurements and the amount due the Contractor consistent with the unit prices and lump sum bid in the Proposal. The Owner shall within sixty (60) days pay to the Contractor this sum except that he may deduct any moneys which are to be retained under the terms of the Contract for repairs or otherwise.

17. ORDER OF THE WORK:

The order of the work shall be subject to the approval of the Engineer in all cases. The Contractor may be required to submit a work schedule in writing to the Engineer for his approval.

18. (OMITTED)

19. PROTECTION TO PUBLIC:

The Contractor shall conduct the work in such a manner as to offer minimum disturbance to the traveling public. He shall not close off traffic without specific permission of the Engineer and shall provide flagmen if such becomes necessary, in the opinion of the Engineer. Proper barricades, lights, and other protective devices shall be supplied at the Contractor's expense and properly maintained during the entire course of the work.

20. GUARANTEE:

The Contractor guarantees that the work to be done under this Contract and the materials furnished by him and used in the construction of the project are free from defects or flaws. The guarantee is for a term of one (1) year from and after the date upon which the final estimate of the Engineer is formally approved by the party of the first part. It is hereby agreed and understood that this guarantee shall not include any repairs made necessary by any cause or causes other than defective materials furnished by or defective work done by the Contractor.

21. RATE OF PROGRESS AND TIME OF COMPLETION:

The Contractor shall commence work within seven (7) days after receipt of the Notice to Proceed and, unless an extension of time shall be made in the manner herein provided, shall progress therewith to final completion within ***ninety (90) consecutive calendar days*** after receipt of the Notice to Proceed.

22. EXTENSION OF TIME:

The Contractor expressly covenants and agrees that, in undertaking to complete the work within the time specified, he has taken into consideration and made allowance for all of the ordinary delays and hindrances incident to such work, whether growing out of delays in securing materials, workmen, or otherwise. Should the Contractor, however, be substantially delayed in the prosecution and completion of the work by any changes, additions, or omissions therein ordered in writing by the engineer, or by fire, lightning, earthquake, tornado, cyclone, riot, insurrection of war, or by the abandonment of the work by the workmen engaged therein, through no fault of the Contractor, or by the discharge of all or any material number of workmen in consequence of difficulties arising between the Contractor and such workmen, or by the neglect, delay, or default of any other contractor of the town, then the Contractor may, within five (5) days after the occurrence of the delay for which he claims allowance, notify the Engineer in writing, and thereupon, and otherwise, the Contractor shall be allowed such additional time for the completion of the work, as the Engineer in his discretion shall award in writing, and his decision shall be final and conclusive upon the parties. Such additional time shall be the sole and exclusive remedy for any delay claimed by the Contractor.

23. SALES TAX:

In accordance with the provisions of Special Act No. 77-98, as amended, and Section 12-412(a) of the Connecticut General Statutes, sales of tangible personal property and services to the Town are not subject to the Connecticut Sales and Use Tax, and such tax shall not be included as part of the bid.

24. Termination of the Contract:

If the Owner fails to make payment thereon for a period of 30 days, the Contractor may, upon seven additional days written notice to the Owner,

terminate the Contract and recover from the Owner payment for work executed and for proven loss with respect to materials, equipment tools, and construction equipment and machinery, including reasonable overhead, profit and damages applicable to the project.

If the contractor defaults or persistently fails or neglects to carry out the work in accordance with the Contract Documents or fails to perform a provision of the Contract, the Owner, after seven days written notice to the Contractor and without prejudice to any other remedy the Owner may have, may make good such deficiencies and may deduct the cost thereof, including compensation for the Engineer's services and expenses made necessary thereby, from the payment then or thereafter due the Contractor. Alternatively, at the Owner's option, and upon certification by the Engineer that sufficient cause exists to justify such action, the Owner may terminate the Contract and take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever method the Owner may deem expedient. If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Engineer's services and expenses made necessary thereby, such excess shall be paid to the Contractor, but if such costs exceed such unpaid balance, the Contractor shall pay the difference to the Owner.

SPECIAL CONDITIONS

1. Contract Documents and Working Drawings:

The work is shown on the attached appendices, if any, or the accompanying Contract Drawings. Such additional working drawings as are required because of changes or to provide greater detail will be provided by the Engineer.

2. Planimeter:

The use of the planimeter shall be considered satisfactory for estimating quantities where geometric and analytic methods would be comparatively laborious.

3. Soil and Groundwater Conditions:

The Town assumes no responsibility whatsoever with respect to ascertaining for the Contractor such facts concerning physical characteristics at the site of the project. The Contractor agrees that he will make no claim for and has no right to additional payment or extension of time for completion of the work, or any other concession because of any interpretations or misunderstanding on his part of this Contract, or because of any failure on his part to fully acquaint himself with all conditions relating to the work.

4. Existing Structures:

All known surface structures immediately adjacent to the work, are shown on the Plans. This information is shown for the convenience of the contractor in accordance with the best information available, but is not guaranteed to be correct or complete. Underground structures in the path of the project are **not** shown. The Contractor shall explore the route ahead of trenching and shall uncover all known obstructing pipes sufficiently to determine their location. Necessary changes in location may be made by the Engineer to avoid unanticipated obstruction.

The Contractor shall, at his own expense, sustain in their places and protect from direct or indirect injury all utilities, pipes, poles, conduits, walls, buildings, and other structures, utilities, and property in the vicinity of his work. Such sustaining and protecting shall be done carefully by the Contractor and as required by the party owning or controlling the structure. Before proceeding with such work, the Contractor shall satisfy the Engineer that the methods and procedures to be used have been approved by the party owning said structure. The Contractor shall take all risks attending the presence or proximity of pipes, poles, conduits, walls, buildings, wires, or other structures, utilities, and property in the vicinity of his work, and he shall be responsible for all damage and assume

all expense for direct or indirect injury caused by his work to any of them or to any person or property by reason of injury to them.

The Contractor must notify “Call Before You Dig” at 1-800-922-4455 prior to start of construction.

5. Dust Control:

The Contractor shall take all necessary precautions to prevent and abate nuisance caused by dust arising from his operation, by the application of water spray.

6. Sedimentation and Erosion Control:

The Contractor shall control sedimentation and erosion in accordance with the publication entitled, “Erosion and Sedimentation Control Handbook,” latest edition, U. S. Department of Agriculture, Soil Conservation Service, Storrs, Connecticut, and as approved by the Engineer.

7. Payment for Miscellaneous Work:

No direct or separate payment will be made for furnishing and providing miscellaneous temporary works, plant and services, including Contractor’s office, sanitary requirements, water supply, power, tools, equipment, lighting, telephone systems, store houses, store yards, safety devices, and watchmen, or other items specified under these special conditions. Compensation for all such services and materials shall be considered as having been included in the prices stipulated for the Items of the Contract.

8. Clean-up of Site:

During the progress of the work, the Contractor shall keep the site in a generally neat condition. Lunch papers, bottles, lumber cut-offs, drinking cups, and like rubbish shall be removed from the site daily. The work shall be cleaned up as the various portions of the project are completed.

Upon completion of the work and before acceptance and final payment will be made, the Contractor shall, except as otherwise expressly directed or permitted in writing, clean and remove from the site all surplus and discarded materials, rubbish, and temporary structures. He shall restore in an acceptable manner all property, both public and private, which has been damaged during the prosecution of the work, and leave the whole in a neat and presentable condition. He shall also remove all plant, surplus, and waste materials from the site.

9. Emergency Work:

The Contractor shall file with the Engineer a telephone number of a person authorized by him who may be contacted regarding emergency work at the job site that may be required during non-working hours for reasons of public safety. The person shall be readily available and have full authority to deal with any emergency that may occur.

10. Work in Bad Weather:

During freezing, stormy, or inclement weather, no work shall be done except that which can be done satisfactorily and in a manner as to secure first-class construction throughout.

11. Night, Saturday, and Sunday Work:

Unless otherwise permitted or stipulated under a State or Town encroachment permit, no work shall be done between the hours of 6:00 p.m. and 7:00 am, nor on Saturday or Sunday, except as necessary for the proper care and protection of the work already performed. If it shall become absolutely necessary to perform work at night or on Saturday or Sunday, the Engineer shall be informed at least twenty-four (24) hours in advance of the beginning of performance or such work. Only such work shall be done at night as can be done satisfactorily and in a first-class manner. Good light and other necessary facilities for performing and inspecting the work shall be provided and maintained at all points where such work is being done.

12. Explosives and Blasting:

Explosives for blasting shall be stored, handled, and used in accordance with the laws, ordinances, and regulations of the State of Connecticut, all local regulations, and with such additional regulations as the Engineer may require. Blasting shall be conducted so as not to endanger persons or property and, unless otherwise permitted, shall be covered or otherwise satisfactorily confined. The Contractor shall be responsible and shall make good any damage of whatever nature caused by blasting or accidental explosions. It shall be the Contractor's responsibility to obtain all required permits for blasting.

13. Traffic Control:

The Contractor shall maintain traffic during the progress of the work. Barricades, flagmen, uniformed police officers on any other type of traffic control necessary to ensure the safety of the public shall be utilized by the Contractor. All methods of traffic control are subject to the approval of the Chief of Police who may direct other methods to be employed. No direct payment for traffic control will be made. It is the Contractor's responsibility to schedule all uniformed police officers as may be required. Payment for all traffic control other than uniformed police officers shall be covered under the various items of these specifications.

14. Material Disposal:

The Contractor shall be responsible for the disposal of all construction debris generated by the project. The Town cannot accept the disposal of any material at this time.

15 Wage Rates:

This project IS subject to prevailing wage rates.

16. State of Connecticut SBE/MBE Set Aside Requirements:

This project is NOT subject to the State of Connecticut SBE/MBE set aside requirements.

17. Permits:

It is the Contractor's responsibility to obtain all necessary building or construction permits, including those that may be required from either the Town of Ridgefield or the State of Connecticut, prior to the start of construction. All work shall be completed in compliance with the latest edition of the prevailing fire prevention and building codes in effect in the State of Connecticut or the State of Connecticut department of Transportation Standard Specifications, latest edition, as applicable.

18. Concrete Testing:

Concrete testing **is not** required.

19. Materials:

Materials normally delivered labeled shall be received with manufacturer's original label and instruction, or else shall be subject to rejection. Materials shall be stored under adequately clean and dry condition, and all work shall be preformed according to the best practice of the trades. Manufacturer's specifications and instructions for products specified herein or approved equals, become part of these specifications and all such instructions are to be followed accordingly.

20. Lines and Grades:

It is the intent of these plans and specifications to illustrate the approximate location of the proposed sidewalk. It is the Contractor's responsibility to locate in the field the project's location according to the constraints as shown on the plans or listed under these specifications.

21. Accommodation of Traffic:

During the progress of the work, all roads shall be kept open for the passage of traffic and pedestrians and shall not be unnecessarily obstructed unless authorized by the authority having jurisdiction over same. Driveways, sidewalks and crossings shall be closed as short a time as possible while pipe is being placed, and passage shall be restored as soon as possible thereafter by properly placed backfill or approved bridging. The Contractor shall take such measures at his own expense as may be necessary to keep the roads open for traffic, and shall give advance notice to the Department of Transportation (D.O.T.), town public works department, local police and state police as required.

Warning signs shall be provided along all roads where work is in progress. The Contractor shall notify and make all arrangements with the D.O.T., town public works department, local police and state police for direction of traffic past the equipment, machinery, or construction operations. Barricades and lights shall be provided to protect traffic. Where trenches have been cut in road shoulders on which traffic may pass at times, warning signs shall be placed at frequent intervals and maintained until the shoulder is safe for travel. All such work and operations shall be in accordance with the requirements of the D.O.T., public works department, local police and state police.

Should the Contractor or his employees neglect to set out and maintain barricades or lights, as required in these Specifications, the Engineer may immediately and without notice, arrange for furnishing, installing and maintaining barricades or lights, and any other precaution deemed necessary. The cost thereof shall be borne by the Contractor and may be deducted from any amount due or to become due to the Contractor under this Contract.

The Contractor shall be held responsible for any damages that may have to be paid as a consequence of the Contractor's failure to protect the public.

SPECIMEN CONTRACT

This Agreement made as of the _____ day of _____
the year _____ by and between the Town of Ridgefield, 400 Main
Street, Ridgefield, Connecticut, (herein after called the Owner), and
_____, doing business at
_____, (herein after called the
Contractor).

Witnesseth that the Owner and the Contractor in consideration of the mutual
covenants herein after set forth, agree as follows:

Article 1. Work:

The contractor will perform all work as shown in the Contract Documents for the
completion of the Project generally described as follows:

Parks and Recreation Center HVAC RTU Renovations

The work to be done consists of the furnishing of all labor, materials, tools, and
equipment necessary to construct the project as shown on the plans and as
described in the specifications prepared by Jacob Muller, Facilities Director,
Southport Associates, mechanical engineer and GNCB Consulting Engineers,
structural engineer.

Article 2. Project Manager:

Jacob Muller, Facilities Director will act as the Project Manager in connection
with completion of the Project in accordance with the Contract Documents.

Article 3. Contract Time:

The work shall be completed within **one hundred twenty (120) calendar days** after the date which the Contractor is to start the work as provided in the Contract Documents.

Article 4. Liquidated Damages:

The OWNER and CONTRACTOR recognize that time is of the essence with this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in Article 3, above, plus any extensions thereof allowed in accordance with the General Conditions of the contract. They also recognize the delays, expense, and difficulties involved in proving the actual loss suffered by OWNER if the Work is not completed on time. If the CONTRACTOR shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER One Thousand dollars (\$1,000.00) for each calendar day that expires after the time specified in Paragraph 3.1 above for completion and readiness for final payment until the Work is completed and ready for final payment.

Article 5. Contract Price:

The Owner will pay the Contractor for performance of the Work and completion of the Project in accordance with the Contract Documents subject to adjustment by modifications as provided therein in current funds as follows:

Article 6. Progress and Final Payments:

The Owner will make progress payments on account of the Contract Price as provided in the General Conditions. Progress and final payments will be on the basis of the Contractor's application for payment as approved by the Engineer.

Article 7. Contract Documents:

The Contract Documents which comprise the contract between the Owner and the Contractor are attached hereto and made a part hereof and consist of the following:

- A. This agreement
- B. Exhibits to this Agreement
- C. Contractor's Bid and Bid Bonds
- D. Specifications
- E. Drawings as referenced by the Specifications or attached hereto
- F. Addenda numbers: _____
- G. Any modifications, including change orders, duly delivered after execution of this agreement.

Article 8. Miscellaneous:

- A. Terms used in this Agreement which are defined in Article 1 of the General Conditions shall have the meanings indicated in the General Conditions.
- B. Neither the Owner nor the Contractor shall, without the prior written consent of the other, assign or sublet in whole or in part his interest under any of the Contract Documents and, specifically, the Contractor shall not assign any moneys due or to become due without the prior written consent of the Owner.

- C. The Owner and the Contractor each binds himself, his partners, successors, assigns and legal representatives to the other party hereto in respect of all covenants, agreements and obligations contained in the Contract Documents.
- D. The Contract Documents constitute the entire agreement between the Owner and the Contractor and may only be altered, amended or repealed by a duly executed written instrument.

In witness whereof, the said parties hereto have caused this instrument to be signed by their respective duly constituted officers, attested, and sealed pursuant to proper resolutions.

Signed and sealed in
the presence of:

Town of Ridgefield

By _____

Date _____

Contractor

By _____

Date _____

Appendix A

RTU Photos







































Existing RTU

Appendix B
Contract Drawings

ELECTRICAL DRAWING LIST		
E-100	-	ELECTRICAL LEGENDS, NOTES AND SPECIFICATIONS
E-101	-	ELECTRICAL SPECIFICATIONS AND DETAILS
E-200	-	ELECTRICAL ROOF PART PLANS PLAN

ELECTRICAL GENERAL SYMBOLS AND ABBREVIATIONS	
	JUNCTION BOX
	JUNCTION BOX WITH BLANK FACEPLATE
	CONTROL WIRING IN CONDUIT
	EMERGENCY BRANCH CIRCUIT IN CONDUIT
	BRANCH CIRCUIT IN CONDUIT CONCEALED BELOW FLOOR SLAB
	BRANCH CIRCUIT IN FLEXIBLE CONDUIT
	BRANCH CIRCUIT IN CONDUIT - HOT LEG, SWITCH LEG, NEUTRAL AND EQUIPMENT GROUND, RESPECTIVELY
	BRANCH CIRCUIT HOMERUN - PANEL AND SPACE AS INDICATED ON DRAWINGS
	EXISTING EQUIPMENT/WIRE TO BE REMOVED
	EXISTING EQUIPMENT/WIRE TO REMAIN
	NEW EQUIPMENT/WIRE
AFF	ABOVE FINISHED FLOOR
BFF	BELOW FINISHED FLOOR
ER	EXISTING TO REMAIN
RE	RELOCATED EXISTING
TBD	TO BE DETERMINED
UG	UNDERGROUND
WP	WEATHER-PROOF

ELECTRICAL POWER & SYSTEMS SYMBOLS AND ABBREVIATIONS	
	DUPLEX RECEPTACLE, WALL MOUNTED
	QUADRAPLEX RECEPTACLE, WALL MOUNTED
	VOICE AND/OR DATA OUTLET, WALL MOUNTED
	EMERGENCY POWER-OFF PUSH BUTTON
	CONTACTOR
	LOW-VOLTAGE TRANSFORMER
	NONFUSED DISCONNECT SWITCH - TYPE AND SIZE AS INDICATED ON DRAWINGS
	FUSED DISCONNECT SWITCH - TYPE AND SIZE AS INDICATED ON DRAWINGS
	COMBINATION MOTOR STARTER AND NONFUSED DISCONNECT SWITCH - TYPE AND SIZE AS INDICATED ON DRAWINGS
	MOTOR STARTER - TYPE AND SIZE AS INDICATED ON DRAWINGS
	DOUBLE-POLE, DOUBLE-THROW SWITCH FOR RAISE/LOWER CONTROL OF MOTORIZED PROJECTION SCREEN - LOWERCASE LETTER INDICATES CONTROLLED SCREENS
	MANUAL MOTOR STARTER, TOGGLE-OPERATED WITH THERMAL OVERLOADS SIZED PER MANUFACTURER'S SPECIFICATIONS
	VARIABLE FREQUENCY DRIVE - BY OTHERS
	ELECTRIC MOTOR - "#" INDICATES HORSEPOWER RATING, "MD" INDICATES MOTORIZED DOOR AND "PS" INDICATES PROJECTION SCREEN
	FUSE
	SWITCH
	CIRCUIT BREAKER
	EXISTING PANELBOARD/LOADCENTER, FLUSH MOUNTED
	NEW PANELBOARD/LOADCENTER, FLUSH MOUNTED
	EXISTING PANELBOARD/LOADCENTER, SURFACE MOUNTED
	NEW PANELBOARD/LOADCENTER, SURFACE MOUNTED
	EXISTING DISTRIBUTION PANELBOARD, SURFACE MOUNTED
	NEW DISTRIBUTION PANELBOARD, SURFACE MOUNTED
GFI	GROUND--FAULT CIRCUIT INTERRUPTING TYPE DEVICE

ELECTRICAL SPECIFICATIONS

A. GENERAL - 260100:

- PROVIDE LABOR, MATERIALS, EQUIPMENT AND SERVICES FOR THE COMPLETION OF ELECTRICAL SYSTEMS AS SHOWN ON THESE DRAWINGS AND AS REQUIRED BY THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), STATE AND LOCAL CODES, AND OSHA REGULATIONS. THE CONTRACTOR SHALL PAY ALL FEES; AND OBTAIN ALL CERTIFICATES AND INSPECTIONS.
- NON-COMPLIANCE: SHOULD THE CONTRACTOR PERFORM ANY WORK THAT DOES NOT COMPLY WITH THE REQUIREMENTS OF APPLICABLE BUILDING CODES, STATE LAWS, LOCAL ORDINANCES, INDUSTRY STANDARDS, AND UTILITY COMPANY REGULATIONS; HE SHALL BEAR ALL COSTS ARISING IN CORRECTING THE DEFICIENCIES.
- IN CASE OF DIFFERENCE BETWEEN BUILDING CODES, STATE LAWS, LOCAL ORDINANCES, INDUSTRY STANDARDS, UTILITY COMPANY REGULATIONS, THESE SPECIFICATIONS AND THE CONTRACT DRAWINGS; THE MOST STRINGENT SHALL GOVERN. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE OWNER IN WRITING OF ANY SUCH DIFFERENCE.
- ALL EQUIPMENT SHALL BE NEW AND UNUSED; AND SHALL BE "UL" LISTED AND BEAR THE "UL" LABEL.
- ALL EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. ALL MATERIALS SHALL BE OF THE BEST QUALITY FOR PURPOSE INTENDED. TRADE NAMES AND CATALOG NUMBERS ARE INTENDED TO INDICATE THIS QUALITY AND GRADE. OBTAIN WRITTEN APPROVAL FROM THE OWNER FOR ANY SUBSTITUTIONS MADE AFTER ACCEPTANCE OF SUBMITTAL FOR ANY ITEM.
- ON ACCEPTANCE OF CONTRACT, THE CONTRACTOR AGREES TO GUARANTEE ALL WORK AND EQUIPMENT FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF INITIAL OPERATION. MANUFACTURED EQUIPMENT SHALL CARRY FULL PERIOD OF THE MANUFACTURER'S GUARANTEE AND SHALL NOT BE LESS THAN ONE (1) YEAR.
- PRIOR TO SUBMISSION OF BID, THE CONTRACTOR SHALL VISIT THE JOB SITE TO ASCERTAIN ACTUAL FIELD CONDITIONS AS THEY RELATE TO THE WORK IN THESE SPECIFICATIONS AND DRAWINGS. ANY DISCREPANCIES SHALL BE BROUGHT TO ATTENTION OF THE ARCHITECT AND/OR ENGINEER AT THIS TIME. ALL ITEMS NOT RESOLVED PRIOR TO BID SHALL BE INCLUDED AS WRITTEN QUALIFICATIONS TO THE BID DOCUMENT. SUBMISSION OF BID SHALL BE EVIDENCE THAT VERIFICATION OF THE JOB SITE HAS BEEN PERFORMED.
- THE GENERAL CONTRACTOR SHALL PERFORM ALL CUTTING, CORE DRILLING, SLAB PENETRATIONS, TRENCHING, ETC. NECESSARY FOR PROPER INSTALLATION OF ELECTRICAL WORK. THE CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AS REQUIRED TO INCLUDE ALL WORK IN THE BID SUBMISSION.
 - FLOOR SLABS SHALL BE X-RAYED PRIOR TO THE START OF ANY WORK. COORDINATE SCHEDULING OF THIS WORK WITH THE ARCHITECT AND BUILDING MANAGEMENT.
 - ALL LOCATIONS SHALL BE FIELD COORDINATED WITH THE ARCHITECT AND/OR BUILDING MANAGEMENT; AND SHALL BE APPROVED BY THE BUILDING ENGINEER PRIOR TO START OF WORK.
 - COORDINATE WITH THE BUILDING MANAGEMENT TO ENSURE INTEGRITY OF FLOOR SLABS IS MAINTAINED. PROVIDE ALL STRUCTURAL SUPPORTS AS DIRECTED BY THE BUILDING STRUCTURAL ENGINEER IF REQUIRED.
- OPENINGS AROUND ELECTRICAL PENETRATIONS THROUGH FIRE RESISTANCE RATED WALLS, PARTITIONS, FLOORS OR CEILINGS SHALL BE FIRE-STOPPED USING APPROVED METHODS. ACCEPTABLE MANUFACTURERS ARE HILTI AND 3M BUT MATERIAL MUST BE APPROVED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL ELECTRICAL INSTALLATIONS THAT ARE WITHIN CLOSE PROXIMITY OF OTHER TRADES. CONDUIT SHALL BE INSTALLED AS HIGH AS POSSIBLE ABOVE FINISHED CEILING TO AVOID CONFLICTS WITH OTHER TRADES. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL TEMPORARY LIGHTING AND POWER DURING CONSTRUCTION.
- COVER LIGHT FIXTURES, EQUIPMENT, APPARATUS, ETC. TO PROTECT AGAINST CHEMICAL, WATER, DIRT OR MECHANICAL DAMAGE BEFORE AND DURING THE CONSTRUCTION PERIOD UNTIL THE FINAL ACCEPTANCE. ALL EQUIPMENT SHALL BE DELIVERED, PROPERLY PACKED AND STORED AT THE SITE UNTIL FINAL INSTALLATION.
- THE CONTRACTOR SHALL REPAIR ANY DAMAGE DONE BY HIMSELF OR HIS WORKMEN. RESTORE TO ORIGINAL CONDITION ANY APPARATUS, EQUIPMENT OR SURFACE DAMAGED UNDER THIS SCOPE OF WORK PRIOR TO FINAL ACCEPTANCE, INCLUDING RESTORATION OF DAMAGES TO SHOP COATS OF PAINT.
- IT IS THE INTENT OF THESE SPECIFICATIONS AND DRAWINGS TO REQUIRE AN INSTALLATION THAT IS COMPLETE IN EVERY RESPECT. IT IS NOT THE INTENT TO GIVE EVERY DETAIL IN THESE SPECIFICATIONS AND DRAWINGS. IF AN ITEM OF WORK IS SHOWN ON THE DRAWINGS, IT SHALL BE CONSIDERED SUFFICIENT FOR INCLUSION IN THE CONTRACT. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT THAT IS NECESSARY FOR COMPLETE INSTALLATION WHETHER SPECIFICALLY MENTIONED OR NOT.
- THE DRAWINGS FOR ELECTRICAL WORK UTILIZE SYMBOLS AND SCHEMATIC DIAGRAMS WHICH HAVE NO DIMENSIONAL SIGNIFICANCE. THE WORK SHALL BE INSTALLED TO FULFILL THE DIAGRAMMATICAL INTENT EXPRESSED ON THE DRAWINGS AND IN CONFORMITY WITH DIMENSIONS INDICATED ON FINAL WORKING DRAWINGS, FIELD LAYOUTS AND SHOP DRAWINGS FROM ALL TRADES.
- PROVIDE TO THE OWNER, A COMPLETE SET OF REPRODUCIBLE AS-BUILT DRAWINGS ON AUTOCAD CLEARLY INDICATING ANY DEVIATIONS FROM THE DESIGN AS SHOWN ON THE DRAWINGS.
- PROVIDE TO THE OWNER FOUR (4) COPIES OF THE OPERATING AND MAINTENANCE MANUALS WITH CATALOG INFORMATION ON ELECTRICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO: TRANSFORMERS, SWITCHBOARDS, PANELBOARDS, GENERATORS, UPS SYSTEMS, TRANSFER SWITCHES, LIGHTING CONTROL SYSTEMS, COMMUNICATION SYSTEMS, SECURITY SYSTEMS AND FIRE ALARM SYSTEMS.
- SHOP DRAWINGS AND OTHER INFORMATION REQUIRED: PRIOR TO PURCHASING ANY EQUIPMENT OR MATERIALS, A MANUFACTURER'S LIST SHALL BE SUBMITTED FOR REVIEW. PRIOR TO ASSEMBLING OR INSTALLING THE WORK, THE FOLLOWING SHALL BE SUBMITTED FOR REVIEW:
 - CATALOG INFORMATION SHEETS, FACTORY ASSEMBLY DRAWINGS AND FIELD INSTALLATION DRAWINGS AS REQUIRED FOR A COMPLETE EXPLANATION AND DESCRIPTION OF ALL ITEMS OR EQUIPMENT SPECIFIED IN THE FOLLOWING SECTIONS.
 - THE PURPOSE FOR THE REVIEW OF SHOP DRAWINGS IS TO MAINTAIN THE INTEGRITY OF THE DESIGN. UNLESS THE CONTRACTOR CLEARLY INDICATED IN WRITING AND ON THEIR COMPANY LETTERHEAD, ANY CHANGES, SUBSTITUTIONS, DELETIONS OR OTHER DIFFERENCES BETWEEN SUBMISSION AND CONTRACT DOCUMENTS, APPROVAL BY THE ENGINEER DOES NOT CONSTITUTE ACCEPTANCE.
 - NO SUBSTITUTIONS FOR ANY EQUIPMENT MATERIAL AND/OR MANUFACTURER SHALL BE PERMITTED WITHOUT A FORMAL WRITTEN SUBMITTAL INCLUDING AN EXPLANATION FOR SUBSTITUTION, A LIST OF ANY DEVIATIONS FROM SPECIFIED THE MODEL, SHOP DRAWINGS AND ASSOCIATED CREDIT. IT SHALL NOT BE ASSUMED THAT THE ENGINEER HAS READ TEXT OR REVIEWED ANY TECHNICAL DATA OF A MANUFACTURED ITEM AND ITS COMPONENTS EXCEPT WHERE THE VENDOR HAS SPECIFICALLY MENTIONED ALL DIFFERENCES BETWEEN THE SUBSTITUTED PRODUCT AND THE SPECIFIED MODEL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EQUIPMENT, WIRING, DEVICES, ETC. REQUIRED FOR THE PROPER INSTALLATION OF THE SUBSTITUTED PRODUCT. THIS INCLUDES MODIFICATIONS OF ANY KIND THAT ARE REQUIRED TO ALL ASSOCIATED SYSTEMS AFFECTED BY THE SUBSTITUTION. SUCH ITEMS SHALL BE PROVIDED AT THE FULL EXPENSE OF THE CONTRACTOR WITH NO COSTS INCURRED TO THE OWNER.
- ALL SUBSTITUTED PRODUCTS SHALL CONFORM TO PERFORMANCE AND SPATIAL REQUIREMENTS IN THESE SPECIFICATIONS AND DRAWINGS. ALL MODIFICATIONS OR REPLACEMENTS OF ANY PRODUCTS THAT DO NOT MEET THESE REQUIREMENTS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.

19. THE CONTRACTOR SHALL PROVIDE TESTS FOR EACH OF THE FOLLOWING:

- PRIOR TO ENERGIZING THE ELECTRICAL SYSTEM, THE CONTRACTOR SHALL PROVIDE 600-VOLT INSULATION RESISTANCE TESTS FOR ALL DISTRIBUTION AND UTILIZATION EQUIPMENT. THE CONTRACTOR SHALL PROVIDE A SUITABLE AND STABLE SOURCE OF TEST POWER. THE INSULATION TEST SHALL BE A "MEGGER" TEST AT 500 VOLTS DC FOR 30 SECONDS. THE TEST SHALL BE CONDUCTED IN THE PRESENCE OF THE OWNER. A TEST REPORT SHALL BE SUBMITTED TO THE OWNER. THE MINIMUM INSULATION RESISTANCE SHALL BE 1,000,000

- OHMS FOR #12AWG CONDUCTORS AND 250,000 OHMS FOR LARGER CONDUCTORS. CONDUCTORS TESTING BELOW THE MINIMUM INSULATION RESISTANCE SHALL BE REPLACED AND TESTED AGAIN.
- THE CONTRACTOR SHALL PERFORM A CONTINUITY TEST ON THE ENTIRE ELECTRICAL SYSTEM PRIOR TO ENERGIZING THE SYSTEM TO INSURE PROPER CABLE CONNECTIONS.
 - THE CONTRACTOR SHALL PERFORM CONNECTION TORQUE TESTS FOR ALL LARGER CONDUCTOR BOLTED CONNECTIONS USING A TORQUE WRENCH. TORQUE SHALL BE TO NATIONAL ELECTRICAL TESTING ASSOCIATION'S (NETA) STANDARDS.
 - THE CONTRACTOR SHALL PERFORM MECHANICAL OPERATION TESTS FOR ALL ELECTRICAL EQUIPMENT, SUCH AS DISCONNECT SWITCHES, CIRCUIT BREAKERS, ETC.; TO VERIFY THAT THE MECHANICAL PORTIONS OF THE DEVICE ARE FUNCTIONING.
 - AT THE COMPLETION OF THE LIFE-SAFETY SYSTEM INSTALLATION, THE CONTRACTOR SHALL TEST ALL FIRE ALARM AND EMERGENCY LIGHTING DEVICES. THE CONTRACTOR SHALL SUBMIT A REPORT TO THE ENGINEER VERIFYING THAT THE SYSTEMS ARE FULLY OPERATIONAL.

B. ELECTRICAL DEMOLITION - 260501:

- PRIOR TO SUBMISSION OF BID, THE CONTRACTOR SHALL THOROUGHLY INSPECT THE WORK AREA. BASED ON THIS INSPECTION, THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT TO ACCOMPLISH DEMOLITION WORK.
 - THE ELECTRICAL CONTRACTOR SHALL INCLUDE A CONTINGENCY TO RELOCATE AND/OR RE-SUPPORT AS REQUIRED ANY EXISTING EQUIPMENT, DEVICES, WIRING, ETC. THAT WILL BE AFFECTED BY THE SCOPE OF WORK WHETHER SUCH ITEMS ARE SPECIFICALLY SHOWN ON THE DRAWINGS OR NOT. NO ADDITIONAL COSTS SHALL BE INCURRED TO THE OWNER DURING CONSTRUCTION FOR RELOCATION OF THESE ITEMS.
- AS PART OF DEMOLITION WORK, THE CONTRACTOR IS RESPONSIBLE FOR KEEPING EXISTING SYSTEMS (NOT SCHEDULED FOR REMOVAL) ENERGIZED. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SUPPORTS, WIRING DEVICES, WIRE AND CONDUIT AS REQUIRED TO KEEP EXISTING EQUIPMENT AND/OR DEVICES ACTIVE, WHETHER THEY SHARE THE SAME CIRCUITS AS DEMOLITION ITEMS OR NOT. THIS INCLUDES EQUIPMENT FEEDERS, RECEPTACLE AND LIGHTING CIRCUITS, COMMUNICATION SYSTEMS, FIRE ALARM SYSTEMS AND CIRCUITS, ETC.
- EXTEND EXISTING INSTALLATIONS USING MATERIALS AND METHODS COMPATIBLE WITH THE EXISTING ELECTRICAL SYSTEMS.
- VERIFY THAT ALL ABANDONED WIRING AND EQUIPMENT SERVE ONLY ABANDONED FACILITIES.
- REMOVE ALL ABANDONED WIRING AND EXPOSED CONDUIT, INCLUDING THOSE ABANDONED ABOVE ACCESSIBLE CEILING FINISHES. CUT CONDUIT FLUSH WITH WALLS AND FLOORS; AND PATCH SURFACES.
- ALL EXISTING BRANCH CIRCUITS NOT TO BE REUSED SHALL BE REMOVED BACK TO SERVING PANELBOARD. CIRCUIT BREAKERS SHALL BE LABELED AS SPARE AND PLACED IN THE "OFF" POSITION. EXISTING CONDUIT SHALL REMAIN FROM PANELBOARD TO ABOVE ACCESSIBLE CEILING SPACE.
- SINCE PROPOSED RENOVATIONS OF THE PROJECT DO NOT ENCOMPASS THE ENTIRE FLOOR, IT IS ANTICIPATED THAT MANY OF THE EXISTING CIRCUITS AND BRANCH CIRCUIT BREAKERS IN THE EXISTING PANELBOARDS MAY BE NEEDED TO SERVE EXISTING LOADS NOT AFFECTED BY THE MODIFICATIONS. HOWEVER, IT IS THE INTENTION OF THE ELECTRICAL DESIGN TO USE EXISTING SPARE CIRCUITS AND THOSE CIRCUITS MADE SPARE BY THE DEMOLITION WORK TO MAXIMUM EXTENT POSSIBLE. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXACT CIRCUIT NUMBER AND PANELBOARD DESIGNATION.
- ASBESTOS PROCEDURE: THE CONTRACTOR SHALL, UPON CONTACTING MATERIAL SUSPECTED OF BEING ASBESTOS, NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY AND WORK AROUND SUSPECTED AREA.

C. WIRES AND CABLES - 260519:

- ALL CONDUCTORS SHALL BE SOFT 98% MINIMUM CONDUCTIVITY REFINED COPPER, INSULATION TYPE "THHN/THWN" RATED 600 VOLTS UNLESS INDICATED OTHERWISE.
 - ALL CONDUCTORS INSTALLED UNDERGROUND SHALL BE INSULATION TYPE "THWN" UNLESS INDICATED OTHERWISE REGARDLESS IF THE CONDUCTORS ARE INSTALLED IN CONDUIT.
- MINERAL INSULATED (TYPE MI) CABLE SHALL BE 2-HOUR FIRE-RATED SOLID HIGH-CONDUCTIVITY COPPER RATED 600 VOLTS WITH 90° TEMPERATURE RATING. CONDUCTORS SHALL HAVE MAGNESIUM OXIDE INSULATION MATERIAL AND SEAMLESS SOFT-DRAWN COPPER SHEATH MATERIAL.
 - MI CABLE SHALL COMPLY WITH UL 2196, "TESTS FOR FIRE RESISTIVE CABLES".
- ALL CONDUCTOR CABLE FOR VARIABLE FREQUENCY DRIVE (VFD) FEEDERS SHALL BE FLEXIBLE TYPE TC (FINELY STRANDED TINNED COPPER) INSULATION TYPE XLPE RATED 600 VOLTS WITH SPIRALED COPPER TAPE SHIELDING, THREE SYMMETRICAL TINNED COPPER 100%-RATED GROUNDS; AND BLACK SUNLIGHT- AND OIL-RESISTANT TYPE JACKET MATERIAL.
 - VFD CONDUCTOR CABLE SHALL BE INSTALLED BETWEEN VARIABLE FREQUENCY DRIVE AND ASSOCIATED MOTOR.
- METAL CLAD CABLE MAY BE USED FOR INDOOR LIGHTING AND RECEPTACLE BRANCH CIRCUITS WHEN WRITTEN APPROVAL IS GIVEN BY THE OWNER AND SHALL BE INSTALLED ONLY WHERE PERMITTED BY CODE. METAL CLAD CABLE SHALL BE LIGHTWEIGHT GALVANIZED STEEL INTERLOCKED ARMOR WITH CONDUCTORS AS SPECIFIED ABOVE. CABLE SHALL BE PROVIDED WITH SEPARATE EQUIPMENT GROUNDING CONDUCTOR. ARMOR SHALL NOT BE USED AS MEANS OF GROUNDING.
- ALL WIRES #10AWG AND SMALLER SHALL BE SOLID COPPER. ALL WIRES #8AWG AND LARGER SHALL BE STRANDED COPPER.
- FACTORY COLOR CODE USING THE SAME CODE THROUGHOUT FOR CONDUCTORS AS FOLLOWS:
 - 120/208 VOLTS - BLACK, RED, BLUE AND WHITE NEUTRAL CONDUCTOR
 - 277/480 VOLTS - BROWN, ORANGE, YELLOW AND GRAY NEUTRAL CONDUCTOR
 - GREEN CONDUCTOR SHALL BE USED WHERE EQUIPMENT GROUND WIRE IS SPECIFIED.
 - GREEN WITH YELLOW STRIPE CONDUCTOR SHALL BE USED WHERE ISOLATED GROUND WIRE IS SPECIFIED.
- MINIMUM CONDUCTOR SIZES SHALL BE #12AWG FOR POWER AND LIGHTING CIRCUITS, #10AWG FOR BRANCH CIRCUIT RUNS LONGER THAN 100 FEET AND #14AWG FOR CONTROL CIRCUITS UNLESS INDICATED OTHERWISE.
- NO CONDUCTORS SHALL BE PULLED INTO ANY CONDUIT RUN BEFORE ALL CONDUIT JOINTS ARE TIGHT AND ENTIRE RUN IS SECURED IN PLACE. WHERE NECESSARY FOR WIRING INSTALLATION, PULLING COMPOUND SHALL BE POWDERED SOAPSTONE, MINERALLAC #100 OR APPROVED EQUAL.
- TERMINATIONS OF #6AWG OR LARGER AT SWITCHBOARDS, TRANSFORMERS AND UPS SYSTEMS SHALL BE MADE WITH COMPRESSION TYPE CONNECTORS. TERMINATIONS OF #6AWG OR LARGER AT PANELBOARDS SHALL BE MADE WITH MECHANICAL LUGS.
- JOINS AND TAPS OF #6AWG OR LARGER SHALL BE MADE WITH PRESSURE-INDENT TYPE CONNECTORS.
- TAG ALL FEEDERS ROUTED THROUGH ELECTRICAL BOXES, GUTTER SPACES AND WIREWAYS.
- ACCEPTABLE MANUFACTURERS ARE ALLIED, GENERAL CABLE, PHELPS DODGE, ROME, SIMPLEX AND SOUTHWIRE FOR WIRES AND CABLES.
- ACCEPTABLE MANUFACTURERS ARE NVENT PYROTENAX OR APPROVED EQUAL FOR TYPE MI CABLE.
- ACCEPTABLE MANUFACTURERS ARE ALLIED, BELDEN AND SOUTHWIRE FOR VFD CABLE.
- ACCEPTABLE MANUFACTURERS ARE AFC, ALLIED AND SOUTHWIRE FOR METAL CLAD CABLE.

D. GROUNDING AND GROUND--FAULT PROTECTION - 260526:

- GROUNDING SHALL COMPLY WITH NEC ARTICLE 250.
- EACH CIRCUIT SHALL HAVE AN EQUIPMENT GROUND CONDUCTOR. MULTI-WIRE CIRCUITS OF DIFFERENT PHASES MAY SHARE EQUIPMENT GROUND CONDUCTOR. THE EQUIPMENT GROUND CONDUCTOR SHALL NOT BE LESS THAN #12AWG OR AS SHOWN ON DRAWINGS. PROVIDE ELECTRICALLY CONTINUOUS, TIGHT GROUNDING CONNECTIONS FOR ALL WIRING DEVICES UNLESS NOTED OTHERWISE. WIRING DEVICE GROUNDING CONNECTIONS SHALL BE MADE VIA PIGTAIL FROM

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DATE	REV	DESCRIPTION	BY
Southport Associates			
Southport Engineering Associates, PC 11 Bailey Avenue Ridgefield, CT 06877			
Tel.: (203)431-6844 Fax: (203)431-6877			
PROJECT: RIDGEFIELD PARKS & REC HVAC UNIT REPLACEMENT 195 DANBURY ROAD, RIDGEFIELD, CT 06877			
DRAWING TITLE: ELECTRICAL LEGENDS, NOTES AND SPECIFICATIONS			
SCALE:	NONE	DRAWN BY:	MM
DATE:	01/20	CHECKED BY:	BU
PROJECT NO:	098-269	APPROVED BY:	BU
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ELECTRICAL SPECIFICATIONS (CONTINUED)

- GROUND SCREW WITHIN DEVICE BACK BOX. INSTALL IN STRICT ACCORDANCE WITH NEC ARTICLE 300.13 (B).

3. EQUIPMENT GROUND CONDUCTORS SHALL BE INSTALLED IN CONDUIT OR SUITABLY PROTECTED FROM DAMAGE.

4. CONDUITS ARE NOT TO BE USED AS MEANS OF GROUNDING.

5. ACCEPTABLE MANUFACTURERS ARE BURNDY, ERICO AND SQUARE D.
- SUPPORTING DEVICES – 260529:

1. SUPPORT OF NEW ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE BEST INDUSTRY PRACTICES. DO NOT FASTEN SUPPORTS TO MECHANICAL EQUIPMENT, DUCTWORK, PIPING OR CONDUIT.

2. FURNISH AND INSTALL STEEL SUPPORT FRAMES, MEMBERS, HANGERS, BRACKETS, ETC. AS REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL EQUIPMENT.

3. SUPPORT FRAMES FOR NEW LIGHT FIXTURES INDEPENDENT OF OTHER SUPPORTS WHEREVER POSSIBLE.

4. SUPPORT FRAMES BOLTED TO FLOOR SLAB AND EXTENDING TO SLAB ABOVE SHALL BE PROVIDED AS REQUIRED FOR FREE STANDING EQUIPMENT OR WHERE WALLS ARE UNABLE TO SUPPORT EQUIPMENT WEIGHT.

5. ALL CONDUITS UP TO 1 1/2" TRADE SIZE SHALL BE SUPPORTED BY CLAMPS OR PIPE STRAPS SECURED TO BLACK IRON CEILING SUPPORT SYSTEM, STRUCTURAL MEMBERS OR SLAB ABOVE AT INTERVALS NO GREATER THAN 7'-0" AND WITHIN 12" OF CONDUIT END. ALL CONDUITS 2" TRADE SIZE OR LARGER SHALL BE SUPPORTED BY APPROVED HANGERS AND INSERTS FROM SLAB ABOVE AT INTERVALS NO GREATER THAN 10'-0" AND WITHIN 18" OF CONDUIT END. SUPPORT FROM CEILING TEES, CROSS TEES OR WIRES IS PROHIBITED.
- RACEWAYS FOR ELECTRICAL SYSTEMS – 260533:

1. MATERIALS:

1.1. IMC: HOT-DIPPED GALVANIZED STEEL – CONDUIT MAY BE USED FOR RISERS, PANELBOARD FEEDERS, THREE-PHASE MOTOR FEEDERS; AND FOR CONCEALED RUNS 2" TRADE SIZE AND LARGER. USE WITH THREADED FITTINGS ONLY.

1.2. RMC: HOT-DIPPED RIGID GALVANIZED STEEL – UNLESS OTHERWISE NOTED: CONDUIT TO BE USED FOR ALL RISERS, PANELBOARD FEEDERS, THREE-PHASE MOTOR FEEDERS, CONDUIT INSTALLED IN SLAB; AND FOR EXPOSED RUNS 2" TRADE SIZE AND LARGER. CONDUIT SHALL BE GALVANIZED FOR CORROSION PROTECTION FOR CONDUIT INSTALLED IN CONCRETE SLAB. USE WITH THREADED FITTINGS ONLY.

1.3. LFMC: HELICALLY WOUND GALVANIZED STEEL STRIP WITH MOISTURE SEALING JACKET (72" MAXIMUM LENGTH) – CONDUIT TO BE USED FOR ALL LOCATIONS WITHIN 6'-0" OF A WATER SOURCE OR WHERE EXPOSED TO DAMP ATMOSPHERES OR CORROSIVE MATERIALS. USE WITH LIQUID-TIGHT, INSULATED-THROAT, COMPRESSION CONNECTORS.

2. KEEP CONDUITS AND OTHER OPENINGS CLOSED TO PREVENT ENTRY OF FOREIGN MATTER DURING CONSTRUCTION AND PRIOR TO WIRE OR CABLE INSTALLATION.

3. ALL CONDUIT IN FINISHED AREAS SHALL BE CONCEALED IN WALLS OR ABOVE FINISHED CEILING WHERE POSSIBLE. IN FINISHED AREAS WHERE ANY CONDUIT CANNOT BE CONCEALED DUE TO FIELD CONDITIONS, THE GENERAL CONTRACTOR SHALL PAINT CONDUIT AS DIRECTED BY THE ARCHITECT.

4. ALL CONDUIT SHALL BE SECURELY FASTENED IN PLACE TO STRUCTURAL MEMBERS. DO NOT FASTEN TO PIPING, MECHANICAL EQUIPMENT, ETC. PROVIDE HANGERS AND/OR SUPPORTS AT EACH ELBOW AND WITHIN 12" OF EACH CONDUIT TERMINATION INTO A BOX, ENCLOSURE OR CABINET. PROVIDE APPROVED BEAM CLAMPS, PIPE STRAPS OR HEAVY IRON TIES WHERE CONDUITS PENETRATE FLOOR/CEILING SLABS.

5. ALL CONDUIT TERMINATING IN METAL ENCLOSURES SHALL BE PROVIDED WITH AN INSULATED BUSHING. PROVIDE "GROUNDING" TYPE BUSHING WHERE REQUIRED.

6. EXPANSION FITTINGS SHALL BE PROVIDED AT ALL EXPANSION JOINTS.

7. CONDUIT TO BE INSTALLED TO AVOID PROXIMITY WITH STEAM AND HOT WATER PIPING. MAINTAIN 12" BETWEEN CONDUIT AND PIPING WHEREVER POSSIBLE. AT NO POINT SHALL SPACING BE LESS THAN 4" BETWEEN CONDUIT AND PIPING INSULATION.

8. ACCEPTABLE MANUFACTURERS ARE ALLIED TUBE & CONDUIT, NATIONAL WIRE PRODUCTS, REPUBLIC AND TRIANGLE FOR CONDUITS AND ASSOCIATED FITTINGS.

9. ACCEPTABLE MANUFACTURERS ARE HUBBELL, THOMAS & BETTS AND WIREMOLD FOR SURFACE RACEWAYS.
- BOXES FOR ELECTRICAL SYSTEMS – 260534:

1. OUTLET, JUNCTION AND PULL BOXES SHALL BE INDUSTRY STANDARD GAUGE, GALVANIZED SHEET STEEL. BOXES SHALL BE INSTALLED WHERE NECESSARY TO FULFILL DESIGN INTENT REGARDLESS OF INDICATIONS AS SHOWN ON DRAWINGS. ALL BOXES SHALL BE MADE ACCESSIBLE. PROVIDE ACCESS PANELS WHERE NECESSARY AND COORDINATE LOCATIONS WITH THE ARCHITECT.

2. BARRIERS SHALL BE INDUSTRY STANDARD GAUGE, CONDUCTIVE MATERIAL WITH ANGLE IRON FRAMING SUPPORT AROUND ITS PERIMETER AND SHALL HAVE ADEQUATE THICKNESS (1/8" MINIMUM) AS REQUIRED FOR MECHANICAL STRENGTH NECESSARY TO FULLY PROTECT THE SYSTEM. BARRIERS SHALL BE PROVIDED BETWEEN SEPARATE SYSTEMS AND BETWEEN SEPARATE VOLTAGES.

3. NORMAL POWER AND EMERGENCY POWER SYSTEMS SHALL NOT BE INSTALLED IN COMMON ELECTRICAL BOXES AND SHALL BE KEPT SEPARATE.

4. PROVIDE ADEQUATE OUTLET BOXES FOR MOUNTING ALL DEVICES. DO NOT USE ROUND JUNCTION BOXES.

4.1. FURNISH AND INSTALL 4 11/16" SQUARE BY 1 1/2" OR 2 1/8" DEEP BACK BOX WITH EXTENSION RING FOR SWITCH AND RECEPTACLE OUTLETS. MULTI-GANG BACK BOXES SHALL BE APPROPRIATELY SIZED TO ACCOMMODATE INSTALLED WIRING DEVICES.

4.2. FURNISH AND INSTALL 4" OCTAGONAL BY 2 1/8" DEEP BACK BOX WITH 3/8" FIXTURE STUD FOR CEILING AND/OR SUSPENDED LIGHTING OUTLETS.

4.3. FURNISH AND INSTALL WALL BOX, FLOOR BOX OR POKE-THRU DEVICE FOR POWER CONNECTION OF MODULAR FURNITURE FEEDS. REFER TO ARCHITECTURAL DRAWINGS FOR BOX REQUIREMENTS. PROVIDE WITH 3/4" FLEXIBLE CONDUIT WHIP TO FURNITURE SYSTEM POWER CABLING.

4.3.a. COORDINATE EXACT BOX QUANTITIES AND LOCATIONS WITH THE MODULAR FURNITURE INSTALLER.

5. JUNCTION AND PULL BOXES SHALL HAVE REMOVABLE SCREW-ON COVER PLATES AND BE PROVIDED EVERY 100 FEET OF CONDUIT RUN AND WHERE NECESSARY TO FACILITATE THE INSTALLATION OF EQUIPMENT AND WIRING.

5.1. BOXES SERVING FIRE ALARM SYSTEM SHALL BE PAINTED RED IN COLOR AND LABELED "FIRE".

5.2. BOXES SERVING EMERGENCY SYSTEM SHALL BE PAINTED YELLOW IN COLOR.

5.3. BOXES SHALL BE SIZED TO COMPLY WITH THE MINIMUM BENDING RADIUS CRITERIA AS SPECIFIED BY THE NEC.

5.4. BOXES HAVING ANY SINGLE DIMENSION LARGER THAN 36" SHALL BE PROVIDED WITH CABLE SUPPORT RACKS. CABLE SUPPORT RACKS SHALL CONSIST OF 3/4" DIAMETER STEEL PIPING WITH FLANGED ENDS BOLTED TO FRAME OF BOX AND FITTED CONTINUOUS FIBER INSULATING SLEEVES ARRANGED IN TIERS. INSTALL RACKS WITHIN 36" OF BOX.

6. ACCEPTABLE MANUFACTURERS ARE APPLETON, CROUSE HINDS, O.Z./GEDNEY, RACO AND THOMAS & BETTS FOR OUTLET, JUNCTION AND PULL BOXES.

7. ACCEPTABLE MANUFACTURERS ARE FSR, HUBBELL, THOMAS & BETTS AND WIREMOLD FOR FLOOR AND POKE-THRU BOXES.

8. ACCEPTABLE MANUFACTURERS ARE BURNDY, CROUSE HINDS, NEPCO, O.Z./GEDNEY, RACO AND THOMAS & BETTS FOR RUSHINGS, CONNECTORS, COUPLINGS AND FITTINGS.

- VIBRATION AND SEISMIC CONTROLS FOR ELECTRICAL SYSTEMS – 260548:

1. PROVIDE SEISMIC RESTRAINTS, INCLUDING ALL STRUCTURAL STEEL MEMBERS, INSERTS, ANCHORS, WIRES, ETC. AS REQUIRED FOR ALL ELECTRICAL EQUIPMENT. ALL SEISMIC RESTRAINTS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH ALL LOCAL CODES, ORDINANCES AND THE LOCAL AUTHORITY HAVING JURISDICTION.
- ELECTRICAL IDENTIFICATION – 260553:

1. PROVIDE THERMOPLASTIC ENGRAVED NAMEPLATES FOR ALL ELECTRICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO: CIRCUIT BREAKERS, DISCONNECT SWITCHES, PANELBOARDS, SWITCHBOARDS, TRANSFORMERS, ETC. AS REQUIRED BY THE NATIONAL ELECTRIC CODE. NAMEPLATES SHALL INDICATE EQUIPMENT NAME, VOLTAGE AND AMPERAGE.

2. NAMEPLATES FOR EQUIPMENT ON NORMAL POWER SHALL BE BLACK WITH WHITE LETTERING. NAMEPLATES FOR EQUIPMENT ON EMERGENCY POWER SHALL BE YELLOW WITH BLACK LETTERING.

3. PROVIDE "DANGER" LABELING FOR ALL ELECTRICAL EQUIPMENT, BOXES, ETC. AS REQUIRED BY NEC CODES. LABELING SHALL INCLUDE ALL REQUIREMENTS FOR ARC-FLASH AND FAULT-CURRENT IDENTIFICATION IN ACCORDANCE WITH NEC CODES.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MARKING ALL FIXED EQUIPMENT, RECEPTACLES AND SWITCHES WITH THE PANELBOARD NAME AND CIRCUIT BREAKER NUMBER SERVING EACH DEVICE WITH TYPEWRITTEN LABELS.
- OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDIES – 260573:

1. SHORT-CIRCUIT FAULT CURRENTS:

1.1. CALCULATE THE MAXIMUM AVAILABLE SHORT-CIRCUIT CURRENT IN RMS SYMMETRICAL AMPERES FOR THE ELECTRICAL POWER DISTRIBUTION SYSTEM FROM "NORMAL/UTILITY" AND "EMERGENCY/GENERATOR" SOURCES. INCLUDE STUDIES OF SYSTEM SWITCHING CONFIGURATIONS AND ALTERNATE OPERATIONS THAT COULD RESULT IN MAXIMUM FAULT CONDITIONS. CALCULATE MOMENTARY AND INTERRUPTING DUTIES ON THE BASIS OF MAXIMUM AVAILABLE FAULT CURRENT.

1.2. FAULT CURRENTS SHALL BE DETERMINED AT ALL SWITCHBOARDS, PANELBOARDS, MOTOR CONTROL CENTERS AND CIRCUIT BREAKER POSITIONS OF THE ELECTRICAL POWER DISTRIBUTION SYSTEM. THE CALCULATION SHALL BE FOR THE CURRENT IMMEDIATELY AFTER INITIATION AND FOR A THREE-PHASE BOLTED SHORT-CIRCUIT. PERFORM A SELECTIVE DEVICE COORDINATION STUDY USING THE FAULT CURRENT LEVELS ESTABLISHED BY THE SHORT-CIRCUIT CALCULATIONS.

1.3. PREPARE A WRITTEN REPORT FOR SUBMITTAL TO THE ENGINEER. THE STUDY SHALL INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING:

1.3.a. PROVIDE DEVICE SETTINGS AND RATINGS OF ALL OVERCURRENT PROTECTIVE DEVICES.

1.3.a.1. FOR 600-VOLT OVERCURRENT PROTECTIVE DEVICES, ENSURE THAT INTERRUPTING RATINGS ARE EQUAL TO OR HIGHER THAN CALCULATED 1/2-CYCLE SYMMETRICAL FAULT CURRENT.

1.3.a.2. FOR DEVICES AND EQUIPMENT RATED FOR ASYMMETRICAL FAULT CURRENT, APPLY MULTIPLICATION FACTORS LISTED IN THE STANDARDS FOR 1/2-CYCLE SYMMETRICAL FAULT CURRENT.

1.3.b. VERIFY ADEQUACY OF PHASE CONDUCTORS AT THE MAXIMUM THREE-PHASE BOLTED FAULT CURRENTS. VERIFY ADEQUACY OF EQUIPMENT GROUNDING CONDUCTORS AND GROUNDING ELECTRODE CONDUCTORS AT THE MAXIMUM GROUND-FAULT CURRENTS.

1.3.c. ENSURE THAT SHORT-CIRCUIT WITHSTAND RATINGS ARE EQUAL TO OR HIGHER THAN CALCULATED 1/2-CYCLE SYMMETRICAL FAULT CURRENT.

1.3.d. DEMONSTRATE SELECTIVE COORDINATION BY COMPUTER-GENERATED, TIME-CURRENT COORDINATION PLOTS.

1.3.e. SHOW CALCULATED X/R RATIOS AND EQUIPMENT INTERRUPTING RATING FOR 1/2-CYCLE FAULT CURRENTS ON THE ELECTRICAL POWER DISTRIBUTION SYSTEM DIAGRAM.

1.3.f. PROVIDE TABULAR FORMAT OF SETTINGS SELECTED FOR OVERCURRENT PROTECTIVE DEVICES.

1.3.g. PROVIDE COORDINATION CURVES:

1.3.g.1. PREPARE TO DETERMINE SETTINGS OF OVERCURRENT PROTECTIVE DEVICES TO ACHIEVE SELECTIVE COORDINATION.

1.3.g.2. GRAPHICALLY ILLUSTRATE THAT ADEQUATE TIME SEPARATION EXISTS BETWEEN DEVICES INSTALLED IN SERIES, INCLUDING POWER UTILITY COMPANY'S UPSTREAM DEVICES.

1.3.g.3. PREPARE SEPARATE SETS OF CURVES FOR SWITCHING SCHEMES; AND FOR EMERGENCY PERIODS WHERE POWER SOURCE IS LOCAL GENERATION.
- ARC-FLASH FAULT CURRENTS:

2.1. USE FAULT CURRENT LEVELS AND EQUIPMENT DATA CONTAINED IN THE SHORT-CIRCUIT STUDY; AND PERFORM AN ARC-FLASH STUDY THAT COMPLIES WITH THE LATEST EDITION OF THE FOLLOWING CODES AND STANDARDS:

2.1.a. OSHA CFR 39 PART 1910 SUBPARTS

2.1.b. NATIONAL ELECTRIC CODE (NFPA 70) SECTION 110.116

2.1.c. STANDARD FOR ELECTRICAL SAFETY IN THE WORK PLACE (NFPA 70E)

2.1.d. IEEE GUIDE FOR PERFORMING ARC-FLASH ANALYSIS CALCULATIONS (IEEE STD. 1584)

2.1.e. NATIONAL ELECTRIC SAFETY CODE (IEEE STD C2)

2.2. FAULT CURRENTS SHALL BE DETERMINED AT ALL TRANSFORMERS, SWITCHBOARDS, PANELBOARDS, MOTOR CONTROL CENTERS, FUSES, ENCLOSED SWITCHES, CIRCUIT BREAKERS AND TRANSFER SWITCHES OF THE ELECTRICAL POWER DISTRIBUTION SYSTEM.

2.3. PREPARE A WRITTEN REPORT FOR SUBMITTAL TO THE ENGINEER. THE STUDY SHALL INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING:

2.3.a. DETERMINE THE PROTECTIVE DEVICE CHARACTERISTICS AND DURATION OF THE ARC.

2.3.b. DOCUMENT ALL SYSTEM VOLTAGES AND CLASSES OF EQUIPMENT.

2.3.c. SELECT THE APPROPRIATE WORKING DISTANCE FOR EQUIPMENT.

2.3.d. DETERMINE THE INCIDENT ENERGY FOR ALL EQUIPMENT IN THE STUDY.

2.3.e. DETERMINE THE FLASH-PROTECTION BOUNDARY FOR ALL EQUIPMENT IN THE STUDY.
- PANELBOARDS – 262416:

1. EXISTING PANELBOARDS/LOADCENTERS: CLEAN EXPOSED SURFACES AND CHECK TIGHTNESS OF ALL ELECTRICAL CONNECTIONS. REPLACE ALL DAMAGED CIRCUIT BREAKERS AND PROVIDE NEW CIRCUIT BREAKERS WHERE NECESSARY. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING PANELBOARD/LOADCENTER IN MANUFACTURER AND AIC RATING. PROVIDE CLOSURE PLATES FOR VACANT POSITIONS. PROVIDE NEW UPDATED TYPEWRITTEN DIRECTORY SHOWING REVISED CIRCUITING ARRANGEMENT. THE CONTRACTOR SHALL VERIFY ALL CONDUIT AND FEEDER SIZES ASSOCIATED WITH PANELBOARDS/LOADCENTERS. ALL CODE DISCREPANCIES SHALL BE BROUGHT TO ATTENTION OF THE ARCHITECT AND THE ENGINEER.
- WIRING DEVICES – 262726:

1. WIRING DEVICES SHALL BE SPECIFICATION GRADE AND AS FOLLOWS:

1.1. RECEPTACLES: PROVIDE UL498 LISTED COMMERCIAL GRADE, 20A/125V NEMA 5-20R, DECORATIVE ARCHITECTURAL STYLE RECEPTACLES UNLESS INDICATED OTHERWISE.

1.2. MOTOR-RATED SWITCHES: PROVIDE U.L. LISTED COMMERCIAL GRADE, 600VAC, TOGGLE-OPERATED, HEAVY-DUTY SWITCH SUITABLE FOR USE AS MOTOR DISCONNECT. PROVIDE AMPERAGE RATING WITH 2- OR 3-POLES AS INDICATED ON DRAWINGS.

1.3. FACEPLATES: PROVIDE THERMOPLASTIC FACEPLATES WITH COLOR AND STYLE AS DIRECTED BY THE ARCHITECT IN ALL PUBLIC SPACES. PROVIDE STAINLESS STEEL FACEPLATES IN MECHANICAL AND ELECTRICAL SPACES. FACEPLATES SHALL BE INSTALLED FLAT AGAINST WALL. NO GAPS WILL BE ALLOWED.

1.4. ACCEPTABLE MANUFACTURERS FOR RECEPTACLES AND SWITCHES ARE COOPER ARROW-HART DECORATOR SERIES, LEVITON DECORA SERIES, LUTRON ARCHITECTURAL SERIES AND PASS & SEYMOUR DECORATOR SERIES.

1.5. ACCEPTABLE MANUFACTURERS FOR DIMMERS ARE LEVITON DECORA SERIES, LUTRON

- CONTROLS ARCHITECTURAL SERIES. PROVIDE ALL ASSOCIATED WIRING DEVICES, COMPONENTS, WIRING, ETC. AS REQUIRED TO MEET DESIGN INTENT.

1.5.a. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING DIMMER AND BALLAST MANUFACTURERS TO ENSURE COMPATIBILITY OF DEVICES.
- ACCEPTABLE MANUFACTURERS FOR COMBINATION SMOKE AND CARBON MONOXIDE DETECTORS ARE FIRST ALERT, GENTEX, KIDDE AND UNIVERSAL SECURITY INSTRUMENTS.
- ALL RECEPTACLE OUTLETS INSTALLED WITHIN 6'-0" OF SINKS OR OTHER SOURCES OF WATER SHALL BE GROUND-FAULT, CIRCUIT-INTERRUPTING TYPE.

ALL RECEPTACLE OUTLETS INSTALLED IN DWELLING UNITS, INCLUDING ALL HOTEL GUESTROOMS, SHALL BE TAMPER-RESISTANT TYPE.

ALL RECEPTACLE OUTLETS SHALL BE INSTALLED WITH GROUNDING PIN LOCATED IN THE TOP POSITION.

ALL SWITCHES SHALL BE INSTALLED WITH "OFF" IN THE BOTTOM POSITION.

ALL SWITCHES FOR PROJECTION SCREENS, PROJECTOR LIFTS, AND/OR SHADES SHALL BE INSTALLED WITH "RAISE" IN THE TOP POSITION, "OFF" IN THE CENTER POSITION AND "LOWER" IN THE BOTTOM POSITION.

ALL EXTERIOR WIRING DEVICES SHALL BE PROVIDED WITH A WEATHER-PROOF "WHILE-IN-USE" COVER.

ALL WIRING DEVICES SHALL BE INSTALLED PLUMB, SQUARE AND TRUE. WIRING DEVICES INSTALLED IN ADJACENT LOCATIONS SHALL BE ALIGNED.

WIRING DEVICES INSTALLED AT A SINGLE LOCATION SHALL BE INSTALLED IN A MULTI-GANG BACK BOX WITH SUITABLE FACEPLATE WHEREVER POSSIBLE. PROVIDE BARRIERS AS REQUIRED BY CODE.

WIRING DEVICES ON NORMAL POWER SHALL BE COLORED AS DIRECTED BY THE ARCHITECT UNLESS NOTED OTHERWISE. WIRING DEVICES ON EMERGENCY POWER SHALL BE RED IN COLOR.
- FUSES – 262813:

1. FUSES SHALL BE CURRENT-LIMITING, DUAL-ELEMENT, TIME-DELAY TYPE WITH AN INTERRUPTING CURRENT CAPACITY OF 200,000RMS AMPERES AND A CONTINUOUS CURRENT RATING AS SHOWN ON DRAWINGS.

2. FUSES SHALL HAVE AN AVERAGE MELTING TIME-CURRENT CHARACTERISTIC TO MEET UNDERWRITERS' LABORATORIES REQUIREMENTS OF "CLASS K" FOR 0-600 AMP FUSES AND "CLASS L" FOR OVER 600 AMP FUSES.

3. ACCEPTABLE MANUFACTURERS ARE BUSSMAN, GOULD SHAWMUTT AND GENERAL ELECTRIC.
- ENCLOSED SWITCHES AND CIRCUIT BREAKERS – 262816:

1. DISCONNECT SWITCHES SHALL BE "QUICK-MAKE", "QUICK-BREAK" HEAVY DUTY WITH VOLTAGE RATINGS OF 600 VOLTS FOR 480/277-VOLT SYSTEMS AND 240 VOLTS FOR 208/120-VOLT SYSTEMS. PROVIDE SINGLE OR THREE PHASE WITH AMPERE RATINGS AS SHOWN ON DRAWINGS. U.L. 98 LISTED, NEMA KS1. ENCLOSURES SHALL BE NEMA 1 FOR INDOOR AND NEMA 3R FOR OUTDOOR INSTALLATIONS.

1.1. ACCEPTABLE MANUFACTURERS ARE EATON, GENERAL ELECTRIC, SIEMENS AND SQUARE D.

2. CIRCUIT BREAKERS SHALL BE THERMAL-MAGNETIC, "QUICK-MAKE, QUICK-BREAK" TYPE WITH NONWELDING CONTACTS COMPENSATED FOR AMBIENT TEMPERATURES. PROVIDE WITH ELECTRONIC, FIELD ADJUSTABLE, LSI TRIP FUNCTIONS FOR CIRCUIT BREAKERS RATED 400 AMPERES AND ABOVE. ALL CIRCUIT BREAKERS SERVING MECHANICAL EQUIPMENT SHALL BE "HACR" RATED.

2.1. RATED 1200 AMPERES AND ABOVE: SHALL INCLUDE ARC ENERGY REDUCTION TO REDUCE CLEARING TIME BY ONE OF THE FOLLOWING METHODS:

2.1.a. ZONE-SELECTIVE INTERLOCKING

2.1.b. DIFFERENTIAL RELAYING

2.1.c. ENERGY-REDUCING MAINTENANCE SWITCHING WITH LOCAL STATUS INDICATOR

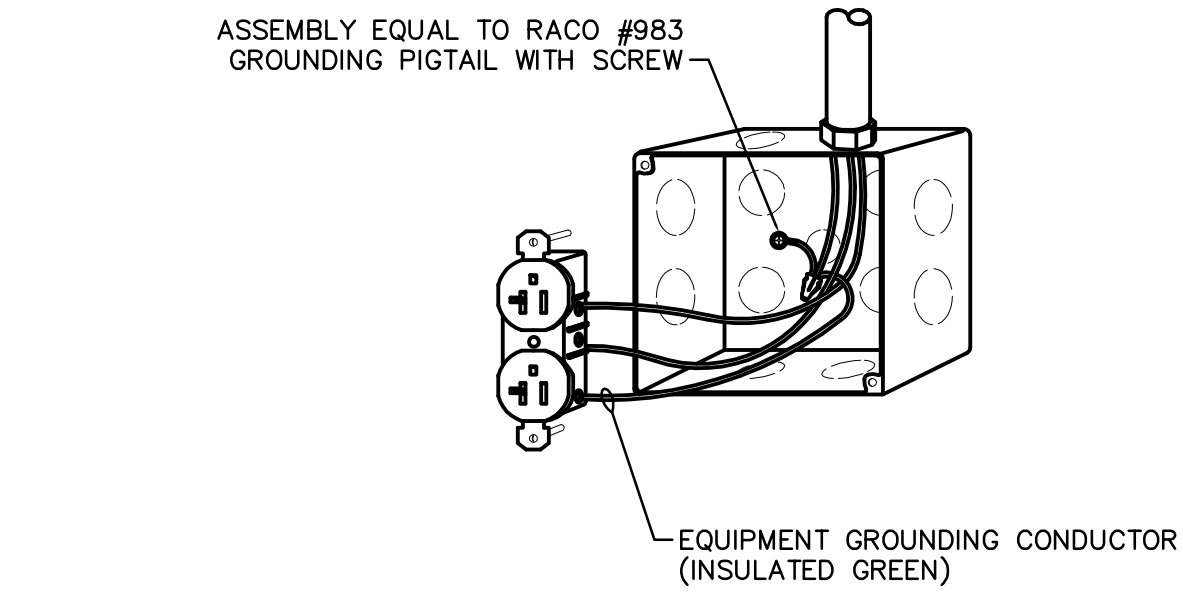
2.1.d. ENERGY-REDUCING ACTIVE ARC-FLASH MITIGATION SYSTEM

2.2. IN DWELLING UNITS: ALL 120-VOLT, 15- AND 20-AMPERE CIRCUIT BREAKERS SERVING ANY ROOM, EXCEPT FOR BATHROOMS, SHALL BE ARC-FAULT, CIRCUIT-INTERRUPTING TYPE. ALL ARC-FAULT CIRCUIT INTERRUPTING TYPE CIRCUIT BREAKERS SHALL HAVE DEDICATED NEUTRALS.

2.3. WHERE INSTALLED IN EXISTING PANELBOARDS, CIRCUIT BREAKERS SHALL MATCH THE EXISTING PANELBOARD IN MANUFACTURER AND AIC RATING.

2.4. FOR STAND-ALONE APPLICATIONS, CIRCUIT BREAKERS SHALL BE IN A NEMA 1 ENCLOSURE. PROVIDE MINIMUM SHORT CIRCUIT RATINGS OF 22,000 AMPERES SYMMETRICAL FOR 120/280-VOLT SYSTEMS AND 35,000 AMPERES SYMMETRICAL FOR 277/480-VOLT SYSTEMS UNLESS NOTED OTHERWISE.

2.4.a. ACCEPTABLE MANUFACTURERS ARE EATON, GENERAL ELECTRIC, SIEMENS AND SQUARE D.

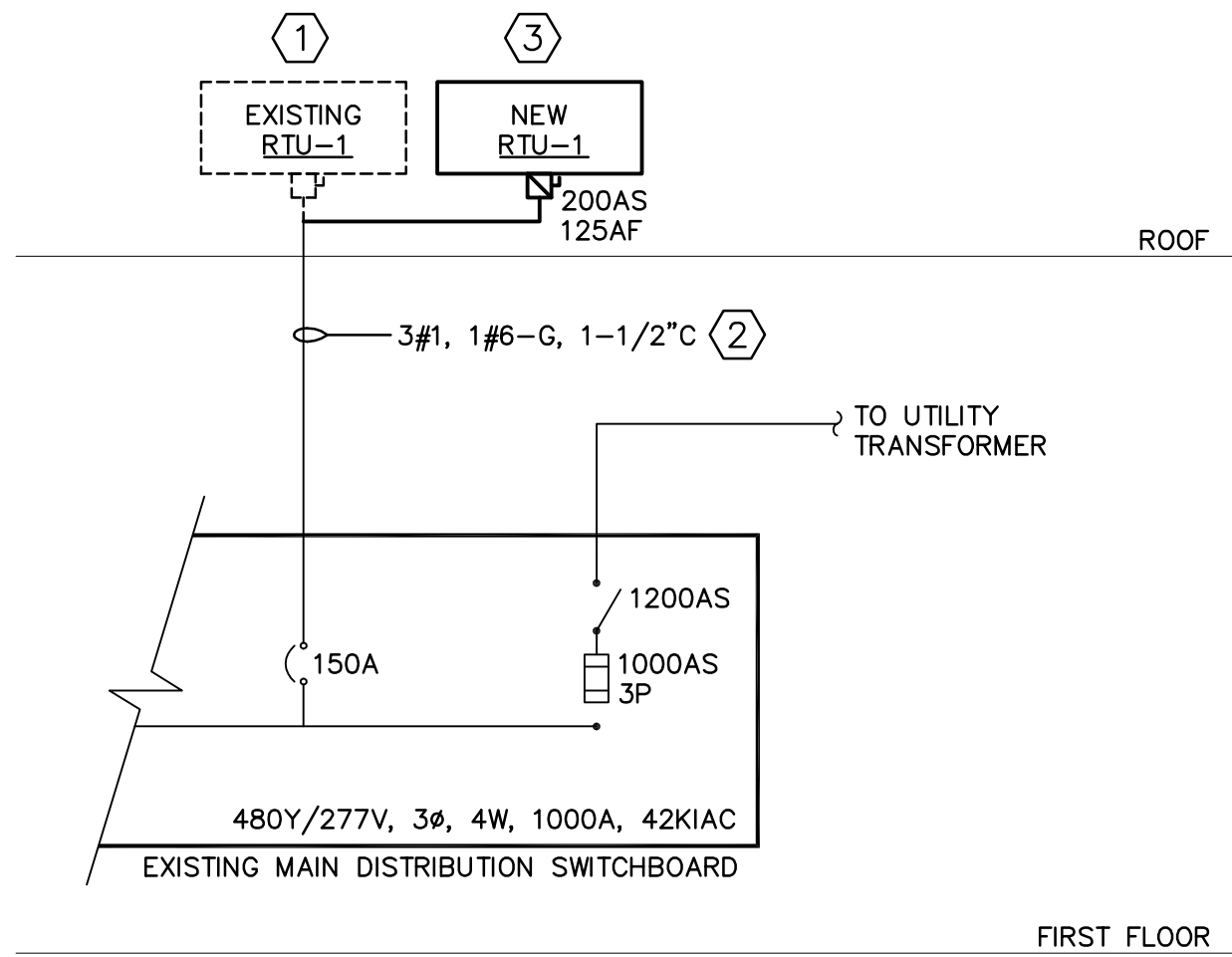


1 Device/Junction Box Grounding Detail

Scale: None

NOTES:

1. UTILIZE SAME GROUNDING METHOD FOR SWITCHES.



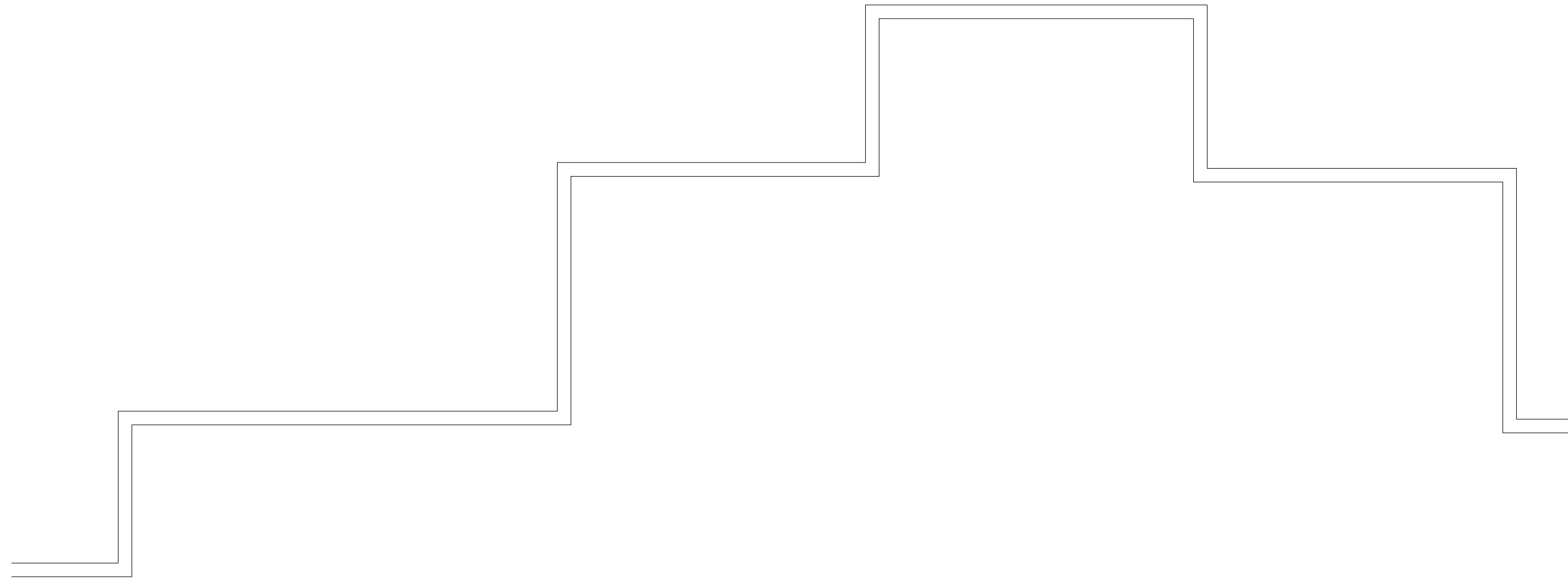
2 ELECTRICAL PARTIAL SINGLE LINE DIAGRAM

Scale: None

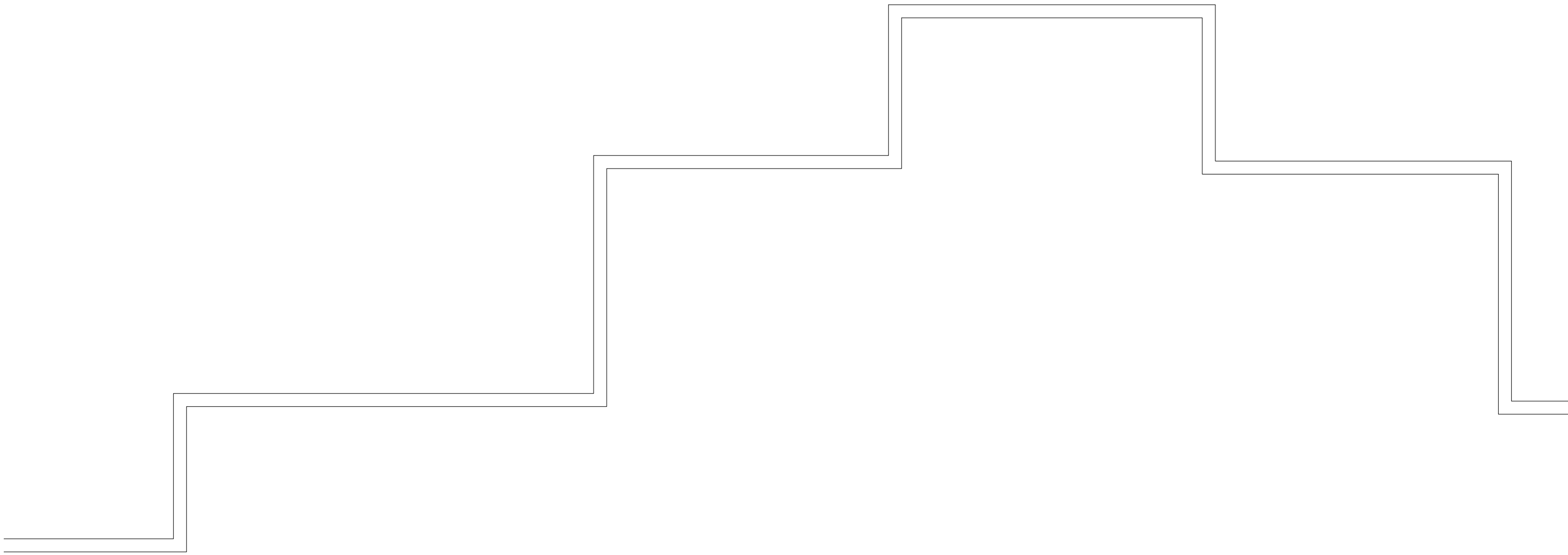
ELECTRICAL DESIGN NOTES:

- 1 EXISTING RTU-1 TO BE DEMOLISHED BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO LOCATE EXISTING CIRCUIT BREAKER FOR RTU-1. DISCONNECT EXISTING POWER AND MAKE SAFE WIRING AT RTU-1. COORDINATE WITH MECHANICAL CONTRACTOR.
- 2 ELECTRICAL CONTRACTOR TO VERIFY EXISTING ELECTRICAL CONDUCTOR IS PROPERLY SIZED AND VERIFY CONDUCTOR CONTINUITY (MEGGER TEST). ELECTRICAL CONTRACTOR TO NOTIFY ENGINEER AND REPLACE CONDUCTOR IF UNDERSIZED OR DAMAGED. CONFIRM REQUIREMENTS WITH EQUIPMENT MANUFACTURER.
- 3 NEW RTU-1 TO BE PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR. E.G. TO PROVIDE AND INSTALL NEW NEMA-3R 200A FUSIBLE DISCONNECT SWITCH WITH FUSES SIZED AS NOTED. CONNECT SWITCH TO EXISTING FEEDER WIRING AND CONDUIT AND EXTEND AS REQUIRED. ELECTRICAL CONTRACTOR TO MAKE FINAL CONNECTIONS AND REMOVE LOCATIONS FROM FEEDER BREAKER. COORDINATE SIZING AND LOCATIONS WITH MECHANICAL CONTRACTOR.

4/3/20	-	ISSUED FOR BID	BU
DATE	REV	DESCRIPTION	BY
Southport Associates			
Southport Engineering Associates, PC 11 Bailey Avenue Ridgefield, CT 06877			
Tel.: (203)431-6844 Fax: (203)431-6877			
PROJECT: RIDGEFIELD PARKS & REC HVAC UNIT REPLACEMENT 195 DANBURY ROAD, RIDGEFIELD, CT 06877			
DRAWING TITLE: ELECTRICAL SPECIFICATIONS AND DETAILS			
SCALE: NONE	DRAWN BY: MM	DRAWING NO:	
DATE: 01/20	CHECKED BY: BU		
PROJECT NO: 098-269	APPROVED BY: BU		



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



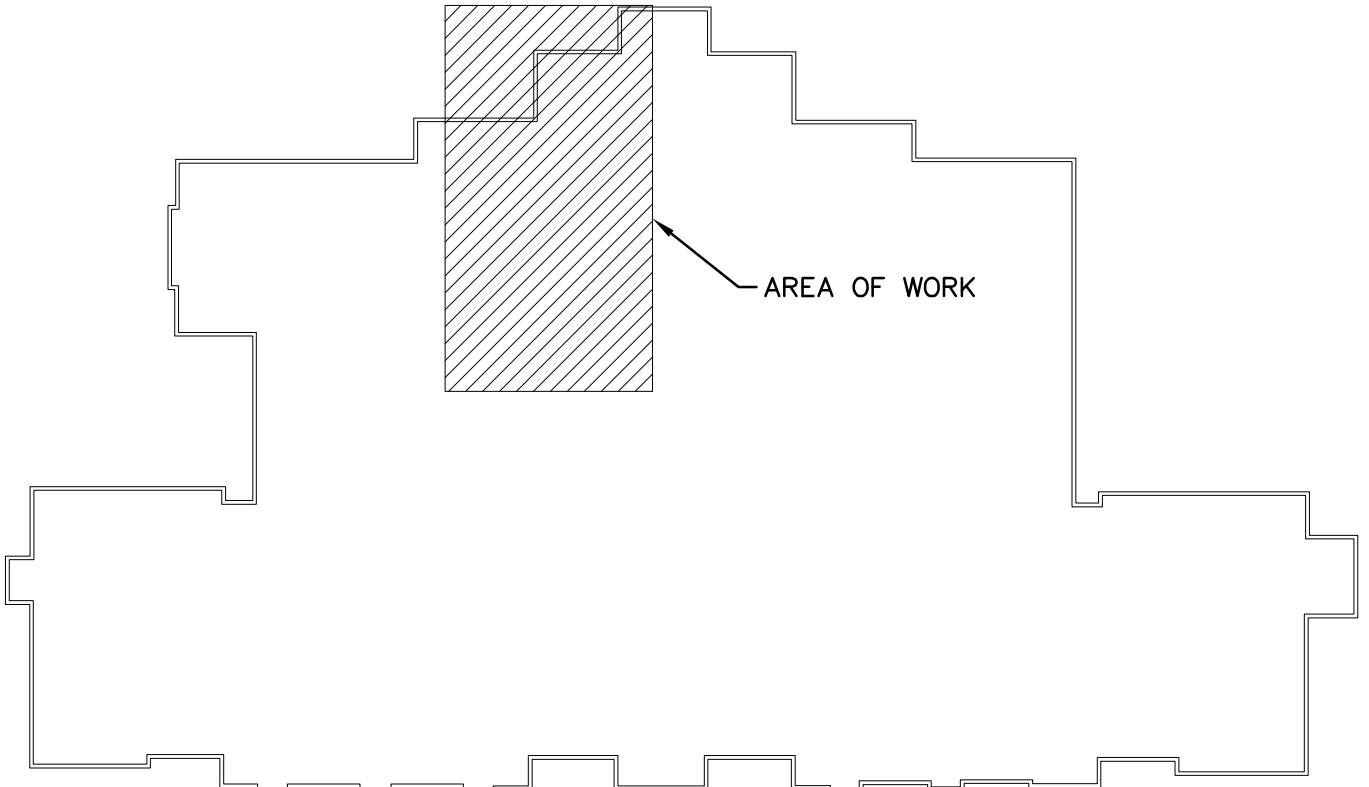
2 ELECTRICAL CONSTRUCTION ROOF PLAN
SCALE: 1/8"=1'-0"

ELECTRICAL GENERAL NOTES

1. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OWNER AS TO CONSTRUCTION SCHEDULING, SERVICE INTERRUPTIONS, AND ACCESS TO WORK AREAS.
2. APPROPRIATE MEASURES SHALL BE TAKEN TO ASSURE CONTINUITY OF EXISTING CIRCUITS WHERE REQUIRED. PROVIDE NEW SUPPORTS, JUNCTION BOXES, WIRING, ETC. AS NECESSARY. ALL OUTAGES WHICH MAY RESULT SHALL BE COORDINATED WITH THE OWNER PRIOR TO THE WORK.
3. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR UPDATING SCHEDULES IN ALL ELECTRICAL PANELS THAT ARE AFFECTED BY THIS WORK. UPDATED SCHEDULES ARE TO BE TYPEWRITTEN.
4. ABANDON OR REUSE EXISTING CONDUIT IN EXISTING WALLS THAT ARE TO REMAIN AS SHOWN ON NEW FLOOR PLAN.

ELECTRICAL DESIGN NOTES:

- 1 EXISTING RTU-1 TO BE DEMOLISHED BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO L.O.T.O EXISTING CIRCUIT BREAKER FOR RTU-1. DISCONNECT EXISTING POWER AND MAKE SAFE WIRING AT RTU-1. COORDINATE WITH MECHANICAL CONTRACTOR.
- 2 ELECTRICAL CONTRACTOR TO VERIFY EXISTING ELECTRICAL CONDUCTOR IS PROPERLY SIZED AND VERIFY CONDUCTOR CONTINUITY (MEGGER TEST). ELECTRICAL CONTRACTOR TO NOTIFY ENGINEER AND REPLACE CONDUCTOR IF UNDERSIZED OR DAMAGED. CONFIRM REQUIREMENTS WITH EQUIPMENT MANUFACTURER.
- 3 NEW RTU-1 TO BE PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR. E.C. TO PROVIDE AND INSTALL NEW NEMA-3R 200A FUSIBLE DISCONNECT SWITCH WITH FUSES SIZED AS NOTED. CONNECT SWITCH TO EXISTING FEEDER WIRING AND CONDUIT AND EXTEND AS REQUIRED. ELECTRICAL CONTRACTOR TO MAKE FINAL CONNECTIONS AND REMOVE L.O.T.O FROM FEEDER BREAKER. COORDINATE SIZING AND LOCATIONS WITH MECHANICAL CONTRACTOR.
- 4 ELECTRICAL CONTRACTOR TO REMOVE EXISTING LIGHTING PROTECTION LOCATED ON RTU-1 PRIOR TO DEMOLITION AND REINSTALL ON NEW RTU-1 IN SIMILAR LOCATIONS, EXTEND WIRING AS REQUIRED WITH SIMILAR MATERIAL.



3 KEY PLAN
SCALE: NONE

4/3/20		-		ISSUED FOR BID		BU	
DATE		REV		DESCRIPTION		BY	
Southport Associates							
Southport Engineering Associates, PC				Tel: (203)431-6844			
1 Bailey Avenue				Fax: (203)431-6877			
Ridgefield, CT 06877							
PROJECT: RIDGEFIELD PARKS & REC HVAC UNIT REPLACEMENT 195 DANBURY ROAD, RIDGEFIELD, CT 06877							
DRAWING TITLE: ELECTRICAL ROOF PART PLANS							
SCALE:		AS NOTED		DRAWN BY:		MM	
DATE:		01/20		CHECKED BY:		BU	
PROJECT NO:		098-269		APPROVED BY:		BU	
						E-200	

STAMP

GENERAL DRAWING ABBREVIATIONS AND SYMBOLS			
W/	WITH	W/O	WITHOUT
TYP	TYPICAL	NIC	NOT IN CONTRACT
EX	EXISTING	KW	KILOWATT
AD	ACCESS DOOR	HP	HORSEPOWER
AFF	ABOVE FINISH FLOOR	BHP	BRAKE HORSE POWER
DWG	DRAWING	VSD	VARIABLE SPEED DRIVE
DN	DOWN	ODP	OPEN DRIP PROOF
		TEFC	TOTALLY ENCLOSED FAN-COOLED
—	NEW WORK		
—	EXISTING TO REMAIN		
✕ ✕	TO BE DEMOLISHED		
	POINT OF NEW CONNECTION TO EXISTING		
	POINT OF DISCONNECTION		
	DRAWING NOTE		
	REVISION SYMBOL		
	SECTION DRAWING SYMBOL		
	CONTINUATION SYMBOL		
	SQUARE FOOT		

HVAC DUCTWORK ABBREVIATIONS AND SYMBOLS			
OA	OUTSIDE AIR	FD	FIRE DAMPER
SA	SUPPLY AIR	FSD	FIRE/SMOKE DAMPER
RA	RETURN AIR	BDD	BACKDRAFT DAMPER
EA	EXHAUST AIR	AD	ACCESS DOOR
TA	TRANSFER AIR	WMS	WIRE MESH SCREEN
CFM	CUBIC FEET/MINUTE	FC	FLEXIBLE CONNECTION
(100)	AIR FLOW-CFM	AL	ACOUSTICAL LINING
ø	ROUND DIAMETER	OBD	OPPOSED BLADE DAMPER
CD	CEILING DIFFUSER	RG	RETURN GRILLE
LD	LINEAR DIFFUSER	OAI	OUTSIDE AIR INTAKE
(E)	EXISTING	FA	NET FREE AREA
(R)	RELOCATE		
		NEW DUCT – FIRST DIMENSION IS TOP SIZE (CLEAR INSIDE DIMENSION, INCHES)	
		INTERNALLY LINED DUCT (ALSO REFER TO SPECIFICATIONS)	
		FLEXIBLE DUCT (8 INCH DIAMETER)	
		DUCT UP (RETURN SHOWN)	
		DUCT DOWN (RETURN SHOWN)	
		MITERED ELBOW (W/ TURNING VANES)	
		RADIUS ELBOW	
		BRANCH TAKE-OFF (45 DEGREES)	
		RADIUS TAKE-OFF	

SINGLE LINE SYMBOL	DOUBLE LINE SYMBOL	
		NEW DUCT – FIRST DIMENSION IS TOP SIZE (CLEAR INSIDE DIMENSION, INCHES)
		INTERNALLY LINED DUCT (ALSO REFER TO SPECIFICATIONS)
		FLEXIBLE DUCT (8 INCH DIAMETER)
		DUCT UP (RETURN SHOWN)
		DUCT DOWN (RETURN SHOWN)
		MITERED ELBOW (W/ TURNING VANES)
		RADIUS ELBOW
		BRANCH TAKE-OFF (45 DEGREES)
		RADIUS TAKE-OFF

SUPPLY/INTAKE SYMBOLS		RETURN/EXHAUST SYMBOLS	
	DUCT		DUCT
	AIRFLOW DIRECTION		AIRFLOW DIRECTION
	CEILING DIFFUSER		CEILING GRILLE
	LINEAR DIFFUSER		LINEAR RETURN

OTHER SYMBOLS			
	DIFFUSER THROW (NO AIRFLOW IN SHADED DIRECTION)		STATIC SENSOR
	MANUAL VOLUME DAMPER		FIRE & SMOKE FIRE=FD FIRE/SMOKE=FSD SMOKE=SMD
	SPLITTER DAMPER		
	BACK DRAFT DAMPER		CONTROL DAMPER
	VAV BOX		DUCT SMOKE DETECTOR
	DUCT COIL		THERMOSTAT/SENSOR
	FLEXIBLE CONNECTION		CARBON DIOXIDE SENSOR
	RECTANGULAR TO ROUND TRANSITION	R 12	DUCT RISE (R) OR DROP (D) IN DIRECTION OF ARROW. NUMBER INDICATES INCHES OF RISE/DROP (WHEN SHOWN).
		D 12	

HVAC PIPING ABBREVIATIONS AND SYMBOLS			
CHWS(R)	CHILLED WATER SUPPLY (RETURN)	HWS(R)	HEATING WATER SUPPLY (RETURN)
CWS(R)	CONDENSER WATER SUPPLY (RETURN)	CW	CITY WATER
DR	DRAIN	PD	PUMP DISCHARGE
BFP	BACKFLOW PREVENTOR		
GPM	GALLONS/MINUTE		
	BALL VALVE		ELECTRIC ACTUATOR
	BUTTERFLY VALVE		SOLENOID ACTUATOR
	PLUG VALVE		PNEUMATIC ACTUATOR
	GATE VALVE		CONCENTRIC REDUCER
	GLOBE VALVE		ECCENTRIC REDUCER
	BALANCING VALVE		FLOW LIMITING VALVE
	PRESSURE REDUCING VALVE		PUMP
	SAFETY RELIEF VALVE		PRESSURE GAUGE
	CHECK VALVE		THERMOMETER
	STRAINER W/ BLOWDOWN VALVE		MANUAL AIR VENT (A=AUTO VENT)
	TRIPLE-DUTY VALVE		THERMOWELL
	3-WAY VALVE		PIPE ANCHOR
	UNION		PIPE GUIDE
	FLEXIBLE CONNECTION		EXPANSION JOINT
	ELBOW DOWN		ELBOW UP
	BOTTOM CONNECTION		TOP CONNECTION
	CONTROL VALVE & TRIM	P 1/4	PIPE PITCHED DOWN I IN DIRECTION OF ARROW. NUMBER INDICATES INCHES OF PITCH PER FOOT (WHEN SHOWN).

MECHANICAL DRAWING LIST		
M-100	–	MECHANICAL SPECIFICATIONS
M-101	–	MECHANICAL SPECIFICATIONS
M-200	–	MECHANICAL ROOF PLAN
M-300	–	MECHANICAL SCHEDULE AND DETAILS

MECHANICAL SPECIFICATION

- 1.0 **GENERAL**
1. REFER TO SPECIFICATIONS FOR ADDITIONAL PROJECT REQUIREMENTS AND WORK RELATED TO OTHER TRADES. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS AND PROVIDE WRITTEN REQUEST FOR INFORMATION.
- 1.1 **SCOPE OF WORK**
- A. THE WORK UNDER THIS SECTION OF THE SPECIFICATIONS INCLUDES ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES FOR AIR HANDLING SYSTEMS REPLACEMENT AND CONTROLS UPGRADE AND OTHER WORK AS SHOWN ON THE CONTRACT DRAWINGS. WORK SHALL BE IN ACCORDANCE WITH THESE SPECIFICATIONS AND THE CONTRACT DRAWINGS AND SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT. THE WORK IN GENERAL CONSISTS OF, BUT IS NOT LIMITED TO, THE FOLLOWING:
- DEMOLITION OF ONE (1) AIR HANDLING SYSTEM.
 - INSTALLATION OF NEW AIR HANDLING SYSTEM.
 - DUCTWORK, PIPING, INSULATION AND ASSOCIATED WORK.
 - DDC CONTROL SYSTEMS.
 - INSTALLATION OF DUCT SMOKE DETECTORS AND ASSOCIATED FIRE ALARM WORK.
 - COORDINATION WITH OTHER TRADES.
 - MOTOR STARTERS AND VARIABLE SPEED DRIVES.
 - AIR BALANCING.
 - RECORD AS-BUILT DRAWINGS AND OPERATING AND MAINTENANCE MANUALS FOR EQUIPMENT PROVIDED BY THIS CONTRACTOR.
 - CONTROLS
- THE MECHANICAL CONTRACTOR SHALL RETAIN THE SERVICES OF THE BUILDINGS TEMPERATURE CONTROL SYSTEM VENDOR FOR INSTALLATION OF DDC CONTROL SYSTEM. SEE CONTROL SPECIFICATION.
- 1.2 **BIDDING**
- A. CONTRACTOR SHALL VISIT THE JOB AND FULLY FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS PRIOR TO SUBMISSION OF BIDS.
- B. CONTRACTOR SHALL COORDINATE THE REQUIREMENTS OF ANY AND ALL DRAWINGS INCLUDING MECHANICAL, ELECTRICAL AND CONTROLS. ANY CONFLICT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER DURING THE BIDDING PERIOD.
- C. CONTRACTOR IS TO OBTAIN A COPY OF THE BUILDING RULES AND REGULATIONS PRIOR TO BID SUBMISSION TO DETERMINE THE REQUIREMENTS AND THE EXTENT OF PREMIUM TIME WORK REQUIRED BY THE BUILDING.
- 1.3 **GENERAL REQUIREMENTS**
- A. ALL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL BUILDING CODES AND ALL BUILDING OWNER RULES AND REGULATIONS INCLUDING USE OF BUILDINGS ROOFING CONTRACTOR AND BMS CONTRACTOR.
- B. CONTRACTOR SHALL PAY ALL FEES AND TAXES, OBTAIN ALL PERMITS AND APPROVALS, FILE THE REQUIRED DOCUMENTS. SCHEDULE AND PAY ALL FEES FOR ALL BUILDING AND FIRE DEPARTMENT INSPECTIONS.
- C. THE CONTRACTOR SHALL WARRANTY ALL WORK FOR A PERIOD OF 12 MONTHS FROM ACCEPTANCE BY OWNER. DURING THIS WARRANTY PERIOD, CONTRACTOR SHALL RESPOND TO ALL CALLS FOR SERVICE, REPAIRS AND ADJUSTMENTS REQUIRED BY OWNER. CONTRACTOR SHALL INSTALL REPLACEMENT PARTS AND MATERIAL REQUIRED AT NO COST TO THE OWNER. ALL EQUIPMENT WARRANTIES SHALL BE TRANSFERRED TO OWNER AND SERVICED BY CONTRACTOR AS PART OF THIS CONTRACT.
- D. CONTRACTOR SHALL COORDINATE WITH OTHER CONTRACTORS INCLUDING, ELECTRICAL, FIRE PROTECTION, CONTROLS AND GENERAL CONTRACTOR. CONTRACTOR SHALL PARTICIPATE IN DEVELOPMENT OF COORDINATED SHOP DRAWINGS.
- E. CONTRACTOR SHALL COORDINATE WITH PRIME CONTRACTOR FOR PROVIDING ANY WALL OR FLOOR PENETRATIONS FOR NEW DUCT OR PIPING WORK AND SHALL PATCH AND REPAIR, TO MATCH EXISTING. ALL HOLES, ACCESS OPENINGS, ETC. DUE TO NEW WORK AND DEMOLITION WORK. ALL PENETRATIONS SHALL BE PATCHED AND FIRESTOPPED AS REQUIRED TO MAINTAIN THE INTENDED FIRE RATING, UNLESS NOTED OTHERWISE ALL FLOORS AND MECHANICAL ROOM WALLS SHALL BE CONSIDERED TO BE 2-HOUR RATED.
- F. CONTRACTOR SHALL INFORM PROJECT MANAGER IMMEDIATELY UPON DISCOVERY OF ANY ASBESTOS OR OTHER HAZARDOUS MATERIAL THAT WILL BE DISTURBED DUE TO THIS WORK.
- G. DEMOLITION AND OTHER WORK WHICH MAY CREATE A DISTURBANCE MUST BE COORDINATED WITH THE OWNER. THE DELIVERY, HANDLING AND INSTALLATION OF MATERIALS, EQUIPMENT AND REMOVAL OF DEBRIS MUST BE ARRANGED TO AVOID ANY INCONVENIENCE AND ANNOYANCE TO OWNER. THE CONTRACTOR SHALL DISPOSE OF ALL DEMOLITION AND UNUSED MATERIALS.
- H. THOROUGHLY BRUSH AND CLEAN UP WORK AT THE END OF EACH DAY. REMOVE ALL DEBRIS FROM INSIDE AND OUTSIDE OF ALL DUCTWORK, PIPING AND EQUIPMENT. PAINTED EXPOSED WORK, SOILED OR DAMAGED, SHALL BE CLEANED OR REPAINTED TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE.
- I. SUBSTITUTIONS FOR THE SPECIFIED EQUIPMENT SHALL NOT BE PERMITTED WITHOUT APPROVAL FROM THE ENGINEER. THE ASSOCIATED CHANGE IN THE CONTRACT PRICE SHALL BE INCLUDED WITH ANY PROPOSED SUBSTITUTIONS.
- J. SEISMIC MOUNTING AND BRACING OF ALL EQUIPMENT, PIPING ETC. SHALL BE IN ACCORDANCE WITH STATE AND LOCAL REQUIREMENTS. THE SEISMIC REQUIREMENTS SHALL BE BASED ON A USE TYPE [3]
- K. THE CONTRACTOR SHALL COORDINATE WITH EQUIPMENT MANUFACTURER'S SERVICE REPRESENTATIVE TO ENSURE PROPER INSTALLATION, PIPING AND SERVICE CLEARANCE REQUIREMENTS ARE MET.
- L. LAYOUT SYSTEMS TO MAINTAIN ACCESS AND SERVICE CLEARANCES FOR INSTALLED EQUIPMENT, VALVES, CONTROLS, VOLUME DAMPERS, FIRE/SMOKE DAMPERS AND ALL COMPONENTS REQUIRING ACCESS. SERVICE ACCESS SHALL BE AS RECOMMENDED BY MANUFACTURER OR AS REQUIRED BY CODE WHICHEVER IS GREATER.
- M. IF BUILDING REMAINS OPEN DURING CONSTRUCTION (TBD), MAINTAIN OPERATION OF BUILDING SYSTEMS DURING CONSTRUCTION. ANY REQUIRED SHUTDOWNS OF BUILDING SYSTEMS MUST BE COORDINATED WITH THE OWNER.
- N. UNLESS OTHERWISE SPECIFIED, THE MOST RECENT VERSIONS OF THE FOLLOWING CODES AND STANDARDS APPLY AND ARE MADE A PART OF THIS SPECIFICATION
- CT STATE BUILDING CODE.
 - INTERNATIONAL MECHANICAL CODE (IMC).
 - INTERNATIONAL ENERGY CONSERVATION CODE (IECC).
 - UNDERWRITER'S LABORATORIES, INC. (UL).
 - NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).
 - AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME).
 - AMERICAN NATIONAL STANDARD INSTITUTE (ANSI).
 - OSHA – FEDERAL STANDARDS
 - AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS, INC. (ASHRAE).
 - AIR CONDITIONING & REFRIGERATION INSTITUTE (ARI).
 - AMERICAN WELDING SOCIETY (AWS).

- AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM).
 - SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA)
- 1.4 **COORDINATION WITH BUILDING MANAGEMENT**
- A. THIS CONTRACTOR IS RESPONSIBLE FOR ADHERING TO THE BUILDING OWNER'S RULES AND REGULATIONS. ANY DISCREPANCIES BETWEEN THE CONTRACTOR DOCUMENTS AND THE BUILDING RULES AND REGULATIONS SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT/ENGINEER FOR REVIEW, WITH BID SUBMISSION.
- B. COORDINATE WITH BUILDING OWNER FOR ANY SERVICE INTERRUPTION OF EXISTING SYSTEMS AND GIVE NOTICE AS REQUIRED BY BUILDING RULES AND REGULATIONS OR A MINIMUM OF TWO (2) DAYS PRIOR TO ANY WORK, WHICHEVER IS MORE STRINGENT. CONTRACTOR IS TO PERFORM WORK ON PREMIUM TIME, IF SO DIRECTED BY BUILDING OWNER, SO AS NOT TO INTERRUPT BUILDING SERVICES DURING OCCUPIED PERIODS.
- 1.5 **SUBMITTALS**
- A. SHOP DRAWINGS OF THE FOLLOWING SHALL BE SUBMITTED FOR REVIEW PRIOR TO PURCHASE AND INSTALLATION.
- MANUFACTURER'S SUBMITTAL DATA FOR ALL EQUIPMENT SUPPLIED. SUBMITTALS SHALL CLEARLY INDICATE SPECIFIC ITEMS PROPOSED AND WHERE EACH ITEM IS TO BE APPLIED.
 - EQUIPMENT SOUND POWER DATA BROKEN INTO OCTAVE BANDS.
 - DIMENSIONED AND DETAILED PIPING, EQUIPMENT AND DUCTWORK LAYOUT AT 3/8" = 1'-0" SCALE, MINIMUM. THIS MUST BE COORDINATE WITH OTHER TRADES.
 - SHOP STANDARDS AND INSTALLATION DETAILS FOR DUCTWORK, PIPING, INSULATION, STRUCTURAL SUPPORTS, VIBRATION ISOLATION, AND SEISMIC SUPPORT.
 - PIPE CLEANING AND FLUSHING PROCEDURE.
 - AIR BALANCING REPORTS.
 - OTHER SUBMITTAL DATA NOTED ELSEWHERE.
- B. SUBMITTAL QUANTITIES AND METHODS SHALL BE AS OUTLINED IN THE GENERAL PROVISIONS OF THE CONTRACT DOCUMENTS AS APPLICABLE. OTHERWISE A MINIMUM OF TWO HARD COPIES AND ONE "PDF" COPY SHALL BE SUBMITTED.
- C. SUBMIT DETAILED PROJECT SCHEDULE, WITHIN TWO (2) WEEKS OF CONTRACT AWARD.
- 1.6 **RECORD DRAWINGS**
- A. MAINTENANCE MANUALS, AS-BUILT DRAWINGS SHOWING ALL DUCTWORK, PIPING AND EQUIPMENT AND TEST AND BALANCING REPORTS SHALL BE SUBMITTED TO THE OWNER AT THE COMPLETION OF THE WORK. THE AS-BUILT DRAWINGS SHALL ALSO SHOW EXISTING WORK WITHIN THE WORK AREA INCLUDING DUCTS AND PIPING THAT WAS CAPPED, REROURED AND REMAINING IN WORK AREA.
- B. CONTROL SYSTEM OPERATING MANUAL.
- C. RECORD DOCUMENTS TO BE ISSUED IN "PDF" AND TWO PRINTED COPIES.
- 1.7 **GUARANTEE**
- A. ALL MATERIALS AND WORKSMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THIS WORK. FINAL ACCEPTANCE SHALL BE DEFINED AS THE TIME AT WHICH THE MECHANICAL WORK IS TAKEN OVER AND ACCEPTED BY THE OWNER, AND IS UNDER CARE, CUSTODY, AND CONTROL OF THE OWNER. ENGAGE THE SERVICES OF VARIOUS MANUFACTURERS SUPPLYING THE EQUIPMENT FOR THE PROPER STARTUP AND OPERATION OF ALL SYSTEMS INSTALLED. INSTRUCT THE OWNER'S PERSONNEL IN THE PROPER OPERATION AND SERVICING OF THE SYSTEM.
- B. THE CONTRACTOR SHALL GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN THE GUARANTEE PERIOD. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL INCLUDE RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS, IN EQUIPMENT SUPPLIED BY THIS CONTRACTOR.
- C. ALL EQUIPMENT WARRANTIES SHALL BE TRANSFERRED TO OWNER AND SERVICED BY CONTRACTOR AS PART OF THIS CONTRACT.
- D. ALL AIR CONDITIONING UNIT COMPRESSORS AND REFRIGERATION COMPONENTS SHALL HAVE A 5-YEAR WARRANTY.
- 2.0 **DUCTWORK MATERIALS AND INSTALLATIONS**
- 2.1 **DUCTWORK**
- A. ALL DUCTWORK SHALL BE LOCK FORMING QUALITY G-90 GALVANIZED STEEL SHEETS UNLESS OTHERWISE NOTED ON DRAWINGS. ALL DUCTWORK SHALL CONFORM TO THE CONSTRUCTION DETAILS AND RECOMMENDATIONS IN THE LATEST ISSUES OF THE ASHRAE GUIDE, NFPA BULLETINS 90A, B & C AND THE SMACNA DUCT MANUAL. INSTALLATION OF DUCTWORK SHALL BE AS RECOMMENDED BY THE ABOVE. NOTE THAT SOME DUCTWORK IS LARGE, AND DUCT MUST BE CONSTRUCTED TO PREVENT "TIN CANNING". ALL DUCT SEAMS SHALL BE SEALED WITH DUCT SEALANT. DUCT LEAKAGE SHALL NOT EXCEED VALUES SET BY THE SMACNA STANDARDS, AND RECOMMENDATIONS BY ASHRAE, AND IN NO CASE SHALL BE MORE THAN 5 PERCENT.
- B. PRESSURE CLASSIFICATIONS SHALL BE MINIMUM OF 2" W.G. EXCEPT AS INDICATED BELOW AND AS INDICATED ON DRAWINGS. ALL SYSTEM COMPONENTS SHALL BE SELECTED AND INSTALLED TO ACHIEVE THE PRESSURE RATINGS.
- | SERVICE | PRESSURE RATING | |
|--------------|-----------------|--|
| ALL DUCTWORK | 2" IN. W.G | |
- C. ALL 90 DEGREE MITER ELBOWS SHALL HAVE DOUBLE THICKNESS AIR FOIL TYPE TURNING VANES AS DETAILED IN THE SMACNA STANDARDS. ALL OTHER ELBOWS SHALL HAVE A MINIMUM TURNING RADIUS OF ONE DUCT WIDTH AS MEASURED FROM THE CENTER LINE. ALL DUCT SUPPORTS SHALL CONFORM TO SMACNA STANDARDS.
- D. DUCT DIMENSIONS SHOWN ON DRAWINGS SHALL BE CLEAR INSIDE DIMENSIONS.
- 2.2 **DUCT AND AIR SYSTEMS INSULATION**
- A. DUCTWORK INSULATION SHALL CONFORM TO MAXIMUM FLAME SPREAD/SMOKE DEVELOPMENT/FUEL CONTRIBUTION RATINGS OF 25 FLAME SPREAD, 50 SMOKE DEVELOPED AND 50 FUEL CONTRIBUTED IN ACCORDANCE WITH ASTM E84, WITH "K" VALUE OF 0.29 AT 75 DEGREES F. INSULATION SHALL PROVIDE CONTINUOUS, VAPOR BARRIER AND JOINTS SHALL BE SECURED WITH PRESSURE SENSITIVE TAPE. MOISTURE VAPOR TRANSMISSION PER ASTM E96, 1.3 PERM. MINIMUM DUCTWORK INSULATION R VALUES SHALL BE AS FOLLOWS:
- B. DUCT AND PLENUM INSULATION SCHEDULE.
- | SERVICE | THICKNESS | |
|--------------------|-------------------|---------------------------|
| | WITHIN COND. AREA | OUTDOORS AND UNCOND. AREA |
| CONDITIONED SUPPLY | 1-1/2" | 2" (R-12) |
| CONDITIONED RETURN | 1-1/2" | 2" (R-12) |

C. DUCTS AND PLENUMS IN EXPOSED LOCATIONS: 3.0 LBS/CF DENSITY, RIGID GLASS FIBER BOARD INSTALLED ON EXTERIOR OF DUCTS AND PLENUMS; OUTSIDE AIR DUCTS AND PLENUMS, MIXED AIR PLENUMS, AND SUPPLY DUCTS WITHIN MECHANICAL ROOMS AND OTHER EXPOSED LOCATIONS.

D. DUCTS AND PLENUMS IN CONCEALED (ACCESSIBLE) LOCATIONS: 1.5 LBS/CF DENSITY, FLEXIBLE GLASS FIBER WRAP.

E. SCHEDULE – ACOUSTICAL LINING

SERVICE	THICKNESS	DISTANCE- FEET
UPSTREAM AND DOWNSTREAM OF FANS AND AHUS	1"	15

F. PROVIDE 1", CLOSED CELL ELASTOMERIC, MICROBIAL RESISTANT DUCT LINER, K-FLEX DUCT LINER OR EQUIVALENT, FOR A MINIMUM OF 15 FEET UPSTREAM (RETURN) OF RETURN FANS AND AIR HANDLING UNITS AND OTHER LOCATIONS WHERE INDICATED ON THE DRAWINGS. COAT LINER WITH MANUFACTURERS RECOMMENDED COATING. LINED DUCTWORK MUST MEET AN R-12 INSULATION VALUE AND MAY REQUIRE EXTERNAL DUCT INSULATION.

G. INSULATION SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND SMACNA GUIDELINES.

H. EXTERIOR DUCT INSULATION: PROVIDE JOHNS MANSVILLE JM XSPECT AND 3M VENTURECLAD DUCT JACKETING. INSTALL INSULATION AND JACKETING IN STRICT COMPLIANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.

I. EXTERIOR DUCTS AND INSULATION MUST BE PROTECTED AGAINST DAMAGE AND WEATHER WITH A COVERING IN COMPLIANCE WITH IMC (603.15, 603.16, 604.12) AND SMACMA STANDARDS.

2.3 **AIR SYSTEM – VIBRATION ISOLATION**

A. PROVIDE VIBRATION ISOLATION FOR ALL FANS WHERE NOT INTERNALLY ISOLATED.

B. WHERE FANS ARE NOT PROVIDED WITH INTERNALLY ISOLATED FANS –PROVIDE NEOPRENE FLEXIBLE CONNECTIONS IN DUCTWORK AT FAN CONNECTIONS TO DUCTWORK.

3.0 **PIPING MATERIALS AND INSTALLATION**

3.1 **GENERAL**

A. PRESSURE RATINGS FOR PRESSURIZED PIPING SHALL BE AS INDICATED BELOW AND AS NOTED ON THE DRAWINGS. ALL SYSTEM MATERIALS AND COMPONENTS SHALL BE SELECTED AND INSTALLED TO ACHIEVE THE PRESSURE RATINGS AS FOLLOWS:

SERVICE	PRESSURE RATING	
ALL PIPING	125 PSI	

3.1 **PIPE AND FITTINGS**

A. PROVIDE PIPING AS INDICATED ON SCHEDULE BELOW AND INDICATED ON DRAWINGS.

SERVICE	PIPING	JOINTS
AC CONDENSATE	PVC	
GAS PIPING	STEEL	SEE BELOW

B. STEEL PIPING: ASTM 53 SCHEDULE 40 SEAMLESS STEEL. ASTM SCHEDULE 80 SEAMLESS STEEL. FITTINGS SHALL BE ANSI/ASTM B16.3 THREADED [B16.5 WELDED] MALLEABLE IRON CLASS [150], OR ASTM B234, FORGED STEEL CLASS [150]. ALL JOINTS FOR PIPING 2" AND LESS TO BE SCREWED AND PIPING 2-1/2" AND LARGER SHALL BE WELDED OR FLANGED. REDUCER FITTINGS SHALL BE ECCENTRIC TYPE. ALL TURNS AND BRANCHES IN PIPING SHALL BE MADE USING FITTINGS EXCEPT WELDOLETS MAY BE USED WHEN THE SIZE OF THE BRANCH PIPING IS 1/2 THE SIZE OR LESS OF THE MAIN BRANCH.

C. JOINTS: SCREWED FOR PIPE 2 INCH AND UNDER; ANSI/AWS D1.1 WELDED FOR PIPE OVER 2 INCH.

D. FLANGES, UNIONS, AND COUPLINGS: PIPE SIZE 2 INCHES AND UNDER: SERVICE 150 PSI WORKING PRESSURE MALLEABLE IRON UNIONS FOR THREADED FERROUS PIPING. PIPE SIZE OVER 2 INCHES: SERVICE 150 PSI WORKING PRESSURE FORGED STEEL SLIP-ON FLANGES FOR FERROUS PIPING.

E. CONDENSATE DRAIN PIPING SHALL BE PVC.

F. PROVIDE DIELECTRIC FITTINGS AT THE JOINING OF ALL DISSIMILAR METALS.

G. PROVIDE SUFFICIENT HANGERS, SUPPORTS, ANCHORS AND MOUNTING DEVICES TO SUPPORT ALL PIPING INSTALLED UNDER THIS CONTRACT WITHOUT SAGGING OR INTERFERENCE, PROPERLY PITCHED AND SO LOCATED AND ARRANGED AS TO PERMIT FREE EXPANSION AND CONTRACTION.

4/3/20

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ISSUED FOR BID

BU

DATE

REV

DESCRIPTION

BY

Southport Associates

Southport Engineering Associates, PC
11 Bailey Avenue
Ridgefield, CT 06877

Tel.: (203)431-6844
Fax: (203)431-6877

PROJECT:

RIDGEFIELD PARKS & REC
HVAC UNIT REPLACEMENT
195 DANBURY ROAD, RIDGEFIELD, CT 06877

DRAWING TITLE:

MECHANICAL
SPECIFICATIONS

SCALE:

AS NOTED

DRAWN BY:

MB

DATE:

01/20

CHECKED BY:

CL

PROJECT NO:

098-269

APPROVED BY:

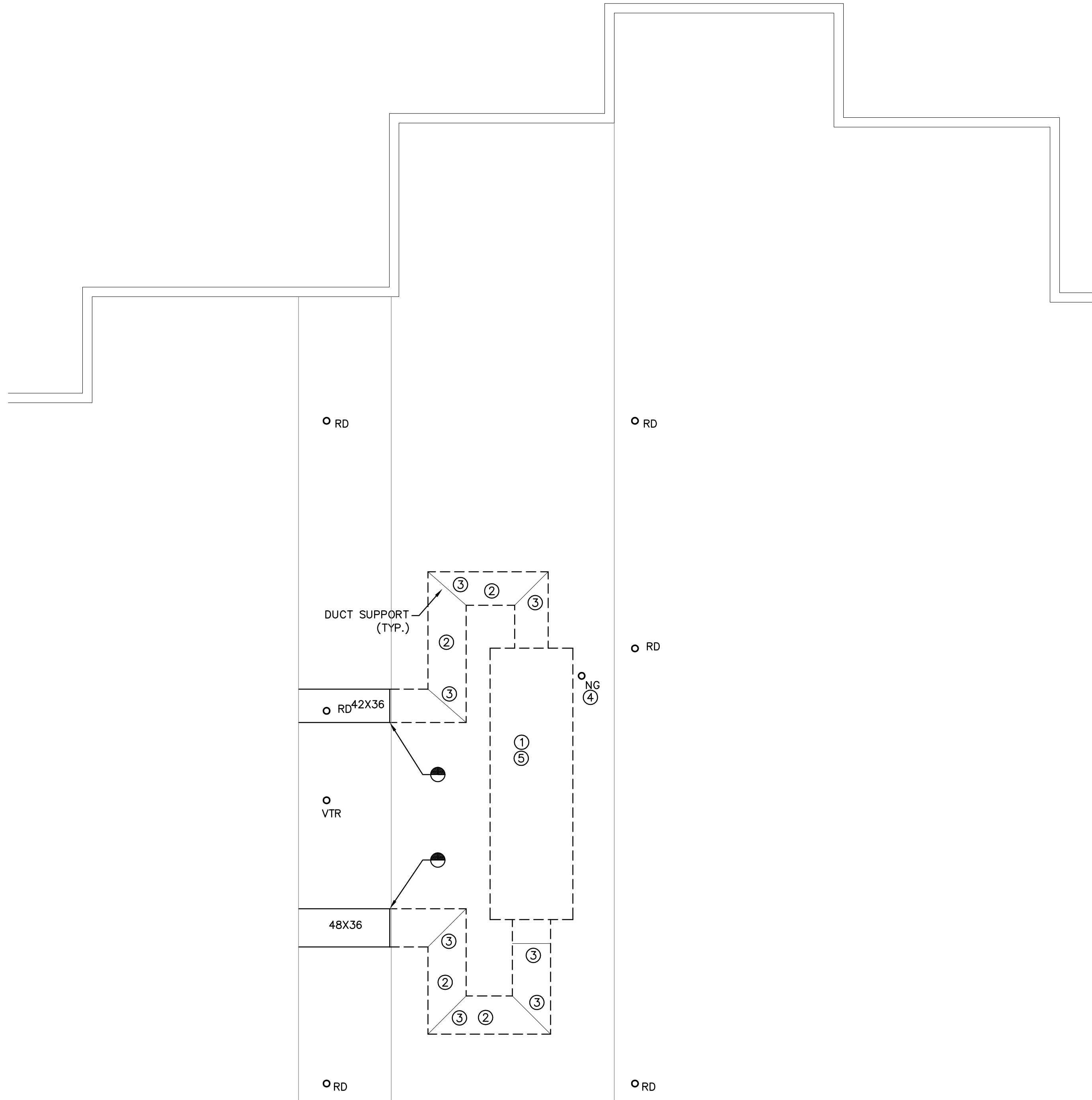
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DRAWING NO:

M-100

STAMP

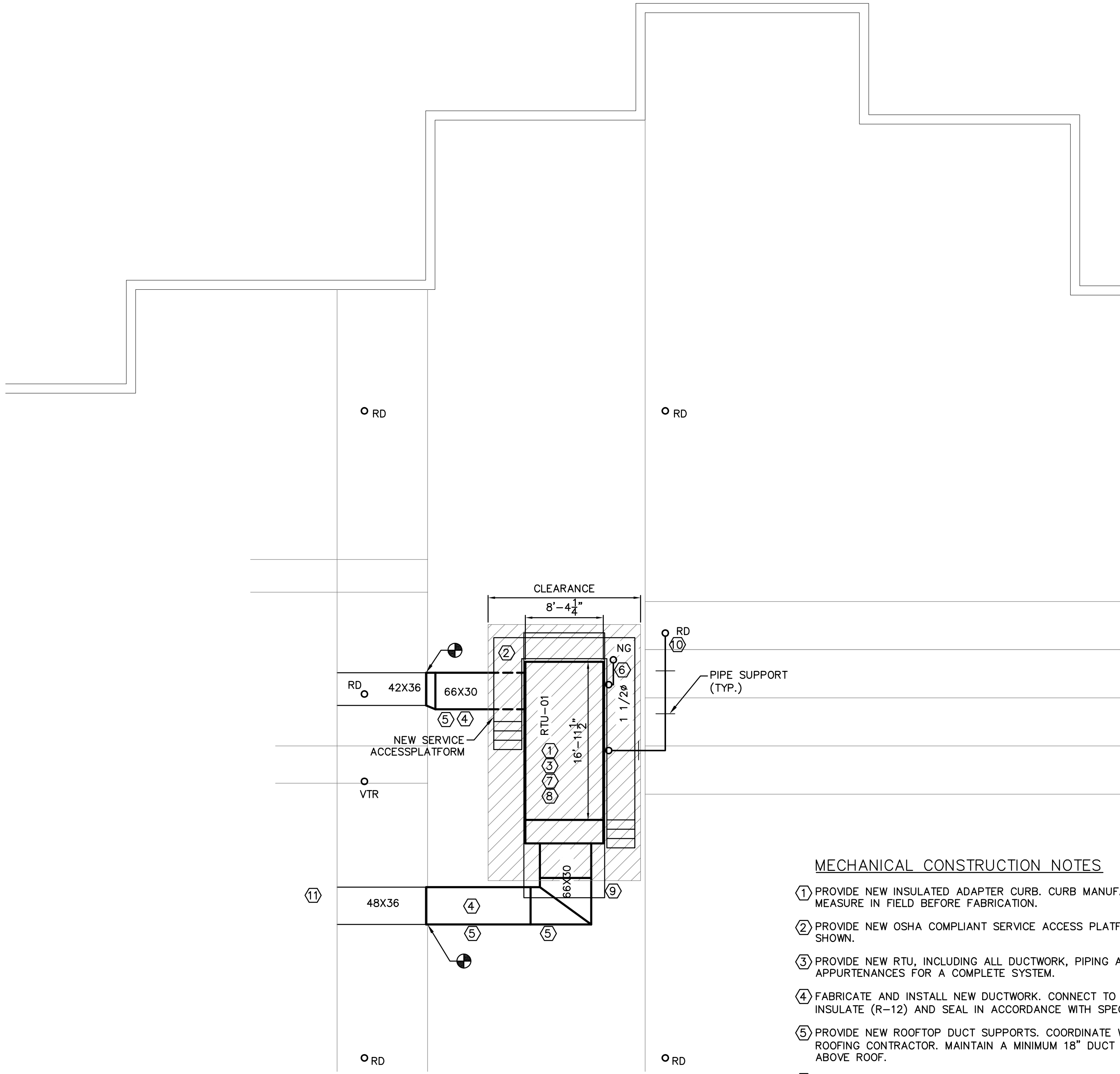
Page 47 of 66



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

MECHANICAL DEMOLITION NOTES

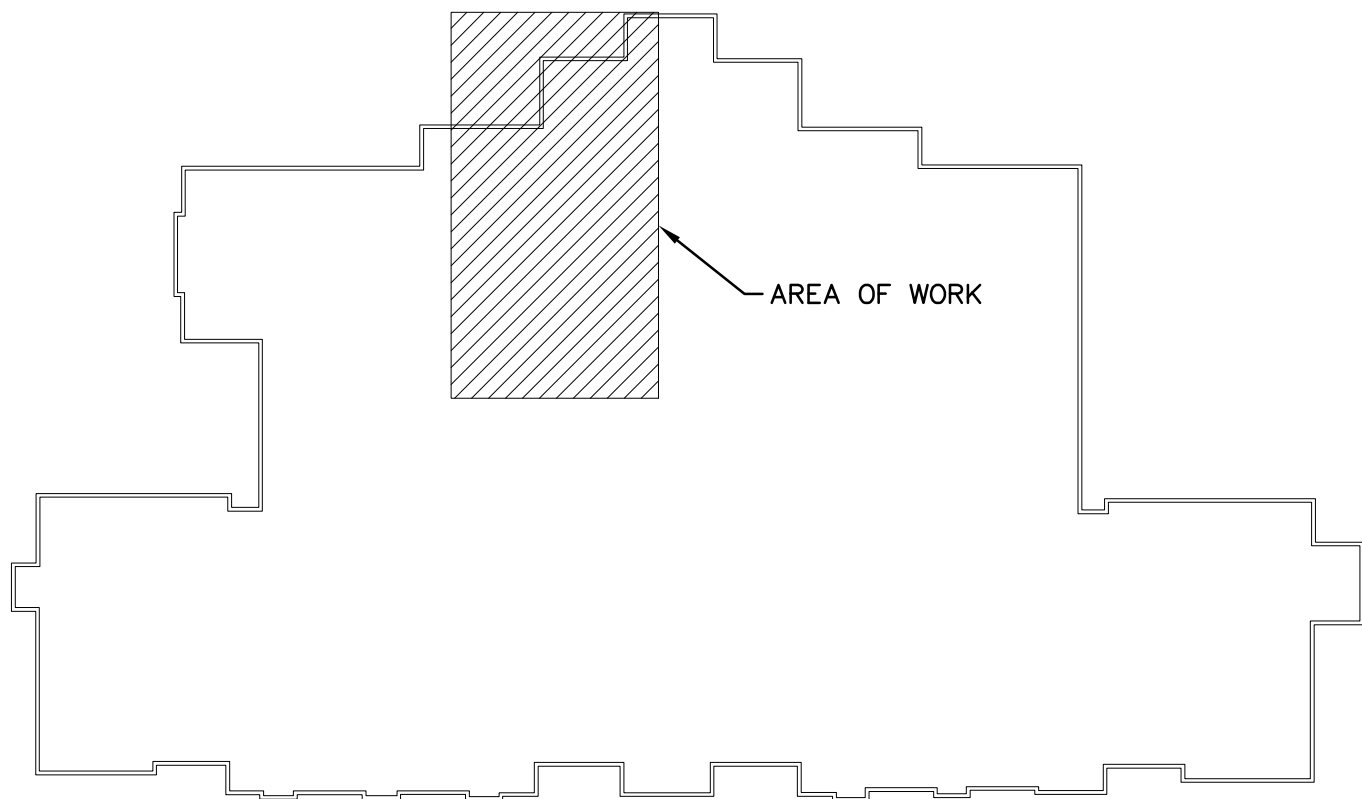
- 1 REMOVE EXISTING POOL ROOM ROOFTOP UNIT AND ALL ASSOCIATED, CONTROLS AND CIRCUITRY BACK TO MAIN AND CAP.
- 2 REMOVE EXISTING DUCTWORK BACK TO POINT OF DISCONNECTION AND CAP.
- 3 REMOVE EXISTING DUCT SUPPORT CURB. COORDINATE WITH BUILDINGS ROOFING CONTRACTOR.
- 4 DISCONNECT EXISTING GAS PIPE BACK TO MAIN AND CAP FOR FUTURE USE.
- 5 DISCONNECT EXISTING LIGHTNING PROTECTION AND SAVE FOR FUTURE USE.



2 MECHANICAL CONSTRUCTION ROOF PLAN
SCALE: 1/8"=1'-0"

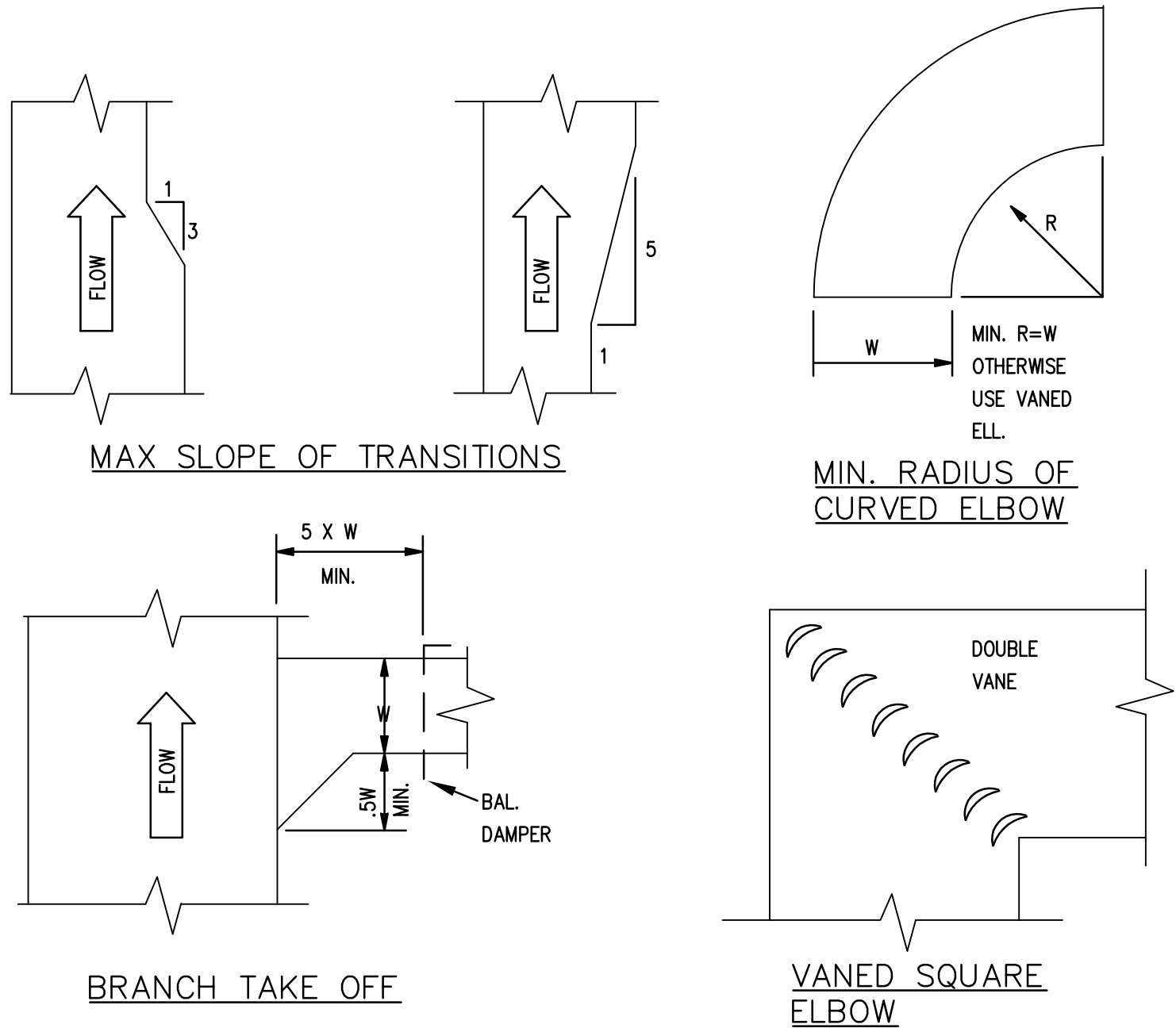
MECHANICAL CONSTRUCTION NOTES

- 1 PROVIDE NEW INSULATED ADAPTER CURB. CURB MANUFACTURER TO MEASURE IN FIELD BEFORE FABRICATION.
- 2 PROVIDE NEW OSHA COMPLIANT SERVICE ACCESS PLATFORM AS SHOWN.
- 3 PROVIDE NEW RTU, INCLUDING ALL DUCTWORK, PIPING AND APPURTENANCES FOR A COMPLETE SYSTEM.
- 4 FABRICATE AND INSTALL NEW DUCTWORK. CONNECT TO EXISTING. INSULATE (R-12) AND SEAL IN ACCORDANCE WITH SPECIFICATIONS.
- 5 PROVIDE NEW ROOFTOP DUCT SUPPORTS. COORDINATE WITH BUILDINGS ROOFING CONTRACTOR. MAINTAIN A MINIMUM 18" DUCT CLEARANCE ABOVE ROOF.
- 6 EXTEND NATURAL GAS PIPING TO EXISTING GAS MAIN. PAINT PIPING.
- 7 RECONNECT TO EXISTING ELECTRICAL SERVICE. PROVIDE CORRECT CIRCUIT BREAKER FOR NEW UNIT.
- 8 RECONNECT EXISTING LIGHTNING PROTECTION AS REQUIRED.
- 9 EXISTING CURB TO REMAIN.
- 10 EXTEND CONDENSATE PIPE TO ROOF DRAIN. PROVIDE PIPE SUPPORTS, CLEANOUT AND AIR GAP. SEE DETAIL DRAWING.
- 11 PROVIDE NEW TEMPERATURE AND HUMIDITY SENSOR, MINIMUM 48" ABOVE FINISHED FLOOR, UNDER RETURN GRILLES IN POOL ROOM SPACE, IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. COORDINATE FINAL LOCATION WITH AERCON AND BUILDING MANAGEMENT.

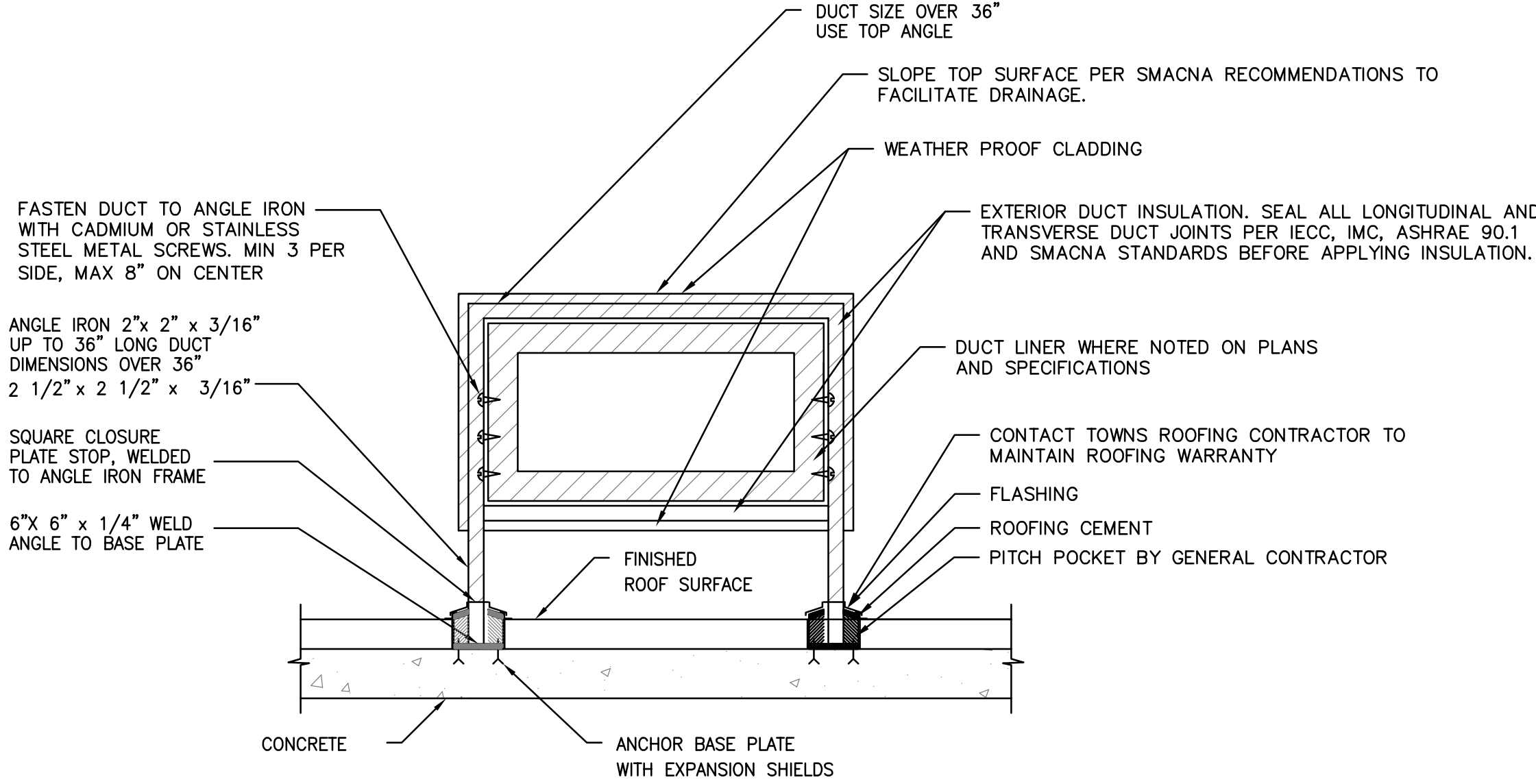


BUILDING KEY PLAN
SCALE: NONE

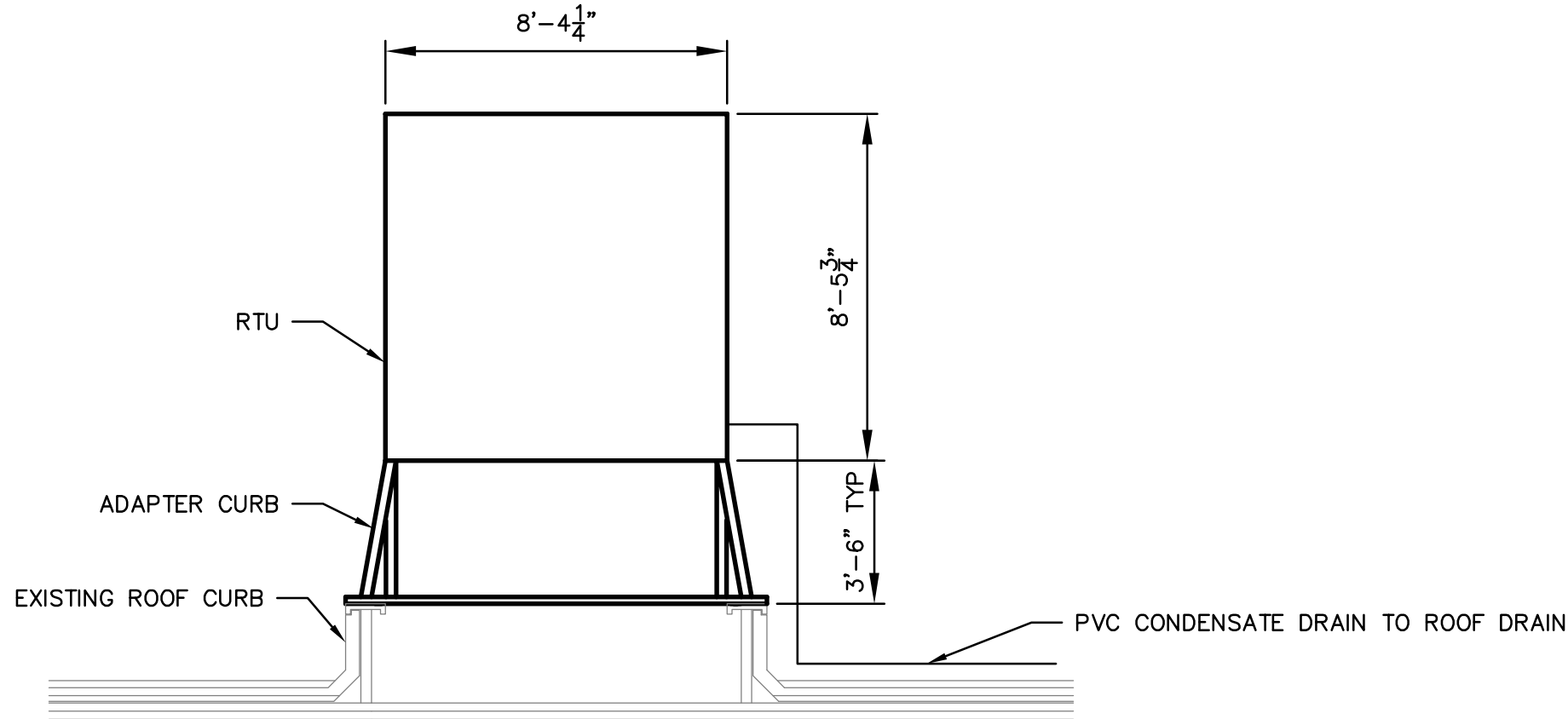
4/3/20	-	ISSUED FOR BID	BU
DATE	REV	DESCRIPTION	BY
Southport Associates			
Southport Engineering Associates, PC		Tel.: (203)431-6844	
11 Bailey Avenue		Fax: (203)431-6877	
Ridgefield, CT 06877			
PROJECT: RIDGEFIELD PARKS & REC HVAC UNIT REPLACEMENT 195 DANBURY ROAD, RIDGEFIELD, CT 06877			
DRAWING TITLE: MECHANICAL ROOF PLAN			
SCALE:	AS NOTED	DRAWN BY:	MB
DATE:	01/20	CHECKED BY:	CL
PROJECT NO:	098-269	APPROVED BY:	BU
			M-200



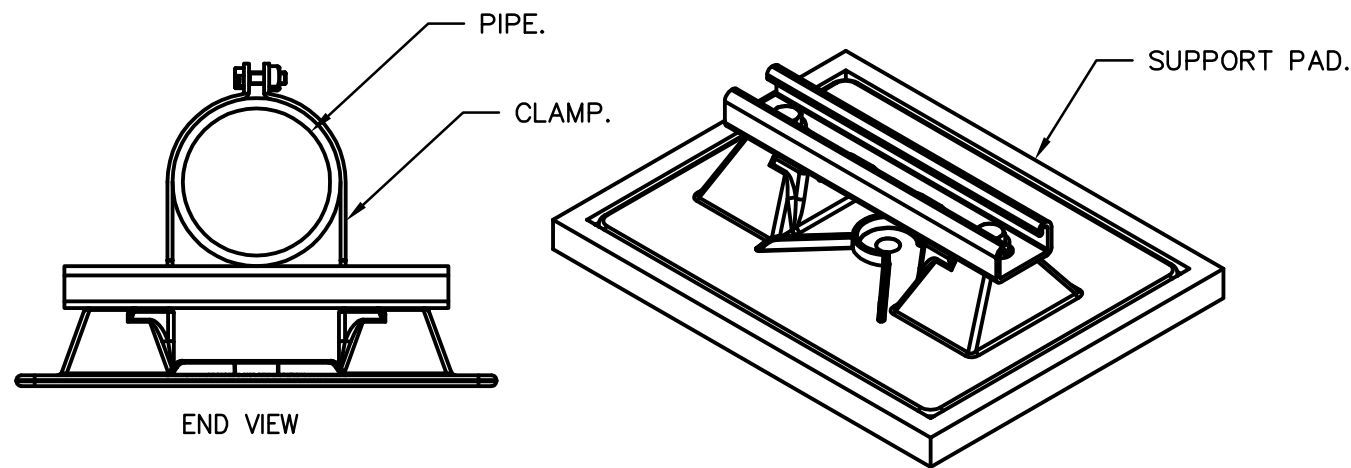
1 DUCT CONSTRUCTION DETAIL
SCALE: NONE



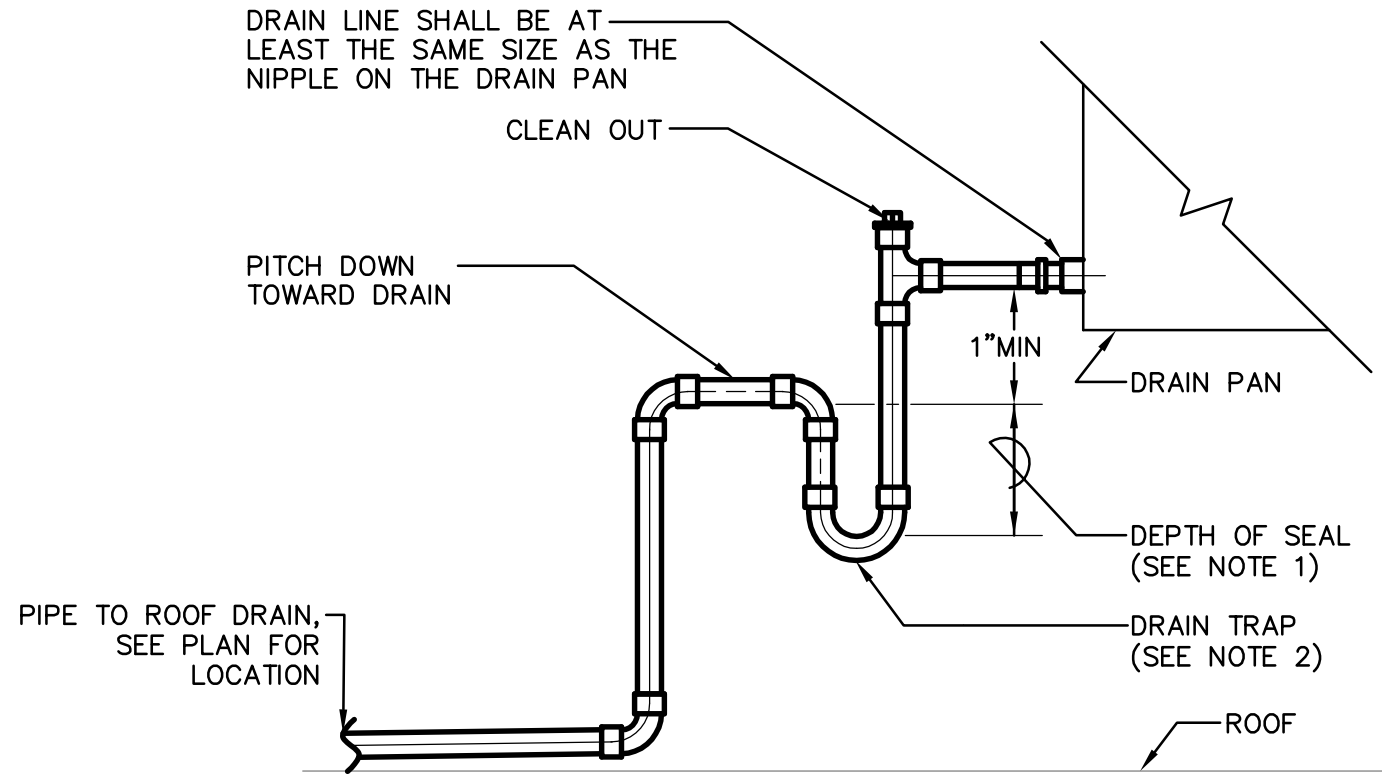
2 ROOF MOUNTED DUCT DETAIL
SCALE: NONE



4 RTU INSTALLATION DETAIL
SCALE: NONE



5 ROOF MOUNTED PIPE SUPPORT DETAIL
SCALE: NONE



- NOTES:
1. THE DEPTH OF THE SEAL SHALL BE A MINIMUM OF THE AIR HANDLING UNIT'S TOTAL STATIC PRESSURE IN INCHES OF WATER PLUS 3".
 2. MANUALLY PRIME FILL TRAP PRIOR TO START-UP OF UNIT.

3 RTU COOLING COIL DRAIN TRAP DETAIL
SCALE: NTS

AIR HANDLING UNIT SCHEDULE																													
MARK	SERVING	AIR FLOW DATA							COOLING SECTION					HEATING SECTION					HEAT RECOVERY				ELECTRICAL DATA				DIMENSIONS		
		SUPPLY FAN CFM	O.A. CFM MIN /MAX	SUPPLY FAN HP	SUPPLY FAN ESP (IN.WG)	EXHAUST FAN CFM	EXHAUST FAN ESP (IN. WG)	EXHAUST FAN HP	GROSS TOTAL MBH	GROSS SENSIBLE MBH	GROSS LATENT MBH	P.D. (IN H2O)	EAT DB/ WB (°F)	LAT DB/WB (°F)	FUEL	INPUT MBH	TOTAL MBH	OAT DB/ WB (°F)	EAT DB/ WB (°F)	LAT DB/WB (°F)	HEATING SENSIBLE MBH	HEATING LATENT MBH	COOLING SENSIBLE MBH	COOLING LATENT MBH	VOLT/PH/HZ	FLA	MCA	MOCp	LXWXH
RTU-1	POOL ROOM	16,900	5,300	2X10.0	2.00	16,900	1.0	2X5.0	522.06	283.52	190.56	0.56	84.28/72.06	57.63/57.44	NT GAS	540.0	432.0	0.0/-1.0	75.5/68.7	99.2/75.4	352.3	278.54	47.99	0.0	460/3/60	118	123	125	203 1/2X100 1/4X101 3/4
Notes: <div><div><div>1. Provide fusible disconnect switch.</div><div>2. Double wall construction with 2" polyurethane foam (R-13).</div><div>3. Interior corrosion protection, polymer E-coated cooling coil.</div><div>4. Stainless steel drain pan.</div><div>5. Stainless steel natural gas heat exchanger.</div><div>6. Provide Manufacturer recommended controller. See note 8.</div><div>7.(2) Supply & (2) exhaust blowers with premium efficiency motors and (4) VFDs.</div></div><div><div>7. (4) Compressors with (4) independent refrigeration circuits.</div><div>8. Unit shall interface with existing BMS including graphics, setpoints, alarms & monitoring of the entire system.</div><div>9. Condenser fans with VFD.</div><div>10. Energy wheel with defrost.</div><div>11. Fan shall be internally isolated with spring type vibration isolators.</div><div>12. Provide supply and return air smoke detectors.</div><div>13. Provide double wall, hinged doors with handles.</div></div><div><div>14. Provide 115V convenience outlet.</div><div>15. Provide polymer E-coated hot gas reheat coil.</div></div></div>																													

4/3/20	-	ISSUED FOR BID	BU
DATE	REV	DESCRIPTION	BY
Southport Associates			
Southport Engineering Associates, PC 11 Bailey Avenue Ridgefield, CT 06877			Tel.: (203)431-6844 Fax: (203)431-6877
PROJECT: RIDGEFIELD PARKS & REC HVAC UNIT REPLACEMENT 195 DANBURY ROAD, RIDGEFIELD, CT 06877			
DRAWING TITLE: MECHANICAL SCHEULES AND DETAILS			
SCALE: AS NOTED	DRAWN BY: MB	DRAWING NO:	
DATE: 01/20	CHECKED BY: CL		
PROJECT NO: 098-269	APPROVED BY: BU	M-300	

Appendix C
Prevailing Wage Rates

Project: Venus Building Chiller Installation

**Minimum Rates and Classifications
for Building Construction**

ID# : B 26736

**Connecticut Department of Labor
Wage and Workplace Standards Division**

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project
State#

Number:
FAP#:

Project Town: Ridgefield

Project: Venus Building Chiller Installation

CLASSIFICATION

Hourly Rate

Benefits

1a) Asbestos Worker/Insulator (Includes application of insulating materials, protective coverings, coatings, & finishes to all types of mechanical systems; application of firestopping material for wall openings & penetrations in walls, floors, ceilings

38.25

27.96

1b) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters. **See Laborers Group 7**

1c) Asbestos Worker/Heat and Frost Insulator

40.21

30.99

As of: Friday, November 22, 2019

Project: Venus Building Chiller Installation

2) Boilermaker	38.34	26.01
3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	34.72	33.58 + a
3b) Tile Setter	34.90	25.87
3c) Terrazzo Mechanics and Marble Setters	31.69	22.35
3d) Tile, Marble & Terrazzo Finishers	26.70	21.75
3e) Plasterer	33.48	32.06

As of: Friday, November 22, 2019

Project: Venus Building Chiller Installation

-----LABORERS-----

4) Group 1: Laborers (common or general), acetylene burners, concrete specialists, wrecking laborers, fire watchers.	30.75	20.84
4a) Group 2: Mortar mixers, plaster tender, power buggy operators, powdermen, fireproofers/mixer/nozzleman (Person running mixer and spraying fireproof only).	31.00	20.84
4b) Group 3: Jackhammer operators/pavement breaker, mason tender (brick), mason tender (cement/concrete), forklift operators and forklift operators (masonry).	31.25	20.84
4c) **Group 4: Pipelayers (Installation of water, storm drainage or sewage lines outside of the building line with P6, P7 license) (the pipelayer rate shall apply only to one or two employees of the total crew who primary task is to actually perform the mating of pipe sections) P6 and P7 rate is \$26.80.	31.75	20.84
4d) Group 5: Air track operator, sand blaster and hydraulic drills.	31.50	20.84

As of: Friday, November 22, 2019

Project: Venus Building Chiller Installation

4e) Group 6: Blasters, nuclear and toxic waste removal.	33.75	20.84
4f) Group 7: Asbestos/lead removal and encapsulation (except it's removal from mechanical systems which are not to be scrapped).	31.75	20.84
4g) Group 8: Bottom men on open air caisson, cylindrical work and boring crew.	29.03	20.84
4h) Group 9: Top men on open air caisson, cylindrical work and boring crew.	28.49	20.84
4i) Group 10: Traffic Control Signalman	18.00	20.84
5) Carpenter, Acoustical Ceiling Installation, Soft Floor/Vinyl Floor/Carpet Laying, Metal Stud Installation, Form Work and Scaffold Building, Drywall Hanging, Modular-Furniture Systems Installers, Lathers, Piledrivers, Resilient Floor Layers.	33.53	25.66

As of: Friday, November 22, 2019

Project: Venus Building Chiller Installation

5a) Millwrights	34.04	26.09
6) Electrical Worker (including low voltage wiring) (Trade License required: E1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	39.62	27.25+3% of gross wage
7a) Elevator Mechanic (Trade License required: R-1,2,5,6)	53.37	33.705+a+b
-----LINE CONSTRUCTION-----		
Groundman	26.50	6.5% + 9.00
Linemen/Cable Splicer	48.19	6.5% + 22.00

As of: Friday, November 22, 2019

Project: Venus Building Chiller Installation

8) Glazier (Trade License required: FG-1,2)	38.18	21.80 + a
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9) Ironworker, Ornamental, Reinforcing, Structural, and Precast Concrete Erection	36.67	35.77
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----OPERATORS----

Group 1: Crane handling or erecting structural steel or stone, hoisting engineer 2 drums or over, front end loader (7 cubic yards or over), work boat 26 ft. and over and Tunnel Boring Machines. (Trade License Required)	40.97	24.80 + a
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Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver (\$3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required)	40.64	24.80 + a
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Group 3: Excavator; Backhoe/Excavator under 2 cubic yards; Cranes (under 100 ton rated capacity), Grader/Blade; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar); Grader Operator; Bulldozer Fine Grade. (slopes, shaping, laser or GPS, etc.). (Trade License Required)	39.88	24.80 + a
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Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper).	39.48	24.80 + a
Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	38.87	24.80 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller; Pile Testing Machine.	38.87	24.80 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	38.55	24.80 + a
Group 7: Asphalt roller, concrete saws and cutters (ride on types), vermeer concrete cutter, Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and under Mandrell).	38.20	24.80 + a
Group 8: Mechanic, grease truck operator, hydroblaster; barrier mover; power stone spreader; welding; work boat under 26 ft.; transfer machine.	37.79	24.80 + a

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Group 9: Front end loader (under 3 cubic yards), skid steer loader regardless of attachments, (Bobcat or Similar): forklift, power chipper; landscape equipment (including Hydroseeder).	37.34	24.80 + a
Group 10: Vibratory hammer; ice machine; diesel and air, hammer, etc.	35.24	24.80 + a
Group 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.	35.24	24.80 + a
Group 12: Wellpoint operator.	35.18	24.80 + a
Group 13: Compressor battery operator.	34.58	24.80 + a
Group 14: Elevator operator; tow motor operator (solid tire no rough terrain).	33.41	24.80 + a

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Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	32.99	24.80 + a
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Group 16: Maintenance Engineer/Oiler.	32.32	24.80 + a
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Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	36.76	24.80 + a
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Group 18: Power safety boat; vacuum truck; zim mixer; sweeper; (Minimum for any job requiring a CDL license).	34.26	24.80 + a
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-----PAINTERS (Including Drywall Finishing)-----

10a) Brush and Roller	34.62	21.80
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10b) Taping Only/Drywall Finishing	35.37	21.80
10c) Paperhanger and Red Label	35.12	21.80
10e) Blast and Spray	37.62	21.80
11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	43.62	32.06
12) Well Digger, Pile Testing Machine	37.26	24.05 + a
Roofer: Cole Tar Pitch	41.50	17.00 + a

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Rofer: Slate, Tile, Composition, Shingles, Singly Ply and Damp/Waterproofing	40.00	17.00 + a
15) Sheetmetal Worker (Trade License required for HVAC and Ductwork: SM-1,SM-2,SM-3,SM-4,SM-5,SM-6)	44.74	42.48
16) Pipefitter (Including HVAC work) License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4, G-1, G-2, G-8 & G-9)	(Trade	43.62 32.06

-----TRUCK DRIVERS-----

17a) 2 Axle	29.51	24.52 + a
17b) 3 Axle, 2 Axle Ready Mix	29.62	24.52 + a

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17c) 3 Axle Ready Mix	29.67	24.52 + a
17d) 4 Axle, Heavy Duty Trailer up to 40 tons	29.72	24.52 + a
17e) 4 Axle Ready Mix	29.77	24.52 + a
17f) Heavy Duty Trailer (40 Tons and Over)	29.98	24.52 + a
17g) Specialized Earth Moving Equipment (Other Than Conventional Type on-the-Road Trucks and Semi-Trailers, Including Euclids)	29.77	24.52 + a
18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	45.57	24.33 + a

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19) Theatrical Stage Journeyman	25.76	7.34
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Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional \$1.25 per hour for truck drivers.*

***Note: Hazardous waste premium \$3.00 per hour over classified rate*

ALL Cranes: When crane operator is operating equipment that requires a fully licensed crane operator to operate he receives an extra \$4.00 premium in addition to the hourly wage rate and benefit contributions:

1) Crane handling or erecting structural steel or stone; hoisting engineer (2 drums or over)

2) Cranes (100 ton rate capacity and over) Bauer Drill/Caisson

3) Cranes (under 100 ton rated capacity)

Crane with 150 ft. boom (including jib) - \$1.50 extra

Crane with 200 ft. boom (including jib) - \$2.50 extra

Crane with 250 ft. boom (including jib) - \$5.00 extra

Crane with 300 ft. boom (including jib) - \$7.00 extra

Crane with 400 ft. boom (including jib) - \$10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyman instructing and supervising the work of each apprentice in a specific trade.

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.

Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.

It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.

The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol. For those without internet access, please contact the division listed below.

The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.

All subsequent annual adjustments will be posted on our Web Site for contractor access.

Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.

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Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

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