

BID PROPOSAL AND SPECIFICATIONS

HVAC MODIFICATION

RFB # 14-0274



COUNTY COMMISSIONERS

WOODY WHITE, CHAIRMAN

BETH DAWSON, VICE-CHAIRMAN

JONATHAN BARFIELD, JR.

BRIAN BERGER

THOMAS WOLFE

CHRIS COUDRIET, COUNTY MANAGER

NEW HANOVER COUNTY
HVAC MODIFICATION PROJECT

RFB 14-0274

Location:

230 Government Center Drive, Unit 127-42
Wilmington, NC 28401

Project Manager

New Hanover Co. Property Management
200 Division Drive
Wilmington, NC 28401

Jerome Fennell - Director

David Wittenberg – Manager

Thomas Melton-Trades Supervisor

EXHIBIT "A" – SCOPE OF WORK AND INVITATION TO BID

New Hanover County invites AC Contractors to bid on the County's HVAC modification Project. Sealed bids will be received by New Hanover County in the Office of New Hanover County Finance Department, located at 230 Government Center Drive Suite 165, Wilmington, North Carolina 28403, by 3:00 pm on April 9, 2014. Please send all bids to the attention of Lori Colon, Purchasing Agent. This project will be bid and awarded in accordance with G.S. 143-131, Informal Bidding Procedures.

Work shall include but not limited to:

- 1) ***DISCONNECT AND RECONNECT SERVICE TO AIR HANDLING UNIT AND OUTDOOR HEAT PUMP.***
- 2) ***PROVIDE SERVICE TO A NEW AIR HANDLING UNIT, OUTDOOR CONDENSING UNIT AND FAN.***
- 3) ***PROVIDE ALL REQUIRED DEMOLITION.***
- 4) ***CHANGE OUT A 4 TON HEAT PUMP AND AIR HANDLING UNIT WITH A 5 TON HEAT PUMP AND AIR HANDLING UNIT.***
- 5) ***PROVIDE AND INSTALL A 100% FRESH AIR MAKE UP SYSTEM WITH DUCT AND GRILLES.***
- 6) ***PROVIDE AND INSTALL A VENT FAN WITH DUCK, GRILLE, AND LOUVER.***
- 7) ***MODIFY THE DUCT TO THE EXISTING 4 TON SYSTEM.***
- 8) ***PROVIDE AND INSTALL ALL CONTROLS. INCLUDING THE INTERLOCKING, THE DISCHARGE FAN WITH THE AHV.***

AC Contractors must have a minimum of two (2) years of experience on competitively bid, publicly funded, construction projects e.g. City, County, State or School Systems. Contractor must work around tenate- Driving Schools schedule.

A Pre-Bid Conference will be held at the Finance Department, 502 Conference Room, 230 Government Center Drive Suite 165 Wilmington, North Carolina 28403, at 10:00 am on March 28 2014. The Project Manager and a representative from New Hanover County will be available at that time. All questions shall be in writing address to Lori Colon, Purchasing Agent. Questions shall be emailed to lcolon@nhcgov.com. The deadline for a question asked is April 1, 2014 by 3:00 p.m. All questions will be answered by April 3, 2014 by 5:00 p.m.

New Hanover County reserves the right to reject any and all bids waive informalities and irregularities in bidding and to accept bids which are considered to be in the best interest of the County.

Bidding Schedule.

March 19, 2014	RFB Issued and advertised. Wednesday March 19, 2014.
March 28, 2014	Pre-bid meeting and site visit will be held on Friday March 28, 2014 at 10:00 AM.
April 1, 2014	Deadline for questions. All questions must be submitted in writing by 3:00 pm Tuesday April 1, 2014.
April 3, 2013	Questions will be answered in writing by 5:00 pm on Thursday April 3, 2014.
April 9, 2013	Due Date for Bid. Bids must be received by 3:00 pm on Wednesday April 9, 2014.

SECTION I

INFORMATION FOR BIDDERS

I-1. SUBMISSION OF BIDS AND BID OPENING:

- A. Bids will be received by New Hanover County and will be opened and read at the times and places set forth in the Invitation to Bid. Bidders, or their representative, and other interested persons may be present at the opening of proposals.
- B. The envelope containing the bid must be sealed and addressed to the attention : Lori Colon, Purchasing Agent New Hanover County, Finance Department, 230 Government Center Drive Suite 165, Wilmington, N.C. 28403. The outside of the envelope should also indicate the name of the Project, the name of the Bidder and the Bidder's North Carolina State Contractor's License Number.
- C. The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids. The time with respect to the bid will be the Standard Time for the United States as maintained by the Time Services Department of the U.S. Naval Observaory: <http://www.usno.navy.mil/USNO/time/display-clocks/simpletime> . Bids will not be accepted after the time(s) set forth in the Invitation to Bid.
- D. Bids will be received in accordance with the Invitation to Bid.

I-2. BIDDING DOCUMENTS:

- A. Bidding Documents include the Invitation to Bid, Information for Bidders, Bid Form, the Bid Security, Affidavit's of Minority Participation and the Contract Documents, including any Addenda issued prior to receipt of bids. All requirements and obligations of the Bidding Documents are hereby incorporated by reference into the Contract Documents and are binding on the Successful Bidder upon award of the contract.
- B. Bidders may obtain complete sets of the Bidding Documents as designated in the Invitation to Bid in the number and for the deposit, if any, stated therein.
- C. Bidders shall use complete sets of Bidding Documents in preparing Bids; neither the Owner nor the Design Consultant shall assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- D. The Owner in making copies of the Bidding Documents available on the above terms does so only for the purpose of obtaining Bids on the Work and does not confer a license or grant for any other use.

I-3. DEFINITIONS:

- A. THE BID:

A Bid is a complete and properly signed proposal to do the work or designated portion thereof for the sums stipulated therein, submitted in accordance with the Bidding Documents and G. S. 143-131, Informal Bidding Procedures.

B. BASE BID:

The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which work may be added or from which work may be deleted for sums stated in Alternate Bids, if any.

C. ALTERNATES:

An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

D. HE/HIS:

The term He or His is not intended to be gender specific.

I-4. QUALIFICATION OF BIDDER:

- A. The Contractor must have been engaged in the performance of the type of work described in the Contract Documents for a period of no less than TWO years prior to submitting a bid.
- B. Prior to Contract award or within seven days of the Owner's request to do so, the successful Bidder shall be prepared to provide sufficient references from customers with contracts of similar or greater size and scope, and other proof showing to Owner's satisfaction that Contractor is sufficiently experienced and capable of properly performing its proposed Contract with the Owner. Low Bidders that have failed to successfully perform one or more previous contracts with Owner must provide at least three (3) such references in writing from projects performed subsequent to such low bidder's most recent nonperformance of a contract with the Owner. In addition to references, Contractor must demonstrate that his present organization, direct labor force and prior work experience is of adequate size and development to maintain responsible control of the project and to schedule, coordinate and perform the work in an expeditious manner and in accordance with the Contract Documents.
- C. Bidders, whether residents or nonresidents in North Carolina will be required to show evidence of a valid North Carolina State Contractor's License Number before their bids will be considered.
- D. The Owner will consider, in determining the qualifications of a Bidder, his record in the performance of any contracts for construction work into which he may have entered with the Owner or with similar public or private bodies or corporations. The Owner expressly reserves the right to reject the bid of any Bidder if such record discloses that such Bidder, in the opinion of the Owner, 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, material suppliers or employees.

- E. The Owner may make such investigation as they deem necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the Owner all such information and data for this purpose as they may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of such Bidder, fails to satisfy the Owner that such Bidder is a responsive and responsible Bidder in accordance with N.C. Gen. Stat. 143-128 and 143-129, and the criteria set forth herein.

I-5. BIDDER'S REPRESENTATIONS:

Each Bidder by submitting his Bid represents that:

- A. He has read and understands the Bidding Documents and his Bid is made in accordance therewith; and Bidder agrees to be bound by the terms and requirements set forth in the Bidding and Contract Documents;
- B. He has visited the site, has familiarized himself with the local conditions under which the Work is to be performed in accordance with Article I-9 herein, and has correlated his observations with the requirements of the proposed Contract Documents;
- C. His Bid is based upon the materials, systems and equipment required by the Bidding Documents without exception; and
- D. He has the capability, in all respects, and the moral and business integrity, reliability, technical ability, financial resources, plant, management, superintendents, equipment and materials which will assure effective and efficient good faith performance in full compliance with the Contract Documents and with any and all schedules and Milestone and Completion dates required by the Owner. The Bidder acknowledges and represents in his estimating, planning and scheduling of the Work that the Contract Time has made allowances for normal inclement weather indigenous to the Project Site. The Bidder hereby certifies that the work shall be completed, in place, in full accordance with the Contract Documents, within the time limits specified.
- E. He agrees that upon receipt of the Notice of Award, he will execute the formal Contract, and will deliver all bonds and proof of insurance coverage as required by the Bidding Documents.
- F. He agrees to execute the formal Contract within ten (10) business days from the date of Notice of Award, and in case he fails or neglects to appear within the specified time to execute the Contract, he will be considered as having abandoned the Contract, and the Bid Security accompanying this Proposal will be forfeited to the Owner by reason of such failure on the part of the Bidder.
- G. He has made an effort to meet New Hanover County's verifiable ten percent (10%) goal for participation by minority businesses in the total value of the work per the New Hanover County Agreement between Contractor and County.
- H. He has received the New Hanover County Form of Agreement Between Owner and Contractor.

I-6. BID SECURITY:

Bid Bonds, performance or payment bonds are not required.

I-7. FORFEITURE OF BID BOND:

The Successful Bidder, upon his failure or refusal to execute the Contract within ten (10) business days after he has received Notice of Award, shall forfeit to the Owner the security deposited with his bid in accordance with North Carolina General Statute 143-129.

I-8. MINORITY BUSINESS ENTERPRISES

It is the policy of the Owner to encourage the use of minority businesses in all county construction contracts and have a verifiable percentage goal of ten percent (10%) participation in the total value of the work. It is the intent of this policy that the Owner, as awarding authority for county construction projects, and the Prime Contractors and Subcontractors performing the construction contracts awarded shall cooperate and in good faith do all things legal, proper, and reasonable to achieve the verifiable goal of ten percent (10%) participation. Each bidder will take specific actions to insure a good faith effort in the recruitment and selection of minority businesses.

- A. For Bids that include work performed with its own workforce: A Bidder that performs all of the work under a contract with its own workforce may submit with their bid an affidavit to that effect in lieu of the affidavit mentioned in the previous subsection A. This affidavit is Affidavit B – Intent to Perform Contract with Own Forces and is included as an attachment to Section I, Information to Bidders, and Section II, Bid Form.

NOTE: The Bidder must include either Affidavit D –Good Faith Efforts or Affidavit B – Intent to Perform Contract with Own Workforce with its bid. Failure to include either of these affidavits with the bid may result in declaring the bid non-responsive.

- B. Each Bidder shall identify on its bid the minority businesses that it will use on the project and the corresponding dollar value of the bid. Section II, Bid Form, provides space for the Bidder to enter this information.

SUBMITTED BY THE LOWEST RESPONSIBLE, RESPONSIVE BIDDER WITHIN 72 HOURS AFTER NOTIFICATION OF BEING LOW BIDDER

- C. An affidavit that includes a description of the portion of work to be executed by the minority businesses, expressed as a percentage of the total contract price, which is equal to or greater than the verifiable ten percent (10%) goal. This affidavit is Affidavit C – Portion of the Work to be Performed by Minority Firms and is included as an attachment to Section II, Information to Bidders.
- D. Documentation of its good faith effort to meet the verifiable ten percent (10%) goal. The documentation must include evidence of all good faith efforts that were implemented, including any advertisements, solicitations, and evidence of other specific actions demonstrating recruitment and selection of minority businesses for participation in the contract. This affidavit

is Affidavit D – Good Faith Efforts and is included as an attachment to Section II, Information to Bidders.

NOTE: The lowest responsible and responsive bidder must submit either Affidavit C – Portion of the Work to be Performed by Minority Firms or Affidavit D – Good Faith Efforts within 72 hours after notification of being low bidder. Failure to submit either of these affidavits within the time provided may result in declaring the bid non-responsive.

I-9. SITE CONDITIONS AND CONDITIONS OF THE WORK:

- A. Each bidder must acquaint himself thoroughly as to the character and nature of the work to be done. Each bidder furthermore must make a careful examination of the site of the work and inform himself fully as to the difficulties to be encountered in the performance of the work, the facilities for delivering, storing and placing materials and equipment, and other conditions relating to construction and labor.
- B. No plea of ignorance of conditions that exist or may hereafter exist on the site of the work, or difficulties that may be encountered in the execution of the work, as a result of failure to make necessary investigations and examinations, will be accepted as an excuse for any failure or omission on the part of the successful Bidder to fulfill in every detail all the requirements of the Contract Documents and to complete the work or the consideration set forth therein, or as a basis for any claim whatsoever.
- C. Insofar as possible, the Successful Bidder, in carrying out his work, must employ such methods or means as will not cause interruption of or interference with the work of the Owner or any separate contractor.

I-10. BIDDER'S QUESTIONS, ADDENDA AND INTERPRETATIONS:

- A. Bidders and Sub-bidders shall promptly notify the Design Consultant of any ambiguity, inconsistency or error which they may discover upon examination of the Bidding and Contract Documents or of the site and local conditions. No interpretation of the meaning of the drawings, specifications or other contract documents will be made to any Bidder orally.
- B. Every request for such interpretation should be in writing addressed to the Design Consultant with a copy forwarded to the Owner.
- C. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the Bidding Documents which, if issued, will be transmitted to all prospective Bidders (at the respective addresses furnished for such purposes) not later than three calendar days prior to the date fixed for the opening of bids. Neither the Design Consultant nor the Owner will be responsible for any other explanations or interpretations of the proposed documents. Failure of any Bidder to receive any such addendum or interpretation shall not relieve any bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.
- D. Each Bidder shall ascertain prior to submitting his bid that he has received all Addenda issued, and he shall acknowledge receipt and inclusion in his proposal of all Addenda.

F. A representative for New Hanover County will be available at a Pre-Bid Conference to answer questions concerning the project. The date and time of the Pre-Bid Conference shall be determined in the Invitation to Bid.

I-11. SECURITY FOR FAITHFUL PERFORMANCE:

Performance and Payment Bonds:

The Successful bidder shall furnish a Performance Bond in an amount equal to one hundred percent (100%) of the Contract Sum as security for the faithful performance of this Contract and also a Labor and Material Payment Bond in an amount not less than one hundred percent (100%) of the Contract Sum, as security for the payment of all persons performing labor and furnishing materials under this Contract. The Performance Bond and the Labor and Material Payment Bond shall be in separate instruments acceptable to the Owner, in accordance with State law and shall be delivered to the Owner not later than the date of execution of the Contract by the Contractor.

I-12. TIME OR COMPLETION AND LIQUIDATED DAMAGES FOR NON-COMPLETION:

The time for completion of this Contract and liquidated damages for non-completion within the stipulated time shall be as fixed in the Supplemental Conditions.

I-13. LOCATION OF WORK:

The site of the proposed work is on Owner owned property, public streets, easements and/or other right-of-ways, as shown on the drawings.

I-14. LIABILITY INSURANCE AND WORKMEN'S COMPENSATION:

The Successful Bidder will be required to maintain Commercial General Liability, Workmen's Compensation and other insurance in the amounts and under the terms stipulated in the New Hanover County Agreement between Contractor and County

Insurance Description	Minimum Limits of Insurance Required <i>**Subject to change depending on size/location/description of work**</i>	
Commercial General Liability**	\$1mil Ea. Occurrence; \$1mil Products/Completed Operations; General Aggregate Limit shall apply separately to this project/location or the general aggregate limit shall be twice the required limit.	
Business Auto Liability	\$1,000,000 Each Accident; Any Auto including Hired & Non-owned Liability	
Worker's Compensation Employer's Liability	Statutory Limits \$500,000/\$500,000/\$500,000	This policy must include a Waiver of Subrogation.
Installation Floater	Amount = to value of equipment being installed	
Additional Insured CG 20 10 & CG 20 37	** New Hanover County (<i>not the department</i>), its officers, officials, agents and employees	
A combination of Umbrella/Excess and primary limit may be used to provide coverage for the amount shown.		
Worker's Compensation is required if the contractor/vendor has employees. A Waiver of Worker's Compensation is acceptable for a Sole Proprietor, Partners, or LLC that has NO employees.		
Please refer to contract draft terms for full specifications.		
Certificates of Insurance should include the following:		
1. New Hanover County, its officers, officials, agents and employees as an additional insured (<i>as noted above by **</i>). 2. Disclose any self-insured retention (allowed only if pre-approved). 3. Designate New Hanover County, 230 Government Center Dr #125, Wilmington, NC 28403 as certificate holder. 4. New Hanover County shall be notified at least 30 days in advance of cancellation or material change in coverage. 5. Provide a Waiver of Subrogation on Worker's Compensation/Employer's Liability; contact Risk Mgmt. if not available from insurer.		

I-15. BIDDERS REFERRED TO LAWS:

- A. The attention of Bidders is called to the provisions of all Municipal, County and State laws, regulations, ordinances and resolutions, including but not limited to, (the Human Rights Ordinance; the Equal Opportunity, Small and Minority Business Enterprises and the Construction Safety Resolutions); as well as laws, regulations, ordinance resolutions and permits relating to obstructing streets, maintaining signals, storing and handling of explosives, affecting the Bidder, or his employees or his work hereunder in his relation to the Owner or any other person. The Bidder shall obey all such laws, regulations, ordinances, permits or resolutions controlling or limiting Contractors while engaged in the prosecution of work under this Contract.

- B. The provisions of this contract shall be interpreted in accordance with the laws of North Carolina and in accordance with the laws, ordinances, regulations, permits and resolutions of local Municipalities and New Hanover County.

E-Verify Compliance. Pursuant to Session Law 2014-418, Contractor shall fully comply with the U.S. Department of Homeland Security employee legal status E-Verify requirements for itself and all its subcontractors. County shall be provided affidavits attesting to Contractor's compliance. Violation of the provision, unless timely cured, shall constitute a breach of Contract.

I-16. TAXES

All applicable Federal, State and Local Taxes shall be included in the Bidder's proposal. The successful bidder shall provide the Owner with documentation of North Carolina sales taxes paid for all purchases on the project in a form provided by the Owner and included as an attachment to this Section II, Information to Bidders.

I- 17. RIGHT TO REJECT BIDS:

The Owner expressly reserves the right to reject any or all bids, to waive any informalities or irregularities in the bids received, and to accept that bid which in its judgment, best serves the interest of the Owner.

I-18. EQUAL PRODUCTS AND SUBSTITUTIONS:

- A. Whenever possible, the Design Consultant shall specify in the plans the required performance and design characteristics for materials as required by N.C. Gen. Stat. § 133-3. When it is impossible or impractical to specify the required performance and design characteristics for materials, the Design Consultant may use a certain brand, make, manufacturer, article, device, product, material, fixture, form or type construction by name, make or catalog number to convey the general style, type, character and standard of quality of the article desired. Unless specifically stated to the contrary, any Bidder may, with Owner approval, use any article, device, product, material, fixture, form or type of construction which in the judgment of the Design Consultant is equal to that specified considering quality, workmanship, economy of operation, durability, suitably for the purpose intended, and acceptability for use on the project. Such requests must be submitted **seven (7)** days prior to bid opening date. Approval by the Owner prior to bid opening will be in the form of an Addendum to the Specifications issued to all prospective Bidders indicating that the additional makes or brands appear to be equivalent to those specified. Nothing in this paragraph is intended to restrict or inhibit free and open competition on county projects.

I-19. PREPARATION AND SUBMITTAL OF BID:

- A. Bids shall be submitted utilizing the Bid Form as bound herein as Section II, or otherwise provided with the Contract Documents, and shall be complete in every respect. The total bid amount shall be entered in words and figures in the space provided. Where applicable, the unit price or lump sum items, and their extensions, shall be entered in figures in the respective columns provided for each bid item. All entries shall be typewritten or printed in ink. The signatures of all persons shall be in longhand. Any entry of amount that appears on the face of the bid to have involved an erasure, deletion, white-out and/or substitution or other such change or alteration, shall show by them the initials of the person signing the bid and the date of the change or alteration. A failure to comply with this requirement may be cause for disqualification of the bid.
- B. For Unit Price bids, in the event of any discrepancies between the unit prices and the extensions thereof or the total bid amount, the unit prices shall govern. For Lump Sum bids, in the event of a discrepancy between the bid amount in writing and that in figures, the written value shall govern.

- C. Bids shall not contain any restatement or qualifications of work to be done, and alternate bids will not be considered unless called for. No oral bids or modifications will be considered.
- D. The amount of a bid submitted by a subcontractor to the general contractor under the single prime contracting system shall not exceed the bid, if any, for the same work by that subcontractor to the Owner under the multiple prime system.
- E. Each single-prime bid shall identify the major subcontractors, including but not limited to the contractors selected to perform the mechanical, electrical and plumbing portions of the work, if applicable, and the subcontractors' respective bid prices for the work.

I-20. MODIFICATION OR WITHDRAWAL OF BID:

- A. A Bidder may withdraw his bid from consideration if such bid was based upon a mistake as provided in North Carolina General Statute 143-129.1.
- B. Prior to the time and date designated for receipt of bids, any bid submitted may be modified or withdrawn by notice to the party receiving bids at the place designated for receipt of bids. Such notice shall be in writing over the signature of the Bidder or by telegrams; if by telegram, written confirmation over the signature of the Bidder shall be mailed and postmarked on or before the date and time set for receipt of bids, and it shall be so worded as not to reveal the amount of the original bid.
- C. Withdrawn bids may be resubmitted up to the time designated for the receipt of Bids provided that they are then fully in conformance with this Information for Bidders.
- D. Bid security, if any is required, shall be in an amount sufficient for the bid as modified or resubmitted.

I- 21. DETAILED BID BREAKDOWN:

If the Owner directs, the Bidder shall provide a detailed breakdown of his bid acceptable to the Owner. In addition to verifying accounting requirements, the breakdown may be used by the Owner to determine whether the Bidder has grossly misjudged the requirements of any area. Failure to provide the requested detailed breakdown may result in rejection of the bid proposal.

I- 22. AWARD OF CONTRACT:

The contract will be awarded to the lowest responsive and responsible bidder under the single prime system taking into consideration quality, performance, and the time specified in the bids for the performance of the contract.

- A. The lowest single prime bidder shall be determined by the aggregate amount of the unit prices set forth in the form of bid, if work is bid on a unit price basis, or the aggregate amount of the Base Bid, plus any Alternates selected by the Owner. Single prime bids will be received and awarded according to state law.
- B. A Responsive Bidder shall mean a Bidder who has submitted a bid which conforms, in all material respects, to the Bidding Documents.

- C. A Responsible Bidder shall mean a Bidder who has the capability, in all respects, to perform fully the contract requirements and the moral and business integrity and reliability which will assure good faith performance. In determining responsibility, the following criteria will be considered:
1. The ability, capacity and skill of the Bidder to perform the contract or provide the service required;
 2. Whether the bidder can perform the contract or provide the service promptly, or within the time specified, without delay or interference;
 3. The character, integrity, reputation, judgment, experience and efficiency of the Bidder;
 4. The quality of performance of previous contracts or services. For example the following information will be considered:
 - a. The administrative and consultant cost overruns incurred by Owners on previous contracts with Bidder,
 - b. The Bidder's compliance record with contract general conditions on other projects,
 - c. The submittal by the bidder of excessive and/or unsubstantiated extra cost proposals and claims on other projects,
 - d. The Bidder's record for completion of the work within the Contract Time or within Contract Milestones and Bidders compliance with scheduling and coordination requirements on other projects,
 - e. The Bidder's demonstrated cooperation with the Owner or the Design Consultant and other contractors on previous contracts,
 - f. Whether the work performed and materials furnished on previous contracts was in accordance with the Contract Documents;
 5. The previous and existing compliance by the bidder with laws and ordinances relating to contracts or services;
 6. The sufficiency of the financial resources and ability of the Bidder to perform the contract or provide the service;
 7. The quality, availability and adaptability of the goods or services to the particular use required;
 8. The ability of the Bidder to provide future maintenance and service for the warranty period of the contract;
 9. Whether the Bidder is in arrears to the Owner on debt or contract or is a defaulter on surety to the Owner;

10. Whether the bidder has demonstrated a good faith effort to use M/WBE's as subcontractors;
 11. Such other information as may be secured by the Owner having a bearing on the decision to award the contract, to include, but not limited to:
 - a. The ability, experience and commitment of the Bidder to properly and reasonably plan, schedule, coordinate and execute the Work,
 - b. Whether the Bidder has ever been debarred from bidding or found ineligible for bidding on any other projects.
- D. The purpose of the above is to enable the Owner in its opinion, to select the lowest responsible bidder. The ability of the low Bidder to provide the required bonds will not of itself demonstrate responsibility of the Bidder.
- E. The Owner reserves the right to require from the Bidder: (1) submissions of references, within seven days of bid opening, to include a listing of previous and current projects and (2) financial statements indicating current financial status, prepared in accordance with generally accepted accounting principles, by a CPA licensed to do business in North Carolina, (3) any other information deemed necessary in order to establish the responsiveness and responsibility of the bidder.
- F. The Owner reserves the right to defer award of this contract for a period of forty-five (45) days after the due date of bids. During this period of time, the Bidder shall guarantee the prices quoted in his bid.

END OF SECTION I - INFORMATION FOR BIDDERS

STATE OF NORTH CAROLINA

AFFIDAVIT

COUNTY OF NEW HANOVER

I, _____ (the individual attesting below), being duly authorized by and on behalf of _____ (the entity bidding on project hereinafter "Employer") after first being duly sworn hereby swears or affirms as follows:

- 1. Employer understands that E-Verify is the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law in accordance with NCGS §64-25(5).
- 2. Employer understands that Employers Must Use E-Verify. Each employer, after hiring an employee to work in the United States, shall verify the work authorization of the employee through E-Verify in accordance with NCGS§64-26(a).
- 3. Employer is a person, business entity, or other organization that transacts business in this State and that employs 25 or more employees in this State. (mark Yes or No)
 - a. YES _____, or
 - b. NO _____
- 4. Employer's subcontractors comply with E-Verify, and if Employer is the winning bidder on this project Employer will ensure compliance with E-Verify by any subcontractors subsequently hired by Employer.

This ____ day of _____, 2013.

Signature of Affiant
Print or Type Name: _____

State of North Carolina County of New Hanover

Signed and sworn to (or affirmed) before me, this the ____ day of _____, 2013.

My Commission Expires:

Notary Public

(Affix Official/Notarial Seal)

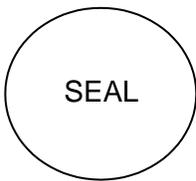
Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of North Carolina, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

AFFIDAVIT D – Good Faith Efforts

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the goal of 10% participation by minority business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

Affidavit of: _____
(Name of Bidder)

I do certify the attached documentation as true and accurate representation of my good faith efforts.
Attach additional sheets if required

Name and Phone Number	Minority Category	Work description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

Documentation of the Bidder's good faith efforts to meet the goals set forth in these provisions. Examples of documentation include, but are not limited to, the following evidence:

- A. Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
- B. Copies of quotes or responses received from each firm responding to the solicitation.
- C. A telephone log of follow-up calls to each firm sent a solicitation.
- D. For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- E. Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.
- F. Copy of pre-bid roster.
- G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.
- H. Letter detailing reasons for rejection of minority business due to lack of qualification.
- I. Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of North Carolina, County of _____

Subscribed and sworn to before me this _____ day of _____ 20____

Notary Public _____

My commission expires _____

AFFIDAVIT E

MBE DOCUMENTATION FOR CONTRACT PAYMENTS

Prime Contractor/Architect: _____

Address & Phone: _____

Project Name: _____

SCO Project ID: _____

Pay Application #: _____ Period: _____

The following is a list of payments made to Minority Business Enterprises on this project for the above-mentioned period.

MBE FIRM NAME	* TYPE OF MBE	AMOUNT PAID THIS MONTH (With This Pay App)	TOTAL PAYMENTS TO DATE	TOTAL AMOUNT COMMITTED

*Minority categories: Black (B), Hispanic (H), Asian American (AA), American Indian (AI), White Female (WF), Socially and Economically Disadvantaged (SED)

Approved/Certified By:

Name

Title

Date

Signature

SUBMIT WITH EACH PAY REQUEST - FINAL PAYMENT - FINAL REPORT

**CONTRACTOR'S SALES TAX REPORT
N.C. STATE & LOCAL SALES TAXES PAID**

OWNER: New Hanover County

PROJECT NAME: _____

CONTRACTOR: _____ FOR PERIOD: _____

ADDRESS: _____

VENDOR NAME	VENDOR ADDRESS CITY & STATE	MATERIAL PURCHASED	INVOICE NUMBER	Date of Purchase	INVOICE AMOUNT	N.C. TAX	COUNTY TAX	NAME OF COUNTY
				TOTALS				

I hereby certify that, during the period stated above, North Carolina sales and use taxes were paid as listed above, with respect to building materials, supplies, fixtures, and equipment which have become a part of, or annexed to, a building or structure erected, altered or repaired for New Hanover, and that the vendors from whom the property was purchased, the dates and numbers of the invoices covering the purchases, the total amount of the invoices of each vendor, the North Carolina sales and use taxes paid, and the cost of property withdrawn from warehouse stock and North Carolina sales or use taxes paid are stated above.

Sworn to and Subscribed before me, this _____ day of _____ By: _____
 _____ Notary

My Commission Expires: _____ Title: _____

*Items that should **NOT** be included are: scaffolding, forms for concrete, fuel for operation of machinery and equipment, tools, equipment, equipment repair parts and equipment rentals.*

SECTION II

BID FORM

FOR: HVAC MODIFICATION PROJECT

Contract Number: 14-0274

TO: New Hanover County
Finance Department
230 Government Center Drive Suite 165
Wilmington, North Carolina 28403

FROM: _____
BIDDER

ADDRESS

CITY STATE ZIP

PHONE FAX EMAIL ADDRESS

1. BID PROPOSAL:

Having become completely familiar with the local conditions affecting the cost of work at the place where work is to be executed, and having carefully examined the site conditions as they currently exist, and having carefully examined Bidding Documents prepared by New Hanover County and titled:

HVAC Modification Project

Dated April 9, 2014 together with any addenda to such Bidding Documents as listed hereinafter, the undersigned hereby proposes and agrees to provide all labor, materials, plant, equipment, transportation and other facilities as necessary and/or required to execute all of the work described by the aforesaid Bidding Documents for the lump sum consideration of: (Bidder shall write in the amount of the base bid here)

_____ Dollars (\$ _____)

Total Bid _____

said amount being hereinafter referred to as the Total Bid or Total Bid Proposal.

2. SUBCONTRACTOR LISTING

Bidders shall identify below the names of major subcontractors, including but not limited to contractors selected to perform the mechanical, electrical and plumbing portions of the work, and the subcontractors' respective bid prices for the work. This information is required to be submitted at bid time. (Bidder shall write in the names and amounts of subcontracts below)

Name of Subcontractor	Amount of Bid

3. MINORITY BUSINESSES:

Please check the following: Is your organization registered with HUB office?

Yes _____ No _____

Is your organization a minority contractor, small contractor, physically handicapped contractor, a woman contractor, a disabled business enterprise, or a non-profit work center for the blind and severely disabled?

Yes _____ No _____

Each Bidder shall identify on its bid the minority businesses that it will use on the project and the corresponding total dollar value of the bid. (Bidder shall write in the names and subcontract amount of minority businesses used in bid)

Name of Minority Business	Subcontract Amount

In addition to the information above, the Bidder must complete and provide with the bid one of the following affidavits:

Affidavit A – Listing of Good Faith Efforts

This affidavit documents the good faith efforts of the Bidder and is to be submitted with the bid if the Bidder is subcontracting portions of the work.

Affidavit B – Intent to Perform Contract with Own Forces

This affidavit documents the intent of the Bidder to perform the contract with its own workforce and is to be submitted with the bid if the Bidder is not subcontracting portions of the work.

NOTE: The Bidder must include either Affidavit A or Affidavit B must be submitted with the bid. Failure to include either of these affidavits may result in declaring the bid non-responsive.

4. ADDENDA ACKNOWLEDGEMENT:

The undersigned acknowledges receipt of the following addenda: (Bidder to write in the number and date appearing on each addendum received)

Addendum No.	Date	Addendum No.	Date

5. The undersigned declares that the person or persons signing this Proposal is/are fully authorized to sign on behalf of the firm listed and to fully bind the firm listed to all the Proposal's conditions and provisions thereof.
6. It is agreed that no person or persons or company other than the firm listed below or as otherwise indicated has any interest whatsoever in this proposal or the contract that may be entered into as a result of the Proposal and that in all respects the proposal is legal and firm, submitted in good faith without collusion or fraud.
7. It is agreed that the undersigned has complied or will comply with all requirements of local, state, and national laws, and that no legal requirement has been or will be violated in making or accepting this Proposal, in awarding the contract to him and/or in the prosecution of the work required.
8. It is agreed that the undersigned shall provide any information deemed necessary by the Owner to establish the responsiveness and responsibility of the bidder.
9. The undersigned acknowledges that he has received the Agreement Between Owner and Contractor.
10. The following information is provided pursuant to the Contract Documents:
 1. Legal Name of Firm:

- a. If Firm is a corporation, state that corporation is organized under the laws of the State

of _____ Please affix corporate seal to this Form of Bid.

b. If Firm is a partnership, state names of partners: _____

c. If Firm is an individual using a trade name, state name of individual: _____

2. North Carolina Contractor's License Number: _____

Respectfully submitted, this

_____ day of _____, 20__

(Signature)

(Name Typed)

(Title)

(SEAL IF BIDDER IS A CORPORATION)

END OF SECTION II – BID FORM

**AFFIDAVIT B - INTENT TO PERFORM CONTRACT WITH OWN
FORCES**

County of _____

Affidavit of _____
(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the _____
_____ contract.
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

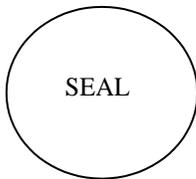
The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: _____ Name of Authorized Officer: _____

Signature: _____

Title: _____



State of North Carolina, County of _____

Subscribed and sworn to before me this _____ day of _____ 20 _____

Notary Public _____

My commission expires _____

SECTION III

OWNER-CONTRACTOR AGREEMENT

New Hanover County Agreement – Contract between New Hanover County and Contractor.

MINORITY BUSINESS PARTICIPATION

It is the policy of the Owner to encourage the use of minority businesses in all school construction contracts and have a verifiable percentage goal of ten percent (10%) participation in the total value of the work. It is the intent of this policy that the Owner, as awarding authority for school construction projects, and the Prime Contractors and Subcontractors performing the construction contracts awarded shall cooperate and in good faith do all things legal, proper, and reasonable to achieve the verifiable goal of ten percent (10%) participation. The Bidder shall make a good faith effort to utilize minority businesses per the requirements of Section I – Information to Bidders, Article I-8.

N.C. Division of Purchasing and Contract's Office for Historically Underutilized Businesses maintains a list of registered companies on "Vendor Link NC". Vendor Link NC is part of the N.C. Interactive Purchasing System and is a free online Internet service for companies to do business with the state. The web address is <http://www.ips.state.nc.us/ips/vendor/>. Questions about Vendor Link NC or IPS should be directed to the help desk (919) 733-4544 or (919) 733-4545.

SECTION V
REPLACED BY NEW HANOVER CO/CONTRACTOR AGREEMENT
SUPPLEMENTAL CONDITIONS

Amending the
New Hanover County Contract – New Hanover County Agreement Between Owner and contractor

The following Supplemental Conditions modify, change, delete, or add to the Contract or the Amended Conditions. Where any article of the Contract or Amended Conditions is modified or any paragraph deleted, subparagraph or clause thereof is modified, or deleted by these supplements, the unaltered provisions of such article, paragraph, subparagraph or clause shall remain in effect. If there is a discrepancy between the Contract and these Supplemental Conditions, the New Hanover County Agreement shall control.

1. Construction Document Sets

“ The Contractor can print the project specification off of the County’s internet site at any time”

2. Owner’s Representative

“Owner’s Representative shall be David Wittenberg unless otherwise stated by the Owner.”

3. Builder’s Risk

“Builders Risk Covered Loss Form insurance:
_____ is required for this Project
X is not required for this Project.”

4. Bonds

“Performance and Payment Bonds:
_____ are required.
X are not required.

5. Schedule

“The following dates shall be adhered to unless modified by mutual written agreement between Contractor and Owner and executed as a Change Order. All dates indicate midnight unless otherwise stipulated.

Notice of Award	T.B.D.
Pre-Construction Conference	T.B.D.
Notice to Proceed (Submittals and Equipment orders)	T.B.D.
Notice to Proceed (Construction)	T.B.D.
Substantial Completion	T.B.D.
Final Completion	T.B.D.

Owner reserves the right to withhold the issuance of Notice to Proceed by up to thirty (30) days. Contractor may not begin work until a written Notice to Proceed is issued. For each day

that Notice to Proceed is withheld pursuant to this paragraph, the dates established for Substantial Completion and Final Completion shall be adjusted. The Contractor shall not be entitled to additional compensation if the Owner withholds the issuance of Notice to Proceed pursuant to this paragraph.”

6. Working Hours

This paragraph shall define the normal scheduled working hours for this project. The contractor shall be responsible for all pay, including overtime pay of New Hanover County employee required to be on site while contractor is present at the facility.

No work on Holidays.

7. Liquidated Damages

“Substantial Completion Liquidated Damages shall be the sum of **250** dollars per calendar day, and this amount shall be assessed in accordance with the following:

“Contract Work shall begin and proceed in accordance with a Construction Schedule approved by the Design Consultant and Owner. For each day past the date set for Substantial Completion, including time extensions granted by written Change Order in which Contractor does not achieve Substantial Completion, Contractor shall pay to Owner as liquidated damages and not as a penalty an amount per day as stated above until Substantial Completion is achieved. For each day past the actual Final Completion date, including time extensions granted by written Change Order, in which Contractor does not achieve Final Completion, Contractor shall pay to Owner, in addition to the liquidated damages for failure to reach Substantial Completion as set forth above, as liquidated damages and not as a penalty, an amount per day as stated above until Final Completion is achieved. The sums assessed herein neither shall be in lieu or nor shall affect any other remedies available to Owner as a result of the failure of Contractor to complete the work in accordance with the terms of the Contract Documents. Time is of the essence in construing the obligations of Contractor under the Contract Documents and a material consideration thereof.”

END OF SECTION V – SUPPLEMENTAL CONDITIONS

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and drawing conventions.
7. Miscellaneous provisions.

B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.2 PROJECT INFORMATION

A. Project Identification: Contract Number 14-0274, New Hanover HVAC Modification Project.

1. Project Location: 230 Government Center Drive NC. 28403

B. Owner: New Hanover County Property Management – 200 Division Drive, Wilmington, NC 28401.

1. Owner's Representative: David Wittenberg, (910) 798-4330.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. HVAC Modification Project

B. Type of Contract.

1. Project will be constructed under a single prime contract.

1.4 ACCESS TO SITE

- A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.
- B. Use of Site: Limit use of Project site to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

1.5 COORDINATION WITH OCCUPANTS

- A. Owner Occupancy: Owner will occupy site and adjacent building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
 - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
 - 2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

1.6 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: See Section V - Supplemental Conditions.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than two days in advance of proposed utility interruptions.

2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
1. Notify Owner not less than two days in advance of proposed disruptive operations.
 2. Obtain Owner's written permission before proceeding with disruptive operations.
- E. Nonsmoking Building: Smoking is not permitted on campus.
- F. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

1.7 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Requests for Information (RFIs).
 - 2. Project meetings.

1.2 DEFINITIONS

- A. RFI: Request from Owner, Engineer, or Contractor seeking information required by or clarifications of the Contract Documents.

1.3 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.

1.4 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, which depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
 2. Preparation of the schedule of values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Preinstallation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.

1.5 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
1. Engineer will return RFIs submitted to Engineer by other entities controlled by Contractor with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Engineer.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
- C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Engineer.

- D. Engineer's Action: Engineer will review each RFI, determine action required, and respond. Allow seven working days for Engineer's response for each RFI. RFIs received by Engineer after 1:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Engineer's actions on submittals.
 - f. Incomplete RFIs or inaccurately prepared RFIs.
 2. Engineer's action may include a request for additional information, in which case Engineer's time for response will date from time of receipt of additional information.
 3. Engineer's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Engineer in writing within 10 days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Engineer.
 4. RFI number including RFIs that were dropped and not submitted.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Engineer's response was received.
- F. On receipt of Engineer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Engineer within seven days if Contractor disagrees with response.
1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

1.6 PROJECT MEETINGS

- A. General: Engineer will schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Engineer of scheduled meeting dates and times.

2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Engineer, within three days of the meeting.
- B. Preconstruction Conference: Engineer will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Engineer, but no later than 15 days after execution of the Agreement.
1. Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Procedures for testing and inspecting.
 - h. Procedures for processing Applications for Payment.
 - i. Distribution of the Contract Documents.
 - j. Submittal procedures.
 - k. Preparation of record documents.
 - l. Use of the premises and existing building.
 - m. Work restrictions.
 - n. Working hours.
 - o. Owner's occupancy requirements.
 - p. Responsibility for temporary facilities and controls.
 - q. Procedures for disruptions and shutdowns.
 - r. Construction waste management and recycling.
 - s. Parking availability.
 - t. Office, work, and storage areas.
 - u. Equipment deliveries and priorities.
 - v. First aid.
 - w. Security.
 - x. Progress cleaning.
 3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Progress Meetings: Engineer will conduct progress meetings at weekly intervals.
1. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.
 - 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of proposal requests.
 - 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) Pending claims and disputes.
 - 18) Documentation of information for payment requests.
3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Contractor's construction schedule.
 - 2. Construction schedule updating reports.
 - 3. Daily construction reports.
 - 4. Site condition reports.

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- C. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.

1.3 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
 - 1. Working electronic copy of schedule file, where indicated.
 - 2. PDF electronic file.
 - 3. One paper copies.
- B. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
- C. Construction Schedule Updating Reports: Submit with Applications for Payment.

- D. Daily Construction Reports: Submit at weekly intervals.
- E. Site Condition Reports: Submit at time of discovery of differing conditions.

1.4 COORDINATION

- A. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from entities involved.
 - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for commencement of the Work to date of final completion.
 - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
 - 1. Activity Duration: Define activities so no activity is longer than 7 days, unless specifically allowed by Engineer.
 - 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 - a. Major items or pieces of equipment.
 - 3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
 - 4. Startup and Testing Time: Include no fewer than 3 days for startup and testing.
 - 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Engineer's administrative procedures necessary for certification of Substantial Completion.
 - 6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use of premises restrictions.
 - f. Provisions for future construction.
 - g. Seasonal variations.
 - h. Environmental control.

2. Work Stages: Indicate important stages of construction for each major portion of the Work.

- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.

- E. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
 1. Unresolved issues.
 2. Unanswered Requests for Information.
 3. Rejected or unreturned submittals.
 4. Notations on returned submittals.
 5. Pending modifications affecting the Work and Contract Time.

- F. Recovery Schedule: When periodic update indicates the Work is 7 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule.

- G. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

- 2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)
 - A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's construction schedule before or at the Pre-Construction conference.
 - B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
 1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

- 2.3 REPORTS
 - A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
 1. List of subcontractors at Project site.

2. List of separate contractors at Project site.
3. Approximate count of personnel at Project site.
4. Equipment at Project site.
5. Material deliveries.
6. High and low temperatures and general weather conditions, including presence of rain.
7. Accidents.
8. Meetings and significant decisions.
9. Unusual events.
10. Stoppages, delays, shortages, and losses.
11. Emergency procedures.
12. Orders and requests of authorities having jurisdiction.
13. Change Orders received and implemented.
14. Construction Change Directives received and implemented.
15. Services connected and disconnected.
16. Equipment or system tests and startups.
17. Partial completions and occupancies.
18. Substantial Completions authorized.

- B. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At weekly intervals, update schedule to reflect actual construction progress and activities. Issue schedule at each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate final completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Engineer and Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.
- B. Related Requirements:
 - 1. Section 017700 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.

1.2 INFORMATIONAL SUBMITTALS

- A. Digital Photographs: Submit unaltered, original, full-size image files within three days of taking photographs.
 - 1. Digital Camera: Minimum sensor resolution of 3 megapixels.
 - 2. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Date photograph was taken.
 - d. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

1.3 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, with minimum size of 3 megapixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
 - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. Date and Time: Include date and time in file name for each image.
 - 2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Engineer.
- D. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points.
- E. Periodic Construction Photographs: Take photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- F. Final Completion Construction Photographs: Take color photographs after date of Substantial Completion for submission as Project Record Documents.

END OF SECTION 013233

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action.
- B. Informational Submittals: Written and graphic information and physical samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 - 1. Initial Review: Allow 14 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
 - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 - 3. Resubmittal Review: Allow 7 days for review of each resubmittal.
- C. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
 3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Engineer.
 4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner, containing the following information:
 - a. Project name.
 - b. Date.
 - c. Name and address of Engineer.
 - d. Name of Construction Manager.
 - e. Name of Contractor.
 - f. Name of firm or entity that prepared submittal.
 - g. Names of subcontractor, manufacturer, and supplier.
 - h. Category and type of submittal.
 - i. Submittal purpose and description.
 - j. Specification Section number and title.
 - k. Specification paragraph number or drawing designation and generic name for each of multiple items.
 - l. Drawing number and detail references, as appropriate.
 - m. Location(s) where product is to be installed, as appropriate.
 - n. Related physical samples submitted directly.
 - o. Indication of full or partial submittal.
 - p. Transmittal number, numbered consecutively.
 - q. Submittal and transmittal distribution record.
 - r. Other necessary identification.
 - s. Remarks.
 5. Metadata: Include the following information as keywords in the electronic submittal file metadata:
 - a. Project name.
 - b. Number and title of appropriate Specification Section.
 - c. Manufacturer name.
 - d. Product name.
- D. Options: Identify options requiring selection by Engineer.
- E. Deviations: Identify deviations from the Contract Documents on submittals.
- F. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.

2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked with approval notation from Engineer's action stamp.
- G. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, and installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- H. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Engineer's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements:

1. Submit electronic submittals via email as PDF electronic files.
 - a. Engineer will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
2. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
4. For equipment, include the following in addition to the above, as applicable:

- a. Wiring diagrams showing factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
- 5. Submit Product Data before or concurrent with Samples.
- 6. Submit Product Data in the following format:
 - a. PDF electronic file.
 - b. One paper copies of Product Data unless otherwise indicated.
- C. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation."
- D. Application for Payment and Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures."
- E. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."
- F. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
- G. Maintenance Data: Comply with requirements specified in Section 017823 "Operation and Maintenance Data."
- H. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Engineers and owners, and other information specified.
- I. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- J. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- K. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- L. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- M. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.

- N. Schedule of Tests and Inspections: Comply with requirements specified in Section 014000 "Quality Requirements."
- O. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ENGINEER'S ACTION

- A. General: Engineer will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or revisions required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- C. Informational Submittals: Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory.
 - 2. Operation manuals for systems, subsystems, and equipment.
 - 3. Product maintenance manuals.
 - 4. Systems and equipment maintenance manuals.

1.2 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Engineer will comment on whether content of operations and maintenance submittals are acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
 - 1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Engineer.
 - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
 - b. Enable inserted reviewer comments on draft submittals.
 - 2. Four paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. Engineer will return all copies.
- C. Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 3 days before commencing demonstration and training. Engineer will return copy with comments.
 - 1. Correct or revise each manual to comply with Engineer's comments. Submit copies of each corrected manual within days of receipt of Engineer's comments and prior to commencing demonstration and training.

PART 2 - PRODUCTS

2.1 REQUIREMENTS FOR OPERATION AND MAINTENANCE MANUALS

- A. Directory: Prepare a single, comprehensive directory of operation and maintenance data and materials, listing items and their location to facilitate ready access to desired information.
- B. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- C. Title Page: Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name and contact information for Contractor.
 - 6. Name and contact information for Construction Manager.
 - 7. Name and contact information for Engineer.
 - 8. Name and contact information for Commissioning Authority.
 - 9. Names and contact information for major consultants to the Engineer that designed the systems contained in the manuals.
 - 10. Cross-reference to related systems in other operation and maintenance manuals.
- D. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- E. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- F. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
 - 1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
 - 2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

- G. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.
1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name and subject matter of contents. Indicate volume number for multiple-volume sets.
 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.

2.2 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 2. Performance and design criteria if Contractor is delegated design responsibility.
 3. Operating standards.
 4. Operating procedures.
 5. Operating logs.
 6. Wiring diagrams.
 7. Control diagrams.
 8. Piped system diagrams.
 9. Precautions against improper use.
 10. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:
1. Product name and model number. Use designations for products indicated on Contract Documents.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.
 4. Equipment function.
 5. Operating characteristics.
 6. Limiting conditions.
 7. Performance curves.
 8. Engineering data and tests.
 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
 2. Equipment or system break-in procedures.
 3. Routine and normal operating instructions.
 4. Regulation and control procedures.
 5. Instructions on stopping.
 6. Normal shutdown instructions.
 7. Seasonal and weekend operating instructions.
 8. Required sequences for electric or electronic systems.
 9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.3 PRODUCT MAINTENANCE MANUALS

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Product Information: Include the following, as applicable:
1. Product name and model number.
 2. Manufacturer's name.
 3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
1. Inspection procedures.
 2. Types of cleaning agents to be used and methods of cleaning.
 3. List of cleaning agents and methods of cleaning detrimental to product.
 4. Schedule for routine cleaning and maintenance.
 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

2.4 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
 - 1. Standard maintenance instructions and bulletins.
 - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 - 3. Identification and nomenclature of parts and components.
 - 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 - 1. Test and inspection instructions.
 - 2. Troubleshooting guide.
 - 3. Precautions against improper maintenance.
 - 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - 5. Aligning, adjusting, and checking instructions.
 - 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- B. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- C. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Product Data.
- B. Related Requirements:
 - 1. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one set of marked-up record prints.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised Drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Record data as soon as possible after obtaining it.
 - c. Record and check the markup before enclosing concealed installations.
 - 2. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 - 3. Mark record sets with red colored pen. Use other colors to distinguish between changes for different categories of the Work at same location.

4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

2.2 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as paper copy.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. **Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss.** Provide access to project record documents for Engineer's reference during normal working hours.

END OF SECTION 0178

NORTH CAROLINA

AGREEMENT

NEW HANOVER COUNTY

THIS CONTRACT made and entered into this _____ day of _____ 2014 by and between **NEW HANOVER COUNTY**, a political subdivision of the State of North Carolina, hereinafter referred to as "County"; and _____, a _____, hereinafter referred to as "Contractor."

WITNESSETH:

That the Contractor, for the consideration hereinafter fully set out, hereby agrees with the County as follows:

1. Scope of Services. Contractor shall provide labor and materials necessary for the installation of a fresh air machine located at the JY Monk unit of the New Hanover County Government Center located at 230 Government Center Drive, Wilmington, North Carolina, as more fully described on Exhibit A, attached hereto and incorporated herein by reference.

2. Time of Performance. Contract shall begin work upon Notice to Proceed and work shall be completed within forty-five (45) days of said Notice.

3. Payment. County hereby agrees to pay for the cost of this Contract not to exceed a sum of _____ (\$_____) Dollars.

4. Extra Work. County and Contractor shall negotiate and agree upon the value of any extra work or services prior to the issuance of a County Change Order or Renewal/Amendment (CRA) form covering said extra work or services. Such Change Order or CRA shall set forth the corresponding adjustment, if any, to the Contract Price and Contract Time.

5. Indemnity. Contractor shall indemnify and hold County, its officers, officials, agents, and employees, harmless against any and all claims, demands, causes of action, or other liability, including attorney fees, on account of Contract or personal injuries or death or on account of property damages arising out of or relating to the work or services to be performed by Contractor hereunder, resulting from the negligence of or the willful act or omission of Contractor, its agents, employees and subcontractors.

6. Insurance. Before commencing any work or services, Contractor shall procure insurance in Contractor's name and maintain all insurance policies for the duration of the Contract of the types and in the amounts listed in this Contract. The insurance shall provide coverage against claims for injuries to persons or damages to property which may arise from operations or in connection with the performance of the work hereunder by Contractor, its agents, representatives, employees, or subcontractors, whether such operations by itself or anyone directly or indirectly employed by it.

7. Minimum Scope and Limits of Insurance

7.1 Commercial General Liability

7.1.1 Contractor shall maintain Commercial General Liability (CGL) and if necessary, Commercial Umbrella Liability insurance with a total limit of not less than \$1,000,000 each occurrence for bodily injury and property damage. If such CGL insurance contains a general aggregate limit, it shall apply separately to this work or services, or the general aggregate shall be twice the required limit.

7.1.2 CGL insurance shall be written on Insurance Services Office (ISO) "occurrence" form CG 00 01 covering CGL or its equivalent and shall cover the liability arising from premises, operations, independent contractors, products-completed operations, personal and advertising injury, and liability assumed under an insured contract, including the tort liability of another assumed in a business contract.

7.1.3 County, its officers, officials, agents, and employees are to be covered as additional insureds under the CGL by endorsement CG 20 10 and CG 20 37 or an endorsement providing equivalent coverage as respects to liability arising out of activities performed by or on behalf of Contractor; products and completed operations of Contractor; premises owned, leased or used by Contractor; and under the commercial umbrella, if any. The coverage shall contain no special limitations on the scope of protection afforded to County, its officers, officials, agents, and employees.

7.1.4 Contractor's CGL insurance shall be primary as respects County, its officers, officials, agents, and employees. Any other insurance or self-insurance maintained by County, its officers, officials, agents, and employees shall be excess of and not contribute with Contractor's insurance.

7.2 Workers' Compensation and Employer's Liability

7.2.1 Contractor shall maintain Workers' Compensation as required by the general statutes of the State of North Carolina and Employer's Liability Insurance.

7.2.2 The Employer's Liability, and if necessary, Commercial Umbrella Liability insurance shall not be less than \$500,000 each accident for bodily injury by accident, \$500,000 each employee for bodily injury by disease, and \$500,000 policy limit.

7.2.3 The insurer shall agree to waive all rights of subrogation against County, its officers, officials, agents, and employees for losses arising from work or services performed by Contractor for County.

7.3 Business Auto Liability

7.3.1 Contractor shall maintain Business or Personal Auto Liability and, if necessary, Commercial Umbrella Liability insurance with a limit of not less than \$1,000,000 each accident.

7.3.2 Such insurance shall cover liability arising out of any auto, including owned, hired, and non-owned autos.

7.3.3 Business Auto coverage shall be written on ISO form CA 00 01, or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide Contractual liability coverage equivalent to that provided in ISO form CA 00 01.

7.3.4 Contractor's Business Auto Liability insurance shall be primary as respects County, its officers, officials, agents, and employees. Any other insurance or self-insurance maintained by County, its officers, officials, agents, and employees shall be excess of and not contribute with Contractor's insurance.

7.4 Installation Floater

7.4.1 Contractor shall purchase and maintain in force Installation Floater insurance for the installation of equipment. Such insurance shall be written in an amount equal to the replacement cost of the equipment. The insurance shall apply on a replacement cost basis.

7.4.2 Insured property shall include portions of the work located away from the site but intended for use at the site, and shall also cover portions of the work in transit.

7.4.3 Installation Floater insurance shall name County as loss payee.

7.4.4 Installation Floater Insurance shall, at a minimum, cover the perils insured under the ISO special causes of loss form (CP 10 30).

7.4.5 Any deductible applicable to the Installation Floater shall be paid by Contractor

7.4.6 If County is damaged by the failure of Contractor to maintain Installation Floater insurance, then Contractor shall bear all reasonable costs properly attributable to that failure.

7.5 Deductibles and Self-Insured Retentions

7.5.1 Any deductibles or self-insured retentions must be declared to and approved by County. At the option of County, either the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects County, its officers, officials, agents, or employees; or Contractor shall procure a bond guaranteeing payment of deductibles or self-insured retentions.

7.5.2 Contractor shall be solely responsible for the payment of all deductibles to which such policies are subject, whether or not County is an insured under the policy.

7.6 Miscellaneous Insurance Provisions

7.6.1 The policies are to contain, or be endorsed to contain, the following provisions:

7.6.2 Any failure to comply with reporting provisions of the policies listed in this Contract shall not affect coverage provided to County its officers, officials agents, and employees.

7.6.3 Each insurance policy required by this Contract shall be endorsed to state that coverage shall not canceled by either party except after thirty (30) days prior written notice has been given to County, 230 Government Center Drive #125, Wilmington, NC 28403.

7.6.4 If Contractor's liability policies do not contain the standard ISO separation of insureds provision, or a substantially similar clause, they shall be endorsed to provide cross-liability coverage.

7.7. Acceptability of Insurers

7.7.1 Insurance is to be placed with insurers licensed to do business in the State of North Carolina with an A.M. Best's rating of no less than A VII unless County has granted specific approval.

7.8 Evidence of Insurance

7.8.1 Contractor shall furnish County with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements prior to commencing the work, and thereafter upon renewal or replacement of each certified coverage until all operations under this Contract are deemed complete.

7.8.2 Evidence of additional insured status shall be noted on the certificate of insurance as per requirements in this Contract.

7.8.3 With respect to insurance maintained after final payment in compliance with requirements, an additional certificate(s) evidencing such coverage shall be provided to County with final application for payment and thereafter upon renewal or replacement of such insurance until the expiration of the period for which such insurance must be maintained.

7.9 Sub-Contractors. Contractor shall include all sub-contractors as insureds under its policies or shall furnish separate certificates for each sub-contractor. All coverage for sub-contractors shall be subject to all of the requirements stated herein. CGL coverage shall include independent Contractors' coverage, and Contractor shall be responsible for assuring that all sub-Contractors are properly insured.

7.10 Conditions

7.10.1 The insurance required for this Contract must be on forms acceptable to County.

7.10.2 Where circumstances warrant, County may, at its discretion subject to acceptance by the Risk Management and Finance Department accept letters of credit or custodial accounts in lieu of specific insurance requirements.

7.10.3 Contractor shall provide that the insurance contributing to satisfaction of insurance requirements in this Contract shall not be canceled, terminated, or modified by Contractor without prior written approval of County.

7.10.4 Contractor shall promptly notify the New Hanover County Property Management Department and the Risk Management Office at (910) 798-7497 of any accidents arising in the course of operations under the Contract causing bodily injury or property damage.

7.10.5 County reserves the right to obtain complete, certified copies of all required insurance policies, at any time.

7.10.6 Failure of County to demand a certificate of insurance or other evidence of full compliance with these insurance requirements or failure of County to identify a deficiency from evidence that is provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

7.10.7 By requiring insurance herein, County does not represent that coverage and limits will necessarily be adequate to protect Contractor and such coverage and limits shall not be deemed as a limitation of Contractor's liability under the indemnities granted to County in this Contract.

7.10.10 If Contractor fails to maintain the insurance as set forth herein, County shall have the right, but not the obligation, to purchase said insurance at Contractor's expense.

7.10.11 Contractor or his engineer may apply to County for approval of higher deductibles based on financial capacity and quality of the carrier affording coverage.

7.10.12 County shall have the right, but not the obligation of prohibiting Contractor or any sub-contractor from entering the project site or withhold payment until such certificates or other evidence that insurance has been placed in complete compliance with these requirements is received and approved by County.

8. Independent Contractor. The parties mutually agree that the Contractor is an independent contractor and not an agent of the County, and as such, the Contractor shall not be entitled to any County employment benefits, such as, but not limited to, vacation, sick leave, insurance, workmen's compensation, or pension and retirement benefits.

9. Default and Termination. If Contractor fails to prosecute the work or services with such diligence as will insure its completion within the Contract time, or if Contractor breaches any of the terms or conditions contained in this Contract and fails

to cure said breach within two (2) days of County's mailing of Notice of Default, or otherwise fails to perform the work or services hereunder to the County's reasonable satisfaction, County may terminate this Contract forthwith. Upon termination, County may, without prejudice to an action for damages or any other remedy, take the prosecution of the work or services out of the hands of Contractor. County may enter into another Contract for the completion of the Contract, or use such other methods as may be required for the completion of the Contract. County may deduct all costs of completing the Contract from any monies due or which may become due to Contractor. In the event this Contract is terminated prior to completion of the services by the Contractor, the Contractor shall be paid for work or services performed to the date of termination. In no event will the amount due Contractor in the event of termination exceed that amount set forth in this Contract. Nothing contained herein shall prevent the County from pursuing any other remedy, which it may have against Contractor, including claims for damages.

10. Termination for Convenience. County may terminate this Contract for convenience at any time and without cause. Upon receipt of notice, Contractor shall immediately discontinue providing the work or service and, if applicable, placing any orders for any materials, facilities, and supplies in connection with the performance of the work or services of this Contract.

11. Non-waiver of Rights. The parties mutually agree that either party's failure to insist upon the strict performance of any provision of this Contract or to exercise any right based upon a breach thereof, or the acceptance of any performance during such breach, shall not constitute a waiver of any rights under this Contract.

12. Conflict of Interest. No paid employee of the County shall have a personal or financial interest, direct or indirect, as a contracting party or otherwise, in the performance of this Contract.

13. Subcontracts. The Contractor shall utilize no subcontractors for carrying out the services to be performed under this Contract without the written approval of the County.

14. Entire Contract. This Contract constitutes the entire understanding of the parties.

15. Binding Effect. This Contract shall be binding upon the parties hereto, and their heirs, successors, executors, administrators and assigns.

16. Further Actions. The parties will make and execute all further instruments and documents required to carry out the purposes and intent of this Contract.

17. Inclusive Terms. Use of the masculine herein shall include the feminine and neuter, and the singular shall include the plural.

18. Governing Law. All of the terms and conditions contained herein shall be interpreted in accordance with the laws of the State of North Carolina.

19. E-Verify Compliance. Pursuant to Session Law 2014-418, Contractor shall fully comply with the U.S. Department of Homeland Security employee legal status E-Verify requirements for itself and all its subcontractors. County shall be provided affidavits attesting to Contractor's compliance. Violation of the provision, unless timely cured, shall constitute a breach of Contract.

20. Notices. All notices required hereunder to be sent to either party shall be sent to the following designated addresses, or to such other address or addresses as may hereafter be designated by either party by mailing of written notice of such change of address, by Certified Mail, Return Receipt Requested:

To County:
New Hanover County Property Management
Attention: Dave Wittenberg
200 Division Drive
Wilmington, North Carolina, 28401

To Contractor:

21. Assignability. The parties hereto agree that this Contract is not transferable and shall not be assigned by either party without the written consent of the other party to this Contract.

22. Contract Under Seal. The parties hereto expressly agree to create a Contract under seal.

IN WITNESS WHEREOF, the parties have hereunto affixed their hands and seals, the day and year first above written and by authority duly given.

NEW HANOVER COUNTY

[SEAL]

_____ County Manager

ATTEST:

Clerk to the Board

CONTRACTOR

_____ (Seal)
President

[CORPORATE SEAL]

ATTEST:

Secretary

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

Approved as to form:

County Finance Director

County Attorney

NORTH CAROLINA

NEW HANOVER COUNTY

I, _____, a Notary Public of the State and County aforesaid, certify that Sheila L. Schult acknowledged that she is Clerk to the Board of Commissioners of New Hanover County, and that by authority duly given and as the act of the Board, the foregoing instrument was signed in its name by its _____ County Manager, sealed with its corporate seal and attested by herself as its Clerk.

WITNESS my hand and official seal, this _____ day of _____, 2014.

Notary Public

My commission expires: _____

NORTH CAROLINA

NEW HANOVER COUNTY

I, _____, a Notary Public of the State and County aforesaid, certify that _____ came before me this day and acknowledged that (s)he is Secretary of _____ a North Carolina corporation, and that by County duly given and as the act of the corporation, the foregoing instrument was signed in its name by its President, sealed with its corporate seal and attested by him/herself as its Secretary.

WITNESS my hand and official seal, this _____ day of _____, 2014.

Notary Public

My commission expires: _____

STATE OF NORTH CAROLINA

AFFIDAVIT

COUNTY OF _____

I, _____ (hereinafter Affiant), being duly authorized by and on behalf of _____ (hereinafter "Employer") after first being duly sworn hereby swears or affirms as follows:

1. Employer understands that E-Verify is the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law in accordance with NCGS §64-25(5).

2. Employer understands that Employers Must Use E-Verify. Each employer, after hiring an employee to work in the United States, shall verify the work authorization of the employee through E-Verify in accordance with NCGS§64-26(a).

3. Employer is a person, business entity, or other organization that transacts business in this State and that employs 25 or more employees in this State. (mark Yes or No)
a. YES _____, or
b. NO _____

4. Employer's subcontractors must comply with E-Verify and Employer will ensure compliance with E-Verify by any subcontractors subsequently hired.

This ____ day of _____, 2014.

Signature of Affiant

Print or Type Name: _____

State of North Carolina County of _____

Signed and sworn to (or affirmed) before me, this the _____

day of _____, 2014.

My Commission Expires:

Notary Public

(Affix Official/Notarial Seal)

NEW HANOVER COUNTY GOVERNMENT OFFICE

ELECTRICAL SPECIFICATIONS

1601 GENERAL

- INSTALLATION SHALL COMPLY WITH THE LATEST EDITION OF THE NORTH CAROLINA STATE BUILDING CODE, VOLUME 1 AND VOLUME X, NATIONAL ELECTRIC CODE, LOCAL BUILDING CODES AND ORDINANCES AND OTHER NATIONAL CODES AND ORDINANCES. IN THE CASE OF CONFLICT BETWEEN THE CODE AND THE DRAWINGS AND SPECIFICATIONS OR BETWEEN THE VARIOUS CODES, THEN THE MOST RESTRICTIVE SHALL TAKE PRECEDENT.
- PROVIDE AND PAY ALL LICENSES, FEES, PERMITS, POWER COMPANY CONNECTION CHARGES, IF ANY, INSURANCE, ETC., REQUIRED FOR EXECUTION OF THIS WORK.
- ELECTRICAL CONTRACTOR SHALL PROVIDE THE MATERIALS, PERFORM THE WORK AND TEST AND PAY ALL FEES NECESSARY TO MAKE THE ELECTRICAL SYSTEM OPERABLE AND READY FOR USE BY THE OWNER.
- GUARANTEE: EQUIPMENT, MATERIALS AND INSTALLATION SHALL BE GUARANTEED TO BE FREE OF DEFECTS FOR A PERIOD OF ONE (1) YEAR AFTER FINAL ACCEPTANCE OF WORK OR IN ACCORDANCE WITH THE MANUFACTURER'S STANDARD GUARANTEE IF LONGER.
- IT IS UNDERSTOOD AND AGREED THAT THESE PLANS AND SPECIFICATIONS SHALL BE FULFILLED IN THEIR TRUE SPIRIT AND INTENT SO THAT ANY MINOR MATERIALS OR DEVICES ESSENTIAL TO PROPER AND CONVENIENT OPERATION, REQUIRED OR IMPLIED, SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR WITHOUT EXTRA CHARGE, EVEN THOUGH NOT SPECIFICALLY CALLED OUT.
- INSTALLATION SHALL COMPLY WITH OSHA STANDARDS.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN CLEAN UP AND REMOVAL OF SCRAP FROM THE JOB SITE. THE ELECTRICAL CONTRACTOR SHALL MAINTAIN A CLEAN AND SAFE WORK AREA. THE ENGINEER IS NOT RESPONSIBLE FOR JOB SITE SAFETY.
- IN CASE OF CONFLICT BETWEEN THE PLANS AND SPECIFICATIONS OR CONFLICT BETWEEN INFORMATION PRESENTED ON THE PLANS OR IN THE SPECIFICATIONS, THEN THE MOST RESTRICTIVE SHALL TAKE PRECEDENT.
- DIVISION 1 SHALL BECOME A PART OF THESE SPECIFICATIONS BY REFERENCE.
- ALL ELECTRICAL COMPONENTS SHALL BE INSTALLED, SUPPORTED, AND RESTRAINED IN ACCORDANCE WITH THE NORTH CAROLINA BUILDING CODE REQUIREMENTS FOR SEISMIC DESIGN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RETAIN A PROFESSIONAL ENGINEER COMPETENT IN THIS FIELD FOR THIS DESIGN. FOR ONE POSSIBLE SOURCE FOR THIS SERVICE CONTACT SEISMIC CONTROL AND ISOLATIONS, INC. PHONE: 410 798-5204. ALL REQUIRED INSPECTIONS FOR THESE DESIGNS SHALL BE PERFORMED BY APPROVED INSPECTORS AND AGENCIES PROVIDED BY OWNER AND OWNER'S AGENT.
- THE PLAN SHOWN IS SCHEMATIC ONLY. DO NOT SCALE OFF OF THE ELECTRICAL PLANS. SCALE OFF OF THE ARCHITECTURAL PLANS ONLY.

1602 SCOPE

- WORK SHALL INCLUDE BUT IS NOT LIMITED TO:
 - DISCONNECT AND RECONNECT SERVICE TO AIR HANDLING UNIT AND OUTDOOR HEAT PUMP.
 - PROVIDE SERVICE TO A NEW AIR HANDLING UNIT, OUTDOOR CONDENSING UNIT AND FAN.
 - PROVIDE REQUIRED DEMOLITION.

1603 MATERIALS

- CONDUCTORS**
 - ALL WIRE SHALL BE COPPER, WIRE #8 AND LARGER SHALL BE STRANDED.
 - USE WIRE WITH THIN THIN INSULATION FOR ALL WIRE.
 - POWER CONDUCTORS SHALL BE #12 AWG MINIMUM. PILOT AND CONTROL CIRCUITS MAY BE #14 AWG.
- CONDUIT**
 - UNDERGROUND CONDUIT SHALL BE PVC. CHANGE TO RIGID GALVANIZED BELOW CONCRETE FLOOR AND STUB UP THROUGH FLOOR WITH RIGID GALVANIZED.
 - METAL CLAD CABLE SHALL BE ALLOWED IN CONCEALED AREAS.
 - OTHER ABOVE GRADE CONDUIT SHALL BE EMT WITH STEEL COMPRESSION FITTINGS. IF EXPOSED TO MECHANICAL DAMAGE CONDUIT SHALL BE RIGID GALVANIZED.
 - CONNECTIONS TO EQUIPMENT AND FIXTURES SHALL BE MADE WITH SEAL TIGHT FLEX CONDUIT FOR EXTERIOR CONNECTIONS AND GREENFIELD FOR INTERIOR CONNECTION.
- WIRING DEVICES SHALL BE ONE MAKE, UNDERWRITERS APPROVED, MANUFACTURED BY PASS & SEYMOUR, HUBBELL OR EQUAL. DEVICE COVERS SHALL BE WEATHERPROOF FOR EXTERIOR COVERS. WIRING DEVICES SHALL BE STANDARD GRADE. COLOR SHALL BE DETERMINED BY THE ARCHITECT.**
- DISTRIBUTION EQUIPMENT SHALL BE THE LATEST PRODUCT; MANUFACTURER SHALL BE G.E., SQUARE D, WESTINGHOUSE, OR ITE. INTERIOR EQUIPMENT SHALL BE NEMA 1 AND EXTERIOR EQUIPMENT SHALL BE NEMA 3R MINIMUM.**
- COORDINATE WITH POWER COMPANY TO OBTAIN BREAKER KAIC RATINGS. DRAWINGS SHALL INDICATE MINIMUM RATING. ALL BREAKERS SHALL BE BOLT ON TYPE. MAIN PANEL SHALL BE SERVICE ENTRY RATED AND LABELED. BREAKERS SHALL BE SERIES AND CURRENT LIMITING RATED.**
- PROVIDE MOTOR RATED SWITCHES FOR SWITCHES SERVING MOTORS AS REQUIRED.**
- FUSES SHALL BE CURRENT LIMITING TIME DELAY FUSES "CLASS RK5".**
- ALL EQUIPMENT AND FIXTURES SHALL BE UL APPROVED.**
- PROVIDE LAMPS FOR ALL FIXTURES. LAMPS SHALL BE G.E., OR SYLVANIA.**

1604 EXECUTION

- UNLESS OTHERWISE NOTED, SET ALL RECEPTACLES AT 16" AFF, AND SET ALL SWITCHES AT 48" AFF.
- HOLES SHALL BE DRILLED OR CUT. DO NOT BREAK HOLES.
- THE ELECTRICAL CONTRACTOR SHALL DO ALL CUTTING, PATCHING AND PAINTING NECESSARY TO INSTALL ALL EQUIPMENT AS REQUIRED UNDER THIS CONTRACT, AND SHALL ESTABLISH ALL FINISHES WHEN CUTTING AND PATCHING OCCUR TO THEIR ORIGINAL CONDITION. QUALIFIED WORKERS SHALL DO ALL CUTTING AND PATCHING WORK (I.E. DRY WALL CUTTING AND PATCHING SHALL BE DONE BY QUALIFIED DRY WALL CRAFTSMEN).
- PATCHING SHALL BE DONE BY THE ELECTRICAL CONTRACTOR. ALL PATCHING SHALL BE DONE BY A CRAFTSMAN SKILLED IN THE WORK BEING PERFORMED.
- WIRE SHALL BE COLOR CODED AS FOLLOWS:

PHASE A	120/208	BLACK
PHASE B		RED
PHASE C		BLUE
NEUTRAL		WHITE
GROUND		GREEN
- CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL EQUIPMENT AND POWER REQUIREMENTS FOR ALL EQUIPMENT BEFORE RUNNING SERVICE.
- CONDUIT AND WIRING IN FINISHED AREAS SHALL BE CONCEALED. ANY EXPOSED CONDUIT SHALL BE RUN IN A NEAT FASHION AND SHALL BE RUN PERPENDICULAR AND PARALLEL TO THE BUILDING LINES.
- CONTRACTOR SHALL PRESERVE ALL FIRE RATED WALLS AND CEILINGS. VERIFY RATING WAS OFF THE ARCHITECTURAL PLAN. THIS SHALL INCLUDE USING CAULKING THAT IS UL APPROVED FOR THE APPLICATIONS. OFFSETTING BOXES AS REQUIRED AND PROVIDING RATED CAPS OR COVERS FOR LIGHTS, AS REQUIRED.
- PROVIDE BOTH POWER AND SERVICE SIDE CONNECTIONS.

1605 DIRECTORY CARDS, NAME PLATES & EQUIPMENT LABELS

- PROVIDE A TYPED DIRECTORY CARD IN EACH PANELBOARD INDICATING ELECTRICAL DEVICES OR EQUIPMENT SERVED BY EACH CIRCUIT BREAKER. FURNISH BLANK COVERPLATE.
- PROVIDE NAMEPLATES FOR PANELS AND DISCONNECTS. NAMEPLATES SHALL BE LAMINATED PLASTIC. EACH NAMEPLATE SHALL IDENTIFY THE PANEL AND THE VOLTAGE. NAMEPLATES SHALL BE MELAMINE PLASTIC, 0.125 INCH THICK, BLACK WITH WHITE CENTER CORE. SURFACE SHALL BE MATTE FINISH. CORNERS SHALL BE SQUARE. ACCURATELY ALIGN LETTERING AND ENgrave INTO CORE. MINIMUM SIZE OF NAMEPLATES SHALL BE 1X2.5 INCHES. LETTERING SHALL BE A MINIMUM OF 0.25 INCHES HIGH, NORMAL BLOCK STYLE.

1606 TEST & ADJUSTMENTS

- TEST AND ADJUST THE ELECTRICAL SYSTEM AND RELATED WORK PROVIDED UNDER THIS DIVISION OF THE SPECIFICATIONS.
- TEST ALL CIRCUITS WITH A "MEGGER" TEST TO DETERMINE THAT THE SYSTEM IS FREE OF SHORT CIRCUITS AND THAT PHASE CONDUCTORS ARE NOT GROUNDED. CHECK ALL ELECTRICAL EQUIPMENT FOR PROPER OPERATIONS.

1607 GROUNDING

- THE SERVICE EQUIPMENT, CONDUIT SYSTEM SUPPORT CABINETS, EQUIPMENT AND NEUTRAL CONDUCTOR SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE. GROUNDING CONDUCTORS SHALL BE SO ROUTED AS TO PERMIT, AS FAR AS PRACTICAL, THE SHORTEST AND MOST DIRECT PATH TO THE GROUND ELECTRODE SYSTEM. ALL GROUND CONNECTIONS SHALL HAVE A CLEAN CONTACT SURFACE.
- RUN A SEPARATE EQUIPMENT GROUND IN ALL FEEDS.

1608 SUBSTITUTION

- ALL MATERIALS SHALL BE NEW UNLESS OTHERWISE SHOWN OR SPECIFIED AND SHALL BE OF THE VERY BEST QUALITY AS SPECIFIED.
- REQUESTS TO SUBSTITUTE OTHER MATERIALS OR PRODUCTS FOR THOSE SPECIFIED SHALL BE SENT IN WRITING TO THE OWNER. REQUESTS SHALL BE ACCOMPANIED BY ENGINEERING DATA, SPECIFICATION SHEETS, ETC., AS NECESSARY TO FULLY IDENTIFY AND APPRAISE THE PRODUCTS.
- APPROVAL OF EQUIPMENT WILL NOT RELIEVE THE CONTRACTOR OF NONCOMPLIANCE WITH THE SPECIFICATIONS EVEN IF SUCH APPROVAL IS MADE IN WRITING, UNLESS THE ENGINEER IS CALLED TO THE NONCONFORMING FEATURES BY LETTER ACCOMPANYING THE SUBMITTAL DATA.

1609 VISIT TO SITE

- ALL BIDDERS ON THIS WORK SHALL VISIT THE SITE AND THOROUGHLY FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS BEFORE SUBMITTING THEIR BIDS. NO ALLOWANCE WILL BE MADE FOR LACK OF KNOWLEDGE OF EXISTING CONDITION.

1610 SHOP DRAWINGS

- AS SOON AS POSSIBLE (AND NOT MORE THAN 30 DAYS) AFTER THE CONTRACT IS SIGNED, THE CONTRACTOR SHALL SUBMIT FIVE (5) COPIES OF THE SHOP DRAWINGS COVERING LIGHTING FIXTURES, PANELS, CIRCUIT BREAKERS, AND WIRING DEVICES, AND ANY SPECIAL EQUIPMENT WHICH HE INTENDS TO USE. SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER FOR HIS APPROVAL.

PANEL - A (EXISTING)											
TYPE		BOLT-ON		MOUNTING		FLUSH		ENCLOSURE		NEMA-1	
VOLTS		120/208		MAIN		200A MLO		FRAME		SHORT CIR. RATING	
RMS SYM		MIN									
CKT. NO.	CKT. BKR. TRIP	DESCRIPTION	PHASE LOADING			LOADING PHASE			DESCRIPTION	CKT. BKR. TRIP	CKT. NO.
			A	B	C	A	B	C			
1	20/1									20/1	2
3	20/1									20/1	4
5	20/1									20/1	6
7	20/1									20/1	8
9	20/1								HVAC (AHU-1)	50/3	10
11	20/1										12
13	100/3	PANEL SA							HVAC (HP-1)	40/3	16
15											18
17											20
19	20/1	LTS									22
21	20/1									20/1	24
23	20/1									20/1	26
25		BLANK									28
27		BLANK								20/1	30
29		BLANK									32
31											34
33											36
35											38
37											40
39											42
41											
42											
SUBTOTAL											
TOTAL PANEL LOAD: Aφ 37A Bφ 41A Cφ 45A NEUTRAL TERMINAL BAR <input checked="" type="checkbox"/> GROUND TERMINAL BAR <input checked="" type="checkbox"/>											

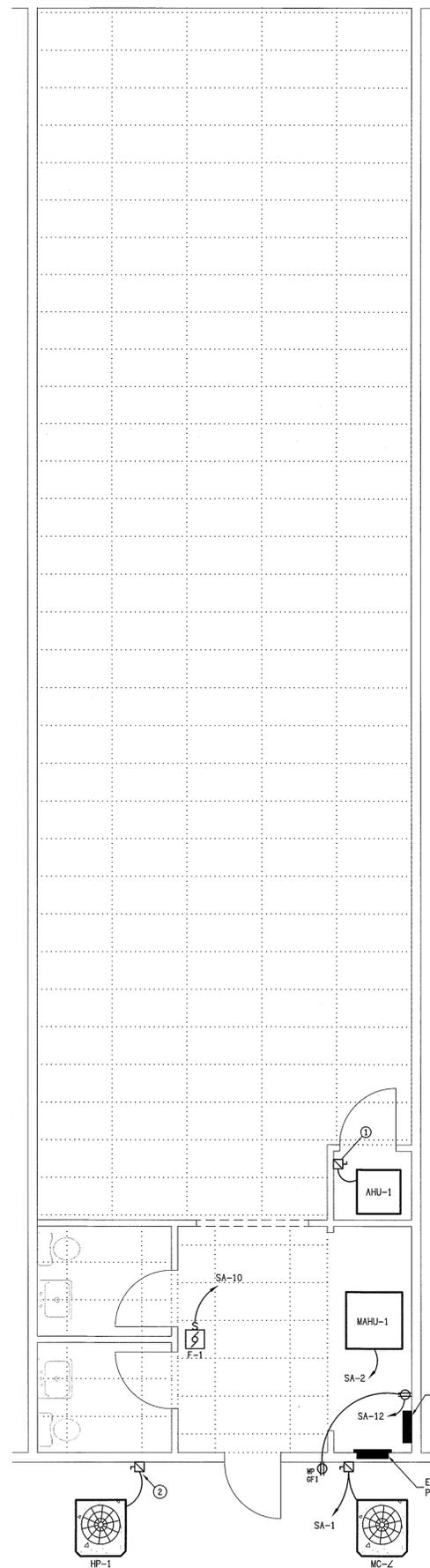
NOTES:
 (1) CONNECT NEW AHU-1 TO SPARE 50/3 SERVICE AND CONNECT THE NEW HP-1 TO THE 40/3 SERVICE. SWITCH THE 50/3 AND 40/3 BREAKER IF REQUIRED.
 (2) EXISTING BREAKER, NEW SERVICE AND PANEL.

PANEL - SA (NEW)											
TYPE		LOAD CENTER		MOUNTING		SURFACE		ENCLOSURE		NEMA-1	
VOLTS		120/208		MAIN		100A MLO		FRAME		100A SHORT CIR. RATING	
RMS SYM		MIN									
CKT. NO.	CKT. BKR. TRIP	DESCRIPTION	PHASE LOADING			LOADING PHASE			DESCRIPTION	CKT. BKR. TRIP	CKT. NO.
			A	B	C	A	B	C			
1	15/3	MC-1	4	4	4	33	33	37	MAHU-1	45/3	2
3											4
5											6
7	20/1	SPARE							SPARE	20/1	8
9	20/1	SPARE						4	F-1	20/1	10
11	20/1	SPARE						4	RECEPT	20/1	12
13		BLANK									14
15		BLANK									16
17		BLANK									18
19		BLANK									20
21		BLANK									22
23		BLANK									24
25											26
27											28
29											30
31											32
33											34
35											36
37											38
39											40
41											42
SUBTOTAL											
TOTAL PANEL LOAD: Aφ 37A Bφ 41A Cφ 45A NEUTRAL TERMINAL BAR <input checked="" type="checkbox"/> GROUND TERMINAL BAR <input checked="" type="checkbox"/>											

NOTES:
 (1) CONTRACTOR SHALL VERIFY ALL CONNECTIONS BEFORE RUNNING SERVICE OR ORDERING EQUIPMENT.

EQUIPMENT CONNECTION SCHEDULE											
SYMBOL	DESCRIPTION	HP	KW	AMP	VOLT	PHASE	BKR	FEEDER		CONNECTION	REMARKS
								COND	WIRE		
HP-1	5 TON HEAT PUMP	-	-	24	208	3	40/3	-	(EXISTING) 3#8, 1#10G	REUSE DISC. PROVIDE NEW FUSES	-
AHU-1	AIR HANDLING UNIT	-	10.8	33	208	3	50/3	-	(EXISTING) 3#8, 1#10G	-	-
MC-1	CONDENSING UNIT	-	-	4	208	3	15/3	1/2"	3#12, 1#10G	FUSED DISC. NEMA 3R	-
MAHU-1	AIR HANDLING UNIT	-	-	33	208	3	45/3	3/4"	3#8, 1#10G	FUSED DISC. NEMA 1	-

NOTES:
 1. CONTRACTOR SHALL VERIFY ALL CONNECTIONS BEFORE RUNNING SERVICE OR ORDERING EQUIPMENT.



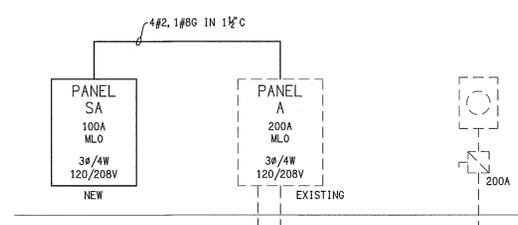
ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
S	SWITCH, SINGLE POLE, 120VAC, MOUNTED AT 48" AFF TO TOP OF OUTLET BOX
Sw	SWITCH, THREE WAY, 120VAC, MOUNTED AT 48" AFF TO TOP OF OUTLET BOX
SM	MANUAL MOTOR STARTER
⊕	DUPLEX CONVENIENCE RECEPTACLE, 120VAC, MOUNTED AT 18" AFF TO CENTER OF OUTLET BOX
⊙	JUNCTION BOX
—	ELECTRICAL PANEL, SURFACE
—	ELECTRICAL PANEL, FLUSH
⊗	DISCONNECT SWITCH, FUSIBLE
⊗	FAN BY MECHANICAL CONTRACTOR

ELECTRICAL ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
GFI	GROUND FAULT INTERRUPTING
3R	WEATHERPROOF ENCLOSURE
UNO	UNLESS NOTED OTHERWISE
RGS	RIGID GALVANIZED STEEL
WP	WEATHERPROOF
AHU	AIR HANDLING UNIT
HP	HEAT PUMP

NOTES:
 1. FOR 20A - 1φ - 120 VOLT SERVICE WIRE SIZE SHALL BE AS FOLLOWS:
 DIST TO 1st CONNECTION WIRE SIZE
 60' TO LESS #12
 60' TO 100' #10
 OVER 100' #8

KEY NOTES:

- DISCONNECT EXISTING AHU AND RECONNECT TO THE NEW AHU. CONNECT CIRCUIT WITH 50/3 BREAKER.
- DISCONNECT AND RECONNECT THE OUTDOOR HEAT PUMP. CONNECT TO THE 40/3 BREAKER.



B E1 POWER RISER
 SCALE: NTS

A E1 ELECTRICAL PLAN
 SCALE: 1/4" = 1'-0"

symbol	date	description	by
REVISIONS			

NEW HANOVER COUNTY GOVERNMENT OFFICE
REAL ESTATE TENANT
UNIT #127 - 42
HVAC MODIFICATION
NEW HANOVER COUNTY, NC

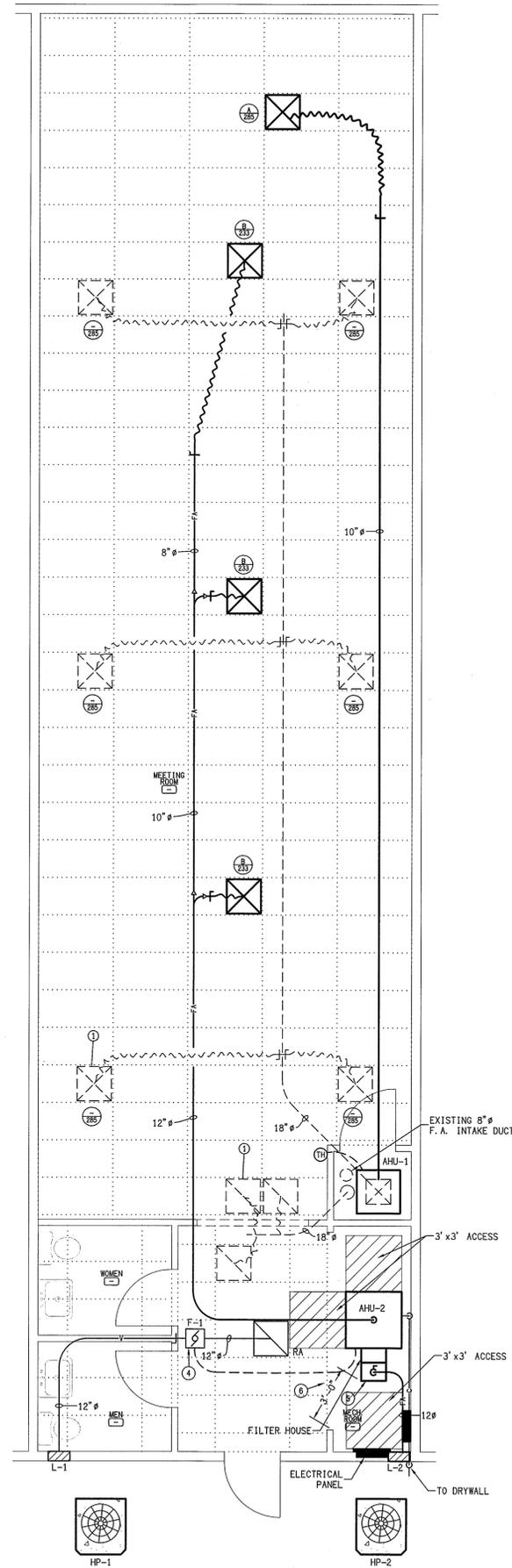
DAVID SIMS & ASSOCIATES Consulting Engineers, P.C.
 Arboretum Centre
 108 Giles Avenue - Suite 100 - Wilmington, N.C. 28403
 Phone - (910) 791-8016
 NC License: C-11150

des by :
 dwn by :
 proj number : 13095
 date : 5/14/13



SHEET NO. 075.13
E1
 OF
1

REGISTER SCHEDULE										
SYMBOL	DESCRIPTION	NECK	RUN OUT	RADIATION DAMPER	DAMPER AT REGISTER	MAT'L	COLOR	MFG.	MODEL	REMARKS
A	2x2 LAY-IN SUPPLY	12" ϕ	12" ϕ	NO	YES	STEEL	WHITE	H&C	FPD3-TBAR	-
B	2x2 LAY-IN SUPPLY	8" ϕ	8" ϕ	NO	YES	STEEL	WHITE	H&C	FPD3-TBAR	-
RA	2x2 LAY-IN RETURN	-	-	NO	NO	STEEL	WHITE	H&C	9445-TBAR	-



MECHANICAL LEGEND	
	SUPPLY REGISTER - WALL
	SUPPLY REGISTER - CEILING
	EXISTING GRILLE
	RETURN REGISTER - CEILING
	THERMOSTAT WITH HUMIDITY CONTROL
	RECTANGULAR DUCT - 20" WIDE INSIDE A/C SYSTEM - 10" HIGH INSIDE
	TURNING VANES
	RIGID ROUND DUCT - 10" I.D.
	FLEX DUCT - 10" I.D.
	INLINE VENT FAN
	REGISTER CFM
	BALANCING DAMPER
	REDUCER
	FRESH AIR DUCT - NEW
	VENTILATION DUCT
	EXISTING DUCT

- KEY NOTES:**
- EXISTING DUCT AND GRILLES TO REMAIN.
 - CHANGE OUT EXISTING AHU AND RECONNECT BOTH SUPPLY AND RETURN DUCT AND CONNECT THE 8" ϕ FRESH AIR DUCT BUT SHUT DAMPER.
 - CHANGE OUT THE EXISTING OUTDOOR HEAT PUMP. PROVIDE NEW REFRIGERANT LINES AND FREON.
 - PROVIDE CONTROL THAT ACTIVATES FAN F-1 WHEN MAHU-1 OPERATES.
 - MAINTAIN 3'-0" IN FRONT OF EXISTING PANEL.
 - THE OPENING TO THE MECHANICAL ROOM SHALL BE ENLARGED BY THE COUNTY.

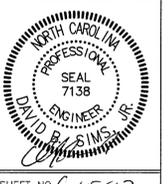
A MECHANICAL PLAN
 M1 SCALE: 1/4" = 1' -0"

symbol	date	description	by
REVISIONS			

NEW HANOVER COUNTY GOVERNMENT OFFICE
 REAL ESTATE TENANT
 UNIT #127 - 42
 HVAC MODIFICATION
 NEW HANOVER COUNTY, NC

DAVID SIMS & ASSOCIATES
 Consulting Engineers, P.C.
 Arboretum Centre
 108 Giles Avenue - Suite 100 - Wilmington, N.C. 28403 Phone (910) 791-8016
 NC License: C-1150

des by :
 dwn by :
 proj number : 13095
 date : 5/14/13



SHEET NO. 61513
M1
 OF
 2

NEW HANOVER COUNTY GOVERNMENT OFFICE

1700 MECHANICAL SPECIFICATIONS

1701 GENERAL

- A. CODES, REGULATIONS AND STANDARD INSTALLATION ARE TO COMPLY WITH THE LATEST EDITION OF THE NORTH CAROLINA STATE BUILDING CODE, NFPA 90A, AND ALL OTHER APPLICABLE LOCAL AND NATIONAL CODES. IN THE CASE OF CONFLICT BETWEEN VARIOUS CODES, THEN THE MOST RESTRICTIVE SHALL TAKE PRECEDENCE.
- B. FEES AND PERMITS: PROVIDE ALL LICENSES, FEES, PERMITS, INSURANCE, ETC., REQUIRED FOR THE EXECUTION OF THIS WORK.
- C. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL MATERIALS, PERFORM ALL WORK AND TEST AND PAY ALL FEES NECESSARY TO MAKE THE HEATING, AIR CONDITIONING AND VENTING SYSTEM OPERABLE AND READY FOR USE BY THE OWNER.
- D. GUARANTEE: ALL EQUIPMENT, MATERIALS AND INSTALLATION SHALL BE GUARANTEED TO BE FREE OF DEFECTS FOR A PERIOD OF ONE (1) YEAR AFTER FINAL ACCEPTANCE OF WORK OR IN ACCORDANCE WITH THE MANUFACTURER'S STANDARD GUARANTEE, IF LONGER. ALL COMPRESSORS SHALL HAVE A FIVE (5) YEAR GUARANTEE STARTING AFTER FINAL ACCEPTANCE OF WORK.
- E. IT IS UNDERSTOOD AND AGREED THAT THESE PLANS AND SPECIFICATIONS SHALL BE FULFILLED IN THEIR TRUE SPIRIT AND INTENT SO THAT ANY MINOR MATERIALS OR DEVICES ESSENTIAL TO PROPER AND CONVENIENT OPERATION, REQUIRED OR IMPLIED, SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR WITHOUT EXTRA CHARGE, EVEN THOUGH NOT SPECIFICALLY CALLED FOR.
- F. INSTALLATION SHALL COMPLY WITH OSHA STANDARDS.
- G. IN CASE OF CONFLICT BETWEEN THE PLANS AND SPECIFICATIONS OR CONFLICT BETWEEN INFORMATION PRESENTED ON THE PLANS OR IN THE SPECIFICATIONS, THEN THE MOST RESTRICTIVE SHALL TAKE PRECEDENCE.
- H. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN CLEAN UP AND REMOVAL OF SCRAP FROM THE JOB SITE. THE MECHANICAL CONTRACTOR SHALL MAINTAIN A CLEAN AND SAFE WORK AREA. THE ENGINEER IS NOT RESPONSIBLE FOR JOB SAFETY SITE.
- I. DIVISION 1 SHALL BECOME APART OF THESE SPECIFICATIONS BY REFERENCE.
- J. ALL MECHANICAL COMPONENTS SHALL BE INSTALLED, SUPPORTED, AND RESTRAINED IN ACCORDANCE WITH THE NORTH CAROLINA BUILDING CODE REQUIREMENTS FOR SEISMIC DESIGN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RETAIN A PROFESSIONAL ENGINEER COMPETENT IN THIS FIELD FOR THIS DESIGN. FOR ONE POSSIBLE SOURCE FOR THIS SERVICE CONTACT SEISMIC CONTROL AND ISOLATIONS, INC. PHONE: (910) 799-5204. ALL REQUIRED INSPECTIONS FOR THESE DESIGNS SHALL BE PERFORMED BY APPROVED INSPECTORS AND AGENCIES PROVIDED BY OWNER OR OWNER'S AGENT. THE PLAN SHOWN IS SCHEMATIC ONLY. DO NOT SCALE OFF OF THE MECHANICAL PLANS. SCALE OFF OF THE ARCHITECTURAL PLANS ONLY.
- L. THE CONTRACT DRAWINGS ARE SCHEMATIC ONLY AND ARE NOT INTENDED TO SHOW ALL FITTINGS, BOLTS, CONNECTIONS, OFFSETS, ETC., UNLESS SPECIFICALLY DIMENSIONED. THE MECHANICAL CONTRACTOR SHALL FOLLOW THE DRAWING AS CLOSELY AS POSSIBLE; HOWEVER, NECESSARY ADJUSTMENTS SHALL BE MADE AS REQUIRED TO CONFORM TO STRUCTURAL CONDITIONS, WORK OF OTHER CONTRACTORS AND THE INTENT OF THE DRAWINGS WITHOUT ADDITIONAL COST TO THE OWNER. THE DRAWINGS SHALL NOT BE SCALED. SECURE DIMENSIONS FROM ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL BUILDING COMPONENTS.

1702 SCOPE

- WORK SHALL INCLUDE BUT NOT BE LIMITED TO:
- A. CHANGE OUT A 4 TON HEAT PUMP AND AIR HANDLING UNIT WITH A 5 TON HEAT PUMP AND AIR HANDLING UNIT.
 - B. PROVIDE AND INSTALL A 100% FRESH AIR MAKE UP SYSTEM WITH DUCT AND GRILLES.
 - C. PROVIDE AND INSTALL A VENT FAN WITH DUCT, GRILLE AND LOUVER.
 - D. MODIFY THE DUCT TO THE EXISTING 4 TON SYSTEM.
 - E. PROVIDE AND INSTALL ALL CONTROLS. INCLUDE INTERLOCKING THE DISCHARGE FAN WITH THE AHU.

1703 MATERIALS

- A. AIR CONDITIONING DUCT SHALL BE:
 1. ALL HEATING AND COOLING MAIN SUPPLY DUCT AND MAIN RETURN DUCT SHALL BE GALVANIZED SHEET METAL UL LABELED FOR CLASS 1 AIR DUCT MEETING NFPA 90 FLAME SPREAD AND SMOKE GENERATION REQUIREMENTS.
 2. HEATING AND COOLING DUCT INSULATION SHALL COMPLY WITH ALL ENERGY CODE REQUIREMENTS AND HAVE AN R-VALUE OF 5.0 MINIMUM FOR COMMERCIAL SPACES THAT ARE NOT CONDITIONED. USE FOIL BACKED INSULATION WRAP.
 3. FLEX RUNOUTS SHALL BE FLEX DUCT BY ATCO OR EQUAL AND SHALL BE UL LABELED FOR CLASS 1 AIR DUCT MEETING NFPA 90 FLAME SPREAD AND SMOKE GENERATION REQUIREMENTS. MAXIMUM LENGTH SHALL BE 10'-0" AND HAVE A R-VALUE OF 8.0 MINIMUM.
 4. PROVIDE SINGLE THICKNESS TURNING VANES IN MAIN SUPPLY AND RETURN DUCT AT TEES AND 90° ELLS.
 5. FRESH AIR MAKEUP SHALL BE 26 GA MINIMUM WITH 1" OF EXTERIOR INSULATION.
 6. VENT DUCT SHALL BE 26GA MINIMUM GALVANIZED SHEET METAL WITHOUT INSULATION.
- B. THERMOSTAT CABLE SHALL BE UL APPROVED FOR THE APPLICATION.
- C. CONDENSATE PIPE SHALL BE 1" PVC WITH 1/2" ARMAFLEX TYPE INSULATION FOR INTERIOR RUNS. FOR PUMPED CONDENSATE USE 5/8" PLASTIC TUBING WITH 1/2" ARMAFLEX INSULATION.
- D. ALL RUNOUT SUPPLY DUCTS SHALL HAVE BALANCING DAMPERS.
- E. REFRIGERATION TUBING SHALL BE SIZED AND INSULATED AS PER MANUFACTURER'S RECOMMENDATIONS AND SHALL MEET ALL ENERGY CODE REQUIREMENTS.
- F. ALL SUPPLY AND RETURN GRILLES SHALL HAVE FULLY INSULATED BACK UNLESS NOTED OTHERWISE.

1704 EXECUTION

- A. ALL HOLES SHALL BE DRILLED OR CUT, DO NOT BREAK HOLES.
- B. THE MECHANICAL CONTRACTOR SHALL DO ALL CUTTING, PATCHING, AND PAINTING NECESSARY TO INSTALL ALL EQUIPMENT AS REQUIRED UNDER THIS CONTRACT, AND SHALL ESTABLISH ALL FINISHES WHEN CUTTING AND PATCHING OCCUR TO THEIR ORIGINAL CONDITION. QUALIFIED WORKERS SHALL DO ALL CUTTING AND PATCHING WORK (I.E. DRY WALL CUTTING AND PATCHING SHALL BE DONE BY QUALIFIED DRY WALL CRAFTSMEN).
- C. CONTRACTOR SHALL BALANCE THE AIR CONDITIONING SYSTEM AS SHOWN ON THE PLANS WITHIN 10% OF THE NUMBER SHOWN. CONTRACTOR SHALL SUBMIT A BALANCING REPORT SHOWING THE ACTUAL CFM READINGS OF ALL SUPPLY REGISTERS TO THE ARCHITECT AT THE COMPLETION OF THE PROJECT.
- D. REFER TO THE INSIDE DIMENSIONS OF FREE AIR SPACE FOR SIZING DUCT.
- E. CONTRACTOR SHALL SUPPLY ALL HANGERS AND SUPPORTS NECESSARY TO SUSPEND DUCTWORK AND EQUIPMENT AS PER GOOD INSTALLATION PRACTICE.
- F. ALL DUCT SHALL BE CONSTRUCTED, SUPPORTED AND REINFORCED PER SMACNA STANDARDS.
- G. MECHANICAL CONTRACTOR SHALL PROVIDE ALL THERMOSTATS, CONTROL, RELAY, STARTERS ETC., FOR A COMPLETE CONTROL SYSTEM FOR THE HEAT PUMP UNITS.
- H. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR PENETRATIONS AND PATCHING.
- I. MECHANICAL CONTRACTOR SHALL PROVIDE ALL DUCT DETECTORS AND COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR AHU SHUTDOWN CONNECTIONS AND SIGNAL CONNECTIONS FOR THE DUCT DETECTORS. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL CODE REQUIRED SHUTDOWN SWITCHES.
- J. PROVIDE ACCESS DOOR TO ALL DUCT DETECTORS.
- K. MECHANICAL CONTRACTOR SHALL PROVIDE CONDENSATE PUMPS WHERE GRAVITY DRAINAGE OF CONDENSATE IS NOT POSSIBLE WITHOUT ADDITIONAL EXPENSE TO THE OWNER.
- L. INSTALLATION SHALL COMPLY WITH ALL N.C. STATE BUILDING AND ENERGY CODE REQUIREMENTS.
- M. UNLESS OTHERWISE NOTED, ROUND AND RECTANGULAR DUCT CAN BE INTERCHANGEABLE PROVIDED THE CHANGED DUCT'S CROSS-SECTIONED AREA IS EQUAL TO OR EXCEEDS THAT OF THE SPECIFIED DUCT, AND THE CHANGE DOES NOT CAUSE CLEARANCE PROBLEMS.

1705 ELECTRICAL CONNECTIONS

- ELECTRICAL CIRCUIT SIZES AND NUMBER ARE BASED ON THE MANUFACTURER OF THE EQUIPMENT SPECIFIED, AND IT SHALL BE THE RESPONSIBILITY OF THE HEATING AND AIR CONDITIONING CONTRACTOR TO CHANGE ANY AND ALL ELECTRICAL WORK IN ORDER TO FIT EQUIPMENT OTHER THAN THAT SPECIFIED. THE HEATING AND AIR CONDITIONING CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR AND THE OWNER TO ASSURE THAT ALL UNITS ARE PROPERLY CONNECTED AND SHALL CHECK THE WIRING PRIOR TO STARTING UNITS. TERMINATION OF ELECTRICAL POWER WILL BE AS FOLLOWS:
1. ELECTRICAL CONTRACTOR SHALL PROVIDE AND CONNECT ALL POWER TO THE MECHANICAL EQUIPMENT.
 2. MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL THE CONTROL AND THERMOSTAT SYSTEMS FOR THE HEATING, AIR CONDITIONING SYSTEMS.
 3. MECHANICAL CONTRACTOR SHALL PROVIDE THE EMERGENCY SHUTDOWN CONTROLS AND COORDINATE WITH THE ELECTRICAL CONTRACTOR ON DUCT DETECTOR INSTALLATION AND AIR HANDLING UNIT SHUTDOWN.
 4. MECHANICAL CONTRACTOR SHALL PROVIDE ANY REQUIRED ELECTRICAL CONNECTIONS FOR CONDENSATE PUMPS WITHOUT ADDITIONAL COST TO THE OWNER.

1706 TESTS

- A. ALL HEATING COOLING AND VENTILATION EQUIPMENT, UPON COMPLETION, SHALL BE TESTED FOR AT LEAST ONE (1) DAY AND SHALL BE SHOWN TO BE IN SATISFACTORY CONDITION ON BOTH HEATING AND COOLING.
- B. CONTRACTOR SHALL SUPPLY ALL NECESSARY LABOR AND EQUIPMENT FOR THE TEST.

1707 SUBSTITUTION

- ALL MATERIALS SHALL BE NEW UNLESS OTHERWISE SHOWN OR SPECIFIED AND SHALL BE OF THE VERY BEST QUALITY AS SPECIFIED. REQUESTS TO SUBSTITUTE OTHER MATERIALS OR PRODUCTS FOR THOSE SPECIFIED SHALL BE SENT IN WRITING TO THE OWNER. REQUESTS SHALL BE ACCOMPANIED BY ENGINEERING DATA, SPECIFICATION SHEETS, ETC., AS NECESSARY TO FULLY IDENTIFY AND APPRAISE THE PRODUCTS. APPROVAL OF EQUIPMENT WILL NOT RELIEVE THE CONTRACTOR OF NONCOMPLIANCE WITH THE SPECIFICATIONS EVEN IF SUCH APPROVAL IS MADE IN WRITING, UNLESS THE ENGINEER IS CALLED TO THE NONCONFORMING FEATURES BY LETTER ACCOMPANYING THE SUBMITTAL DATA.

1708 VISIT TO SITE

- ALL BIDDERS ON THIS WORK SHALL VISIT THE SITE AND THOROUGHLY FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS BEFORE SUBMITTING THEIR BIDS. NO ALLOWANCE WILL BE MADE FOR LACK OF KNOWLEDGE OF EXISTING CONDITIONS.

1709 SHOP DRAWINGS

- AS SOON AS POSSIBLE (AND NOT MORE THAN 30 DAYS) AFTER CONTRACT IS SIGNED, THE CONTRACTOR SHALL SUBMIT FIVE (5) COPIES OF SHOP DRAWINGS OF HEAT PUMPS, 100% FRESH AIR MAKE UP SYSTEM, REGISTERS, FANS, AND ANY SPECIAL EQUIPMENT WHICH HE INTENDS TO USE. FOUR (4) COPIES OF THIS DATA WILL BE RETURNED BY THE ENGINEER WHO WILL INDICATE APPROVAL OR OTHERWISE.

1710 PLACING IN SERVICE

- A. UPON COMPLETION OF THE ENTIRE SYSTEM, THE MECHANICAL CONTRACTOR SHALL INSTALL NEW FILTERS AND LEAVE ENTIRE SYSTEM CLEAN AND READY FOR OPERATION.
- B. THE MECHANICAL CONTRACTOR SHALL DEMONSTRATE THE PROPER FUNCTION OF THE ENTIRE SYSTEM. THE MECHANICAL CONTRACTOR SHALL ACQUAINT THE OWNER'S REPRESENTATIVE WITH THE PROPER OPERATION ON THE ENTIRE SYSTEM.

SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE										AIR HANDLER													
SYMBOL	COOLING CAP	ELECTRIC				MANUF.	MODEL	SYMBOL	TYPE	ELECTRIC				STAGES		MANUF.	MODEL	FAN CFM	FRESH AIR INTAKE (CFM)	ESP (IN OF H2O) VERT./H.R.	SEER	DUCT DETECTOR	REMARKS
		VOLT	PHASE	MCA	FUSE					STRIP (KW)	VOLT	PHASE	FUSE	HEAT	COOL								
HP-1	5 TON	208	3	24	40	TRANE	4TWA30360	AHU-1	VERTICAL	10.8	208	3	50/3	1	1	TRANE	GAMSAC060M515A	1975	0	0.6"	13	NO	-

NOTES A/C UNITS:

1. PROVIDE GALVANIZED DRIP PAN AND PROVIDE FLOAT SWITCH.
2. INCLUDE AUTOMATIC CROSSOVER THERMOSTAT SET AT 5'-0" AFF. PROVIDE PROGRAMMABLE THERMOSTATS WITH SETBACK TO 55' (HEAT AND 85' (COOL), 7 DAY CLOCK, 2 HOUR OCCUPANT OVERRIDE, 10 HOUR BACKUP. PROVIDE 5' DEAD BAND FOR AUTO CHANGEOVER.
3. REUSE EXISTING CONCRETE PAD FOR COMPRESSOR.
4. CONTRACTOR SHALL BALANCE SYSTEM. CONTRACTOR SHALL PRESENT BALANCING REPORT TO ARCHITECT AT FINAL INSPECTION.
5. CONTRACTOR SHALL CONSTRUCT FILTER HOUSING AND PROVIDE FILTERS AT EACH AHU. FILTER SHALL BE SIZED PER MFG. RECOMMENDATIONS.
6. PROVIDE MANUFACTURER RECOMMENDED CLEARANCES AROUND ALL INDOOR AND OUTDOOR UNITS.
7. CONSULT WITH COMPRESSOR MANUFACTURER FOR THE CORRECT SIZING OF REFRIGERANT LINES.
8. PROVIDE LOW AMBIENT CONTROLS FOR FREEZE PROTECTION.
9. PROVIDE CONTROLS THAT PREVENT AUXILIARY HEAT STRIPS FROM BEING ACTIVATED WHEN THE HEAT PUMP CAN HANDLE THE HEATING LOAD EXCEPT DURING DEFROST CYCLE.
10. PROVIDE CONTROLS THAT PREVENT AUXILIARY HEAT STRIPS FROM BEING ACTIVATED WHEN THE HEAT PUMP CAN HANDLE THE HEATING LOAD EXCEPT DURING DEFROST CYCLE AND DEHUMIDIFICATION CYCLE.
11. PROVIDE HUMIDISTAT. HUMIDISTAT SHALL ACTIVATE THE COOLING CYCLE UPON HIGH HUMIDITY CALL. THE THERMOSTAT SHALL BE CAPABLE OF OPERATING THE HEAT STRIPS FOR TEMPERATURE CONTROL WHILE A HIGH HUMIDITY CALL IS BEING MADE. CONSULT WITH EQUIPMENT MANUFACTURER FOR WIRING DIAGRAM.

LOUVER SCHEDULE

SYMBOL	DESCRIPTION	SIZE WxH	RAIN	DAMPER	SCREEN	MATERIAL	PAINT	MANUFACTURER	MODEL	REMARKS
L-1	DISCHARGE LOUVER	18"x18"	YES	PROVIDE BACKDRAFT	BIRD	ALUMINUM	NO	RUSKIN	-	LOUVER TO BE 4" DEEP
L-2	INTAKE LOUVER	18"x18"	YES	PROVIDE BACKDRAFT	BIRD	ALUMINUM	NO	RUSKIN	-	LOUVER TO BE 4" DEEP

FAN SCHEDULE

SYMBOL	DESCRIPTION	CFM SETTING	CFM AVAILABLE	SP	VOLT	PHASE	HP	AMPS	MOUNTING	MANUFACTURER	MODEL	REMARKS
F-1	VENT	600	741	1/4	120	1	-	4	INLINE	GREENHECK	CSP-780	-

FAN NOTES:

1. PROVIDE BACKDRAFT DAMPER.
2. PROVIDE VARIABLE SPEED CONTROL.
3. INTERLOCK FAN WITH AHU-2 (FRESH AIR MAKE UP SYSTEM) TO RUN WITH AHU.

SPLIT SYSTEM 100% FRESH AIR UNIT SCHEDULE

SPLIT SYSTEM 100% FRESH AIR UNIT SCHEDULE										AIR HANDLER															
SYMBOL	COOLING CAP	ELECTRIC				MANUF.	MODEL	SYMBOL	TYPE	ELECTRIC				WINTER		SUMMER		MANUF.	MODEL	FAN CFM	FRESH AIR INTAKE (CFM)	ESP (IN OF H2O) VERT./H.R.	DUCT DETECTOR	REMARKS	
		VOLT	PHASE	MCA	FUSE					STRIP (KW)	VOLT	PHASE	FUSE	EAT DB	MAX UNIT	EAT DB	EAT DB								
MC-1	4 TON	208	3	4	15/3	DESERT AIRE	RC5024C340900	MAHU-1	VERT.	11	208	3	41	45/3	23° F	73° F	85° F	79.7° F	DESERT AIRE	QV04	700	700	1"	NO	-

NOTES A/C UNITS:

1. PROVIDE GALVANIZED DRIP PAN AT UNIT AND PROVIDE FLOAT SWITCH.
2. PROVIDE CONCRETE PAD FOR OUTDOOR UNIT.
3. CONTRACTOR SHALL BALANCE SYSTEM. CONTRACTOR SHALL PRESENT BALANCING REPORT TO OWNER AT FINAL INSPECTION.
4. PROVIDE FILTER. FILTER SHALL BE SIZED PER MFG. RECOMMENDATIONS.
5. PROVIDE FRENCH DRAINS PER N.C. STATE CODE FOR CONDENSATE DISCHARGE.
6. PROVIDE MANUFACTURER RECOMMENDED CLEARANCES AROUND ALL INDOOR AND OUTDOOR UNITS.
7. CONSULT WITH COMPRESSOR MANUFACTURER FOR THE CORRECT SIZING OF REFRIGERANT LINES.
8. UNIT SHALL USE HOT GAS FOR REHEAT.
9. PROVIDE 68° AIR TO THE ROOM IN THE WINTER.
10. COORDINATE WITH THE OWNER FOR THE SETTING FOR TEMPERATURE AND HUMIDITY FOR SUMMER CONDITIONS.

COMPLIANCE SCHEDULE - MECHANICAL

METHOD OF COMPLIANCE	PRESSCRIPTIVE
ENERGY COST BUDGET	
THERMAL ZONE	3
EXTERIOR DESIGN CONDITIONS	
WINTER DRY BULB	22° F
SUMMER DRY BULB	94° F
INTERIOR DESIGN CONDITIONS	
WINTER DRY BULB	70° F
SUMMER DRY BULB	75° F
RELATIVE HUMIDITY	50% - 60%
BUILDING HEATING LOAD	56,312 BTUH
BUILDING COOLING LOAD	107,500 BTUH
MECHANICAL SPACING CONDITIONING SYSTEM	
UNITARY	
DESCRIPTION OF UNIT -	SEE EQUIPMENT SCHEDULE
HEATING EFFICIENCY -	
COOLING EFFICIENCY -	
HEAT OUTPUT OF UNIT -	
COOLING OUTPUT OF UNIT -	
BOILER	
TOTAL BOILER OUTPUT (IF OVERSIZED STATE REASON)	N/A
CHILLER	
TOTAL CHILLER CAPACITY	N/A
LIST EQUIPMENT EFFICIENCIES	SEE EQUIPMENT SCHEDULE
EQUIPMENT SCHEDULES WITH MOTORS	
(MECHANICAL SYSTEM)	
MOTOR HORSEPOWER	N/A
NUMBER OF PHASES	N/A
MINIMUM EFFICIENCY	N/A
MOTOR TYPE	N/A
# OF POLES	N/A

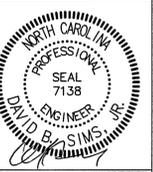
DESIGNER STATEMENT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE MECHANICAL SYSTEMS, SERVICE SYSTEMS, AND EQUIPMENT REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE.

SIGNED: DAVID B. SIMS JR.
 NAME: DAVID B. SIMS JR., PE
 TITLE: ENGINEER

NEW HANOVER COUNTY GOVERNMENT OFFICE
 REAL ESTATE TENANT
 UNIT #127 - 42
 HVAC MODIFICATION
 NEW HANOVER COUNTY, NC

DAVID SIMS & ASSOCIATES Consulting Engineers, P.C.
 Arboretum Centre
 108 Giles Avenue - Suite 100 - Wilmington, N.C. 28403 Phone (910) 791-8016
 NC License: C-1150

des by :
 dwn by :
 proj number : 13095
 date : 5/14/13



SHEET NO. 6-15-13

M2

OF 2

symbol	date	description	by
REVISIONS			